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Androniki Kavoura
Damianos P. Sakas
Petros Tomaras *Editors*

Strategic Innovative Marketing

4th IC-SIM, Mykonos, Greece 2015

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Preface

Aims and Scope of the Conference

The 4th International Conference on Strategic Innovative Marketing 2015 took place in Mykonos, Greece, during September 24–27, 2015. IC-SIM is an international interdisciplinary conference focusing on the theoretical approach to the contemporary issues involved in strategic marketing and the integration of theory and practice.

More than 267 pre-registered authors submitted their works in the conference. IC-SIM 2015 finally accepted and hosted 90 original research papers, after a double-blinded peer-review process. During the conference, 11 workshops were held in order to advance and contribute to specific research areas in the field of innovative marketing.

The conference created a forum for further discussion on strategic innovative marketing field incorporating a series of issues and/or related to organizations that manage marketing in their everyday operations. Therefore, the call for papers was addressed to scholars and/or professionals from different fields such as social media and marketing innovation, e-marketing and new technologies, strategic marketing, services and cultural marketing, international and cross-cultural marketing, marketing research and analytics, marketing communications, B2B, and B2C marketing. Furthermore, papers focused on the issues of consumer behavior and advertising and promotion were also welcomed. IC-SIM provides a common ground for the exchange of insights on strategic issues in science of innovation marketing, ensuring significant contributions to this field.

The primary objective of IC-SIM was the theoretical approach of contemporary issues evolved in strategic marketing and the integration of theory and practice. The conference provides a common ground for the exchange of insights on strategic issues in the science of innovation marketing, ensuring significant contributions to this field.

Grouping the emerging technologies in the marketing field together in a close examination of practices, problems, and trends, IC-SIM emphasizes integration and marketing, presenting the state of the art in the field. This annual event is addressed jointly to academics and practitioners and provides a forum for a number of

perspectives, based on either theoretical analyses or empirical case studies that foster dialogue and exchange of ideas.

Topics

Marketing of Innovation, Social Media Marketing, Innovations in Online Marketing, Marketing Technological Innovation, Facebook Marketing Strategies, Mobile Marketing, Blogging, Network Analysis, e-branding & Brand Experience Management, Digital Marketing, Marketing and Electronic Commerce, Marketing Analytics, Marketing Research, Marketing Information Systems, Marketing of Emerging Technologies, Sustainable Marketing, Distribution Channel Management, Integrated Marketing Communications, Strategic Marketing Services, Marketing Services, Branding/Online Brands, Benchmarking Strategies, Customer Satisfaction, Emerging Markets, Marketing Management, New Product Design and Development, Creativity Marketing, Sports Marketing, B2B and B2C Marketing, Pricing Strategies in Marketing, Marketing Theory and Applications, Art & Cultural Marketing, Cross-cultural Marketing, Tourism & Destination Marketing, Transport Industry Marketing, Experiential and Sensory Marketing, Customer Relationship Management and Social CRM, Collaborative Marketing, Safety Marketing, Business Economics, Economics of Business Strategy, Accounting Marketing, Global Business Marketing Finance, Healthcare Management, Accounting Education Skills & Competences Higher Education.

Paper Peer Review

More than 215 original papers had been submitted for consideration in IC-SIM 2015. All papers submitted to the conference were reviewed using a double-blind peer-review process. The scientific committee decided about whether or not to accept the submitted papers, with the contribution from competent and expert reviewers.

Thanks

We would like to thank all members that participated in any way in the IC-SIM 2015 Conference and especially:

- The famous publication house Springer for their communication sponsorship.
- The co-organizing universities and institutes for their support and development of a high-quality conference at scientific level and profile.

- The members of the scientific committee that honored the conference with their presence and provided a significant contribution to the review of papers as well as for their indications for the improvement of the conference.
- All members of the organizing committee for their help, support, and spirited participation before, during, and after the conference.
- The session organizers for their willing to organize sessions of high importance and for their editorial work, contributing in the development of valued services to the conference.
- Ms. Antonia Veltsista, editorial assistant.
- Dr. Dimitrios K. Nasiopoulos, editorial assistant.

Conference Details

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Keynote Speaker



Prof. Dimitrios Buhalis
Bournemouth University, UK

Professor Dimitrios Buhalis is Strategic Management and Marketing expert with specialization in Information Communication Technology applications in the Tourism, Travel, Hospitality, and Leisure industries. He is currently Director of the eTourism Lab and Deputy Director of the International Centre for Tourism and Hospitality Research, at Bournemouth University in England. Dimitrios is also the President of the International Federation for Information Technologies in Travel and Tourism (IFITT). An internationally renowned researcher, Prof. Dimitrios Buhalis is one of the world's most cited academics—and do not just take his word for it. He is frequently rated as the number one and the most influential author for articles in tourism management (Google Scholar/Publish or Perish 2010).

Invited Speakers



Prof. Philip J. Kitchen
ESC Rennes School of Business,
France

Professor Philip J. Kitchen, Ph.D., is Research Professor of Marketing, ESC Rennes School of Business, France. He previously served as Professor of Marketing at Brock University, Canada; Hull University, UK; and Queens School of Management, UK. Editor—Journal of Marketing Communications. He has published 14 books, and 150 papers in academic journals around the world. He is Fellow of the CIM, RSA, HEA; and member of the ALCS, Institute of Directors, UK; and member of the Institute of Marketing Science and the American Association of Advertising (USA).



Prof. Michael Belch
San Diego State University, USA

Michael Belch teaches Integrated Marketing Communications at San Diego State University, where he has received numerous awards such as Outstanding Professor award. He has also taught in France, Spain, China, Argentina, Chile, Colombia, Slovenia, and the Netherlands. Dr. Belch has co-authored numerous articles in academic journals on advertising, consumer behavior, and international marketing. Additionally, he co-authored with his brother Dr. George Belch, the number one IMC textbook, *Advertising and Promotion: An Integrated Marketing Communications Perspective*. Dr. Belch's previous employment includes Marketing Representative of General Foods Corporation, a consultant to a number of Fortune 500 companies including McDonalds, Whirlpool Corporation, Senco Products, GTI Corporation, IVAC, and May Companies, as well as advertising agencies including Phillips-Ramsey and Dailey & Associates. Professor Belch received his Ph.D. from the University of Pittsburgh.

Michael Belch teaches Integrated Marketing Communications at San Diego State University, where he has received numerous awards such as Outstanding Professor award. He has also taught in France, Spain, China, Argentina, Chile, Colombia, Slovenia, and the Netherlands. Dr. Belch has co-authored numerous articles in academic journals on advertising, consumer behavior, and international marketing. Additionally, he co-authored with his brother Dr. George Belch, the number one IMC textbook, *Advertising and Promotion: An Integrated Marketing Communications Perspective*. Dr. Belch's previous employment includes Marketing Representative of General Foods Corporation, a consultant to a number of Fortune 500



Prof. Nigel Morgan
University of Surrey, UK

Nigel Morgan is Professor of Tourism and Events Marketing at the University of Surrey's School of Hospitality and Tourism Management. He is an energetic advocate for the sustainable and inclusive development and marketing of cities, regions, and countries and is a widely published academic. He is author or editor of 19 books, including *Destination Branding: Managing Place Reputation* (2001, 2004, 2011). Nigel is Visiting Professor at the Norwegian Arctic University and the University of Sunderland and a member of 'The Best Place—European Place Marketing Institute', a place marketing think-tank. In 2013 he was appointed to the Advisory Board of Visit Wales, responsible for advising the Welsh Government on tourism strategy and scrutinizing the work of Visit Wales. Nigel has a background in tourism and public relations management and held a number of senior academic posts at Cardiff Metropolitan University during 1994–2013 before joining Surrey. Nigel has completed over 20 major consultancy projects across Europe and Asia, including advising UEFA and the BBC, while he is a leading partner in a £1.7 million multi-institution research project on tourism and events in northern regions funded by the Norwegian Research Council (2013–2016). Nigel is Associate Editor of the *Annals of Tourism Research* and an editorial/advisory board member of several international journals including *Place Branding & Public Diplomacy*, *Journal of Destination Marketing and Management*, *Tourist Studies*, *Hospitality & Society*, and *Vacation Marketing*.

Nigel Morgan is Professor of Tourism and Events Marketing at the University of Surrey's School of Hospitality and Tourism Management. He is an energetic advocate for the sustainable and inclusive development and marketing of cities, regions, and countries and is a widely published academic. He is author or editor of 19 books, including *Destination Branding: Managing Place Reputation* (2001, 2004, 2011). Nigel is Visiting Professor at the Norwegian Arctic University and the University of Sunderland and a member of 'The Best Place—European Place Marketing Institute', a place marketing think-tank. In 2013 he was appointed to the Advisory Board of Visit Wales, responsible for advising the Welsh Government



Prof. Aspasia Vlachvei
Technological Education
Institute of West Macedonia,
Greece

Aspassia Vlachvei is Professor of Marketing at Technological Education Institute of West Macedonia since 2002. Prior to that she has been employed in various capacities at the University of Macedonia, Aristotle University of Thessaloniki, University of Thessaly, and Technological Education Institute of Thessaloniki, Greece. She has been Visiting Professor in Kiev National University of Taras Shevchenko, Ukraine. She has also been Marketing Director at “Iraklia Cotton Ginning s.a.” for 5 years. Her research interests focus on international marketing strategies competitiveness and entrepreneurial behavior, wine tourism and wine marketing, e-marketing, advertising, and promotion. She is teaching graduate and post-graduate courses on marketing, international marketing, and human resource management. She is director

of M.Sc. program “Public relations and marketing with new technologies” and co-director of MBA program of Technological Educational Institute of West Macedonia.

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Part I

2nd Symposium on Transportation Marketing: Trends and Future Directions

Organized by: Efstathios Kefallonitis

State University of New York at Oswego, School of Business, United States

Description:

The symposium will reflect on the marketing trends and outlook of all transportation industry segments: Aviation and air carriers, rail, motor carriers, shipping and ocean liners, pedestrians and bicyclists, public transportation. Scope: To address, but not limited to, the following areas: Air transport marketing trends, rail and high-speed travel campaigns, air and rail partnerships, marketing cruises and sea travel, transportation and vacation marketing, medical transportation promotions, mobility marketing, transportation branding, passenger satisfaction, public transportation, environmental and sustainable transportation, transportation logistics, safety administration and transportation. Who Should Attend: Academics and business executives involved in the transportation field particularly in the areas of marketing, communications, media relations, advertising, planning, research, service development, and customer service.

Ambient Media in the View of the General Public and Their Relation to this Communication Form

Tomáš Šula and Milan Banyár

Abstract The chapter presents detailed results of a broadband research on the topic of the general public perception of the ambient media in the context of the communication efficiency carried out by means of a mobile platform in more than 70 countries. Commercial and non-commercial entities are forced to search for new opportunities when communicating to their target group and rights of the opportunities may be perceived as the use of the ambient media. In the chapter, the author concludes from the responses of the respondents and demonstrates the value of the ambient media use as well as shows the opportunity for enhancing competitiveness of companies/brands or products by means of the ambient media.

Keywords Ambient media · Out-of-home advertising · Innovative marketing and communications · Global research

Introduction of the Issue and the Problem Solved

Ambient marketing (the media—author's note) represents an alternative advertisement medium, usually indoor or outdoor in nature, which differs from traditional campaigns with their originality, usage of other than standard formats or sizes, as well as with their occurrence in unusual, unconventional places. The aim of the study is to verify the positive perception of the recipients and the efficiency on the conversion from the customer's point of view of the basic recipient preferences on perceiving the ambient media or its installments.

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What Literature Says and the Current State of Things

The traditional literature does not comment the ambient media very often, the first mentions, which are often not official, appear at the end of 1990s in England. If we search for official definitions and unified classifications of the ambient media, Jay Conrad Levinson is often referred to and who regards the ambient media as guerilla marketing and says that: “Unconventional marketing campaign whose aim is to reach the maximum effect with the minimum sources.” (Levinson 2005) or Keswani and Ghatawat: advertisements focus on the use of unconventional media or tactics (Keswani and Ghatawat 2010). There is no definition of the ambient media, these are often understood as put for instance by Přikrylová and Jahodová: “The ambient media. They represent unconventional ways of how to get to the centre of consumers’ attention. It is very often untraditional advertising media such as e.g. virtual postcards, shopping cart handles, checkout conveyor belts in shopping centres, seats or escalators in subways, as well as unusual advertising methods using a temporary and variable effect (laser projected logo on a world-known building or landscape places, using the well-known fragrance in theatres and shopping centres)” (Přikrylová and Jahodová 2010). As given above, they are thus most often generally perceived as “untraditional, unusual, new, etc.” The authors agree in the frame of one study in the statement that the ambient media belong to the category of “out-of-home” advertising media. Exceptionally an opinion may appear that they are outdoor media, however, this is a mere exception when outdoor is confused with out-of-home media (outdoor media are one component of the out-of-home media). The ambient media are characterized as 4 Is: Innovation, Intelligence, Interest, Intimation (Keswani and Ghatawat 2010).

Globally we speak of an innovative, effective, and strikingly imaginative realization of a commercial as well as non-commercial character evoking a so called “Wow” effect (Štarchoň 2009). Likewise an ambient medium is constructed so that the message it carries is presented in an intelligent form with the assumption that the recipient of the message understands it and is “drawn into” the events. As well as the consequent curiosity and further interest in the brand, product, or service which are being communicated by means of an ambient medium. The ambient media are not a frequent subject of researches, whereas they may become a rather effective channel for commercial as well as non-commercial communication. This may be proved by the research from 2006 carried out by Daniela Krautsack (founder of Cows in Jackets) for the ESOMAR organisation. She says that: Using new forms of media allows the creation of a relationship and emotional interaction with the consumer. And adds that “Consumers like the way and well-placed creative campaign improves their urban environment” (Krautsack and Aust 2006), which fully corresponds to the use of the ambient media. The research conducted in 20 towns and cities worldwide in the form of conducted street interviews and expert interviews by city shows that it is ideal to form simple messages directly linked to the product or brand that would have amusing/witty overlap and its aim is to become competitive in the given environment. The research showed that it is better

to bring the recipient to interaction with the brand or product and thus restrict mere “bothering” the recipients with traditional messages, and on the other hand to involve them into active interaction and into positive perception of the brand in communication.

Research

In May 2014, a worldwide research was conducted aimed at the general public perception of the ambient media in order to determine attitudes and perceptions of the ambient media in commercial and non-commercial marketing communication environments and their relations to the traditional media. The objective of the research from the respondents’ point of view involves as wide the range of recipients from various geographic, psychographic, sociographic groups as possible so that the resulting spectrum of opinions contains as wide representation as possible. The research was preceded by a pre-test showing potential discrepancies in the interpretation of the questions in English. A method of back translation was used in the pre-test and the relevancy of questions was confirmed in the research.

Objectives and Methods

The primary objective was to determine the awareness of the ambient media, its general perception, perception of products/services/brands which use the ambient media and the impact of such usage on the image and sales conversion, the comparison with the traditional media and finally own opinions and attitudes. An important part of the research were findings on the naming of the ambient media and the overall knowledge of such naming among the wide target group. Quantitative research was used in the form of a traditional questionnaire with closed questions with scalable answers, primarily expressing the level of agreement or disagreement. Marginally, an open question was used, which, however, becomes problematic to evaluate from the perspective of the questionnaire evaluation. The given research was carried out by means of a mobile platform with the only condition for a participation in the research which was to own a smartphone and to install a questionnaire platform. This selection was required for the fact that at least the minimum purchasing power may be assumed in the recipients equipped in this manner. The estimated number of respondents was 2000–2500 and the respondents were motivated with a financial reward of \$0.1. The reason for remunerated interviewing was the fact that if the respondent answers with a countervalue for their responses (ideally financially as in this case), the responses become more relevant. 2501 responses were collected in total with the fact that after excluding outliers within the sample, 2394 respondents and their answers were used for the research.

Statistical Methods

In the course of evaluating the research, several statistical methods were used based on which the research results were obtained. The principal method was a chi-quadrat and its division according to probability whereas the questionnaire research was set up so that the chi-quadrat could be used for all questions except for the open questions. The answers to the individual questions except for the open ones were recorded on a Likert scale of 1–5, or when recording an answer which the respondent could not respond to, the scale of 1–6.

The average value indicator was used for the evaluation as well as the variance for the summary statistics, namely the ordinal variance—dorvar, or a discrete ordinal variance with its complementary standardized form (NOR). Likewise, the modus as the most frequent value the respondents recorded for each question was used.

Although the sample of the respondents was rather large, for the reason of insufficient representation some above-standard measures had to be taken in certain categories; these being the Monte Carlo method simulation of the dependence test repeated for several times (particularly it was 500× consecutively). Visual material, which was created on the basis of principles of simplicity and clarity, was used in the questionnaire in the survey of ideological stances, whereas the essential element for the selection of visual material was the fact that the user unambiguously identifies the “principle” of the given ambient medium and the relation of the execution to the commercial message. Due to the method of questioning by means of mobile phones, the before-mentioned examples were presented within a visual collage (Fig. 1).

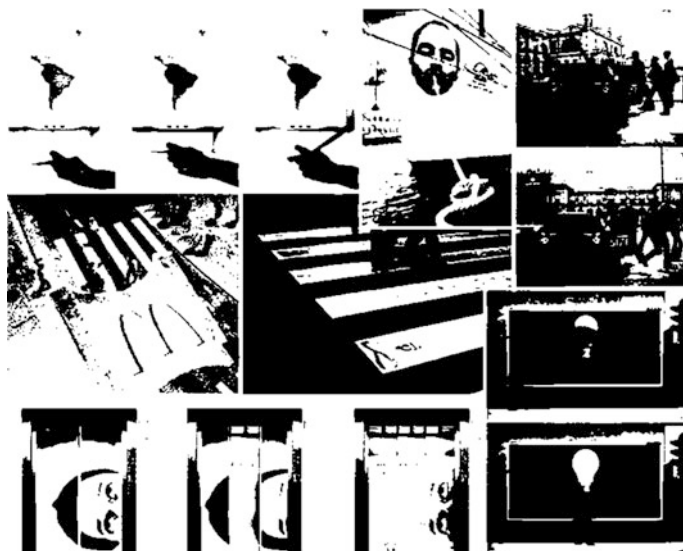


Fig. 1 Visual material for research

Partial Results

Knowledge of ambient media: Based on the results of the data collected in the test, the following was found (Table 1).

The table above shows the relationships between the demographic, geographic and socioeconomic indicators in relation to the investigated questions. Furthermore, the indicator of “brandness” is added indicating in what extent the respondents incline to purchase branded products. The parameters in which the dependence is not confirmed are marked in green and thus the indicator is not important. Overall, the survey results in the fact that age does not have any impact on whether the users had known or had not known the term of the ambient media before they participated in the questionnaire survey (q.1), likewise it does not affect the content of the communicated message and its visual processing (q.8, q.9), as well as no dependence demonstrated in relation to the fact whether they have ever seen any ambient media in the real life. Furthermore, the dependence is manifested in the relation of the annual income and the wish to see ambient media more often, as well as it manifested in the case of appreciation of the creative approach while creating the ambient media (q.2, q.3). However, in most surveyed areas the aspect of incomes (q.2, q.3, q.7—15) manifests. Furthermore, it can be said that the general public perception of the uniqueness and memorability of the traditional mediatype—television, depends on gender. (q.12, q.14). The dependence of mediatype may be

Table 1 The overall overview of dependences of the surveyed areas to the demographic, geographic, and socioeconomic indicators and to the relation to branded products

	Continent	Gender	Age	Income	Brand (Q.5)
q.1	2.2E-16	2.457E-10	0.2076	0.03526	4.988E-10
q.2	0.0002	0.007833	0.0016	0.08078	2.944E-12
q.3	0.0124	0.00006898	0.0003999	0.5843	0.000001203
q.4	0.0002	0.00009645	0.0014	0.007399	2.2E-16
q.5	5.424E-11	1.231E-12	0.001343	0.02237	
q.6	0.001816	0.000008999	0.02619	0.008598	2.2E-16
q.7	5.189E-07	0.00004534	0.005999	0.6842	2.2E-16
q.8	0.002599	0.0002218	0.08898	0.07179	4.594E-11
q.9	0.0024	0.0002395	0.3657	0.5757	0.000005236
q.10	0.000004354	0.001214	0.0003999	0.06299	2.2E-16
q.11	0.03166	0.008039	0.0002	0.07958	2.2E-16
q.12	0.00608	0.1441	0.04579	0.1994	2.2E-16
q.13	0.0016	0.004076	0.008198	0.5727	0.000001267
q.14	0.2685	0.8064	0.0007998	0.1383	2.2E-16
q.15	0.000005492	0.00005868	0.1584	0.1065	0.02457

observed also by the geographic distribution of the respondents. In all surveyed areas, the dependence of the relation to branded products and services was ascertained.

Discussion

The recipients and the overloaded message build in an individual a clear blockade for receiving and accepting the message from the traditional media. And even though the traditional media are still more or less effective, in the future it will be necessary to use nonstandard media carriers. The pioneer of this philosophy may be the electronic media, particularly the Internet and the Internet marketing where the variability of the media or the carrier formats is extraordinarily large and functional. Unfortunately, in the case of offline tools and especially the ambient media, it is troublesome to ensure the variability and this actually for several reasons. Primarily we talk about the fact that the contractors are not used to invest into the ambient installments, brands are not experienced in this field, and neither are some of advertising agencies; furthermore there are problems with the production of the ambient media as the production is often financially demanding and may be unfeasible at the same time.

Conclusion

Based on the conducted research, a positive relation of the recipients to the ambient media was confirmed as well as their usage in the marketing communications system. At the same time it was proved that across cultures, the opinions are similar and the overall perception may be generalized except for the annual income aspect where the amount of financial incomes affects the opinion moods.

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Generation Y Marketing—The Path to Achievement of Successful Marketing Results Among the Young Generation

Viliam Lendel, Eva Siantová, Anna Závodská and Veronika Šramová

Abstract Nowadays, there are discussions about crisis which the entire advertising sector is experiencing due to upcoming new trends in marketing communication in which there are new forms and means of communication constantly arising, whose charm and efficiency has been decreasing due to their mass use. Another problem is the gradual generation change, respectively, emergence of generation Y. Companies that want to reach this group of potential customers by their marketing activities have to find other ways than traditional advertising. Young people are growing up in the digital culture, which is characterized by rapid change of information technology. They are not limited only by the possibilities of their workplace but they are discovering new ones through social networks in the online environment and they are creating communities. These are the main features of the environment in which the generation Y is developing and operating. These all explains why it is now important to talk about *generation Y marketing*. Based on detailed analysis of the literary sources and results of conducted research the aim of this paper is to develop a model of effective implementation of the generation Y marketing in a company. To solve the problem of unfavourable marketing results among the generation Y there was proposed detailed process for effective use of generation Y marketing in company. The recommendations for successful reaching of young generation by marketing manager of the company were described. Areas of potential problems on which marketing managers must focus to achieve effective marketing communication of their company were pointed out.

Keywords Generation Y marketing · Generation Y · Research · Marketing communication

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Introduction

Young people are growing up in the digital culture, which is characterized by information technology. Daily they are surrounded by the current and latest technology and inventions. They can carry out their work at any place by using Internet in their laptops or mobile phones. They are not limited by their workplace. For members of this generation, price is not a problem. Generation Y is employing social media and information and communication technologies to a higher degree than other generations which also applies in different sectors (Kavoura and Stavrianeas 2015). Marketers and human resource managers are therefore looking for new ways as how to attract the youngest generation.

Based on detailed analysis of the literary sources and results of conducted research the aim of this paper is to develop a model of effective implementation of the generation Y marketing in a company. To solve problems of conducted research different methods were used: content analysis—the study of documents, synthesis, comparative analysis, process analysis, statistical analysis, modelling, programming, empirical research methods and others. Elaborated draft of the process for efficient use of generation Y marketing in the company can be considered as the main finding and result. The approach of the generation Y to marketing and management was mapped while solving the research problem (authors conducted empirical research on a sample of 479 respondents). Recommendations for successful reaching of young generation by marketing manager of the company can be considered as valuable result of this paper. The authors also pointed out areas of potential problems on which marketing managers have to focus to achieve effective marketing communication.

Generation Y Marketing

The term *generation Y* was originally used in the USA and relates to consumer behaviour and lifestyle of the generation entering the labour market (Múčka 2007). The term *generation Y marketing* describes techniques that are used to build and promote product brands among the group of consumers usually born between 1977 and 1995. Generation Y is also described as echo boomers, net generation, web generation, or millennium generation. People belonging to this group are primarily characterized by their positive attitude towards information technology and Internet which provides them a lot of information about products and services. Another interesting feature of the generation Y is a sense of practicality (Lendel and Kubina 2009) due to the fact that most of the young people has been raised in families with only one parent, so they acquired the ability to manage money. Generation Y is characterized by these features (Múčka 2007): they are born between 1977 and 1995, they do not believe in traditional means of advertising in traditional media, they are processing much more information than Generation X, they postpone

marriages and have high expectations of life, they like services, information technology, financial services, they rely on themselves, they are ambitious, self-confident and independent, they are competitive and eager for success, they like new challenges and hate stereotypes, they are losing brand loyalty and loyalty to employers, they take their career advancement and rapid wage growth for granted, they require more free time and flexible working hours, they have higher self-esteem, they see their future optimistic and they quickly get into debt, their lifestyle is about networking and creating communities.

Generation Y with its characteristics is significantly different from previous generations. Young people strive for success. They are ambitious and know that social institutions will not take care of their future. Key factors of success are education, appearance, financial proficiency and knowledge of information technology (Zelnik 1999). These characteristics make them outstanding and interesting for advertising and personnel market.

To be able to attract generation Y by manufacturers they have to increase their interest and present their job vacancy as an opportunity for a stable and financially attractive career (Lendel 2009). Only this way companies can attract young people who meet their requirements.

Employee belonging to the generation Y can be characterized as strong and flexible personality with skills of team problem solving, with strong technological expertise and ability to process tasks on multiple levels (Generation Y is changing the appearance of production 2007).

Generation Y has grown up in the world of advertising and expensive brands. The result is a lack of trust in brand and advertising. They do not trust personalities, on contrary they are looking for a product with which they can identify and which will communicate towards external environment and express their status and feelings.

Results of the Empirical Research

The research was conducted from October 2014 to January 2015. Main objective of this research was to identify the view of generation Y on the marketing and management. The research included 479 respondents born from 1977 until 1995.

Research was aimed to identify forms of marketing communication that have largest and least impact on this generation. Forms of marketing communication with the largest impact are recommendations from friends within their communities (up 83.9 %), advertising on the Internet (51.6 %), advertising on TV (39.7 %), advertising on social networks (37 %), and guerilla marketing (26.1 %). Conversely, forms of marketing communication with the least impact are telephone advertising (85.4 %), teleshopping (73.9 %), personal sales (68.3 %), promotional material sent by post to the name (41.5 %) and delivering promotional materials into the postal boxes (40.3 %), advertising on TV (41.5 %), and advertising on the radio (39.9 %).

Respondents on a scale of 1 (unimportant) to 6 (extremely important) evaluate elements that should be fulfilled to achieve successful advertising. Very important is humorous story, professional design (focus on details), practical information, simplicity, interesting story, focus on the lifestyle, focus on the product design. Conversely, less important is the presentation of products through successful peers, presentation through personalities, and a lot of information.

Respondents had the opportunity to express the range, in which all kind of industry take account of the expectations and needs of Generation Y on a scale of 1 (non-applied) to 6 (fully implemented). According to the representatives of generation Y are their expectations and needs mainly applied in the automotive, textiles/ clothing, telecommunications (mobile telephones), IT industry and banking, marketing, and tourism. On the contrary, they feel that their expectations and needs are neglected in the area of education and training, health, public administration, construction, legal sector, furniture industry, and transport.

The research was also aimed to characteristics of generation Y on the basis of their expression with the offered statements. Representatives of the generation Y, rather than supervisors prefer coaches and mentors. They are used to that their ideas are not ignored. Generation Y valued human conversation and reject the directive management. They have high expectations on the work. They are not intending to work all life in one company, and they can only work on meaningful projects.

Ways to Successful Addressing Young Generation

Generation Y hears and sees advertisements from birth, therefore it is not possible to “fool” them at all. Advertising does not play a major role in deciding on the purchase of goods or services. Most of this generation make parodies to advertising and shares the view that what is advertised, it is the worst product (Vološčuková 2003).

Ads designed for generation Y, which aim to successfully reach this segment of customers, must meet the following characteristics: humorous story, practical information, clear information, emphasis on design, common building brand, and product is a communication resource, focus on lifestyle, good preparation of advertisements and focus on details.

Conversely, in an advertisement aimed to the generation Y do not work following marketing initiatives: presentation of products through celebrities, simplicity and rudeness, branding without involving generation Y.

Product design is the basis for attracting teenagers. For example, in mobile phone the design plays a special role. Young people use the mobile phone as a means of rapid communication, but it is also a fashion accessory and the thing that conveys social status (Vološčuková 2003). In addition an emphasis is on individual functions of the device.

Another sector that began to react flexibly to the needs and expectations of generation Y is the automotive industry. Young people often visit design centres

where they comment on the latest car models. Car manufacturers are well aware that their style and aesthetic criteria are in the fact quite different than style and criteria of parents. Information and communication technologies greatly affect their lives, so they would like to see that even in the car.

In the 2007 the company Hyundai Motor Co. introduced three completely new models. The leader is the Hyundai Veloster, sports coupe meeting the unique requirements of generation Y. The panoramic glass roof and other futuristic styling elements create the image of advanced technology. Orientation to generation Y is confirmed by words of Vice President of Hyundai for design Oh Suk-Geun: “With Veloster, we wanted to try something completely new. We are aware that generation Y, for which the model was designed as a priority area, looking for a radically different new products” (3 news on Hyundai Motor Show in Seoul 2007).

When creating the ad itself marketing agencies must take into account the fact that young people are able to verify everything in a very short time. Through the Internet, they can very quickly find all relevant information on products and services. As part of the community, in which they act, they can also quickly find someone with experiences with a product.

Unlike other generations, generation Y is characterized by different ways of processing the communication. Young generation is accustomed and loves graphics and video installation, sound compositions, light and sound effects, machine rhythms, etc. Image–sound–music. This is a key triangle for successful communication with the young generation.

Many marketing managers considered generation Y as children. The situation changes dramatically. Even the most famous clothing brands responded to this situation after they had started to lose their customers. Generation Y marketing is specific in that it is directly subordinate to the incoming generation. Marketing agencies and companies realize that this generation in the short term leaves school and begins to buy their first homes, cars, establish their accounts.

Currently the entire advertising sector focuses mainly on people of working age who have the money to spend. In recent years, the numbers of young people who love brands have rapidly increased. They have become a huge market force.

Fashion has become probably the fastest growing clothing sector in the world. Since 1995, specialty stores dedicated exclusively to youth have been occurring. In this industry it revolves annually \$70 billion. (Vološčuková 2003)

To reach successful marketing campaign it is necessary to cooperate on the side of young people and marketing managers. The snowboard ramps, clubs and music festivals are becoming suitable advertising spaces and surfaces.

Marketing strategy must be based on those groups of young people and take account of its characteristics and its lifestyle. Products must be interesting, practical and above all to be a trend. Producers have to deal with this reality and prepare for the fact that the product, which is currently a trend among young people, could be replaced by something new that increases the interest of teenagers any time.

The way to success is to understand the thinking of members of generation Y. As an example, an advertising of the chocolate Forte can be introduced. The company wanted to break into the territory in which the Czech producer of chocolate—

Študentská pečať had built a strong position. After several months it was found that the sale of the Czech product did not decrease, though Forte came to the same market share. Advertisement “This is meat”, which offended many people, awaken an interest in generation Y (Zelník 1999).

It is also necessary to realize that this generation does not form a homogenous group. Therefore, marketing professionals are forced to seek ways to address them as a group. The variation of groups is formed under the conditions of environment in which they grew up. As a useful marketing tool the Internet advertising shows to be. On the Internet, there is a two-way communication. The most commonly used communication between companies and customers (one-to-one), by individual offers and promotions, or between multiple companies and customers (many-to-many) using chat or discussion forums. In other media, this communication takes place only towards the recipient (one-to-many), so advertising on the Internet is becoming more interesting and more relevant not only to the generation Y but especially for companies.

Conclusion

In conclusion, despite the fact that in Slovakia young people usually belong to the generation Y, they sometimes make decision through other patterns (Zelník 1999). Marketing communications to generation Y is to mediate live and famous figures (best from the world of popular music or professional sports). They themselves are Unique Selling Proposition (USP), since they are the epitome of individual style and ideal generational style, combination of exclusivity and general availability. The product, which is supported, thereby gains status of generational symbol.

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Blueprinting an Event and Tourist Service Marketing Strategy: The Case of the SMF Greek Tourism Small-Scale Sport Event

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Abstract The research presented in this article is an attempt to define, through mapping, the important Supply-Demand Service(s) Contact-Points, and to discuss the development of a suitable Service Blueprint design system that could be applied to sport events and other relevant events. After a description of the relevant literature of Blueprint Analysis in Services, SBA, the paper presents an application of SBA to a real sporting event (the SMF in 2013). After the results of the SBA analysis the emphasis was given to the discussion and the practical applications or else the useful managerial applications from the use of SBA in Sport and other related events.

Keywords Service blueprinting · Service experience · Contact-points · Small-scale sport events

Introduction

Sport tourism appears to be a rising field, one form of special interest tourism having attracted particular attention (Gibson et al. 2003; Gibson 2003; Getz 2008), having “become the subject of an increasing level of both academic and government interest” (Deery et al. 2004) and “one of the fastest growing segments of the tourism industry” (Gibson 1998). Sporting occasions may attract domestic, regional and international tourists but it is not the sporting mega events but the less significant ones, those that are more likely to generate more tourism and economic development opportunities (Higham 1999, p. 87). Through their two-part study, Gibson et al. (2003) reason that small-scale events may hold “some untapped potential for tourism development in the communities hosting them” leading to more benefits for a community than mega events. Indeed, many scholars agree that small-scale sport events may be a helpful tool for building tourism sustainability in

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communities (Higham 1999; Skinner et al. 2008; Gibson et al. 2012). Besides, sport events may be a “chance to showcase a community” (Gibson 2003), “increase city revenue and community spirit, while increasing traveler’s awareness of the local community” (Gibson et al. 2003), “a useful tool for building social capital, fostering community development” (Skinner et al. 2008) and they “can provide people and groups with a sense of togetherness, belonging and support during interaction” (Schulenkorf 2012). However, while the studies over the mega or hallmark events are numerous and great emphasis is placed on them, the academic research regarding small-scale sport events tourism potential is little and scattered (Higham 1999; Gibson et al. 2003). This paper will examine the blueprinting of a small-scale sport event, the Sfindami Mountain Festival, SMF, a research based on a priori explorative study of the service activities/processes in the service environment. The primary purpose of the paper is to define the Important Service Quality episodes that can affect the quality level on the a priori explored and mapped important Supply-Demand “Service(s) Contact-Points”. Another object of this paper is to discuss ad hoc based on the development of a suitable Service Blueprint design system and also the related Service Quality problematic that can affect the final tourism service strategy of the Small-Scale Sport event.

Exploratory Case Study of a Real Sporting Event, the Sfindami Mountain Festival; SMF, in 2013

The SMF Sfindami Mountain Festival is a two day event organized every year during April at Sfindami, Pieria. In 2013, the event was held for the seventh year. The aim of the event is to offer athletes, runners and mountain bikers, children, parents and spectators, with a love of athletics and nature, an experience of this area. The organizer is SFENDAMOS, a company which has its basis in Sfindami. ***Sfindami village:*** Sfindami is a small community of Pieria, built at an altitude of 160 m. It is situated at the North of Greece, in the Pidna-Kolindros municipality. It is 25 km from Katerini, the capital city of Pieria and 40 km away from Olympus, the mountain of Gods. It has 935 inhabitants (2011 census). Agriculture such as tobacco, olives, and cereals is their main occupation and livestock, secondarily. ***SMF small-scale event:*** Sfindami Mountain Festival, SMF, was founded in 2007 when the first annual outdoor festivals were organized in the region by the organization committee SFENDAMOS A.M.K.E. (a local and non-profit company) at Prophet Elias’ hill. The festival is named by the Sfindamos tree that grows in the area. The product SMF includes a mixture of athletic, cultural, informative and entertainment services data. The capacity of the festival by maximum number of participants in sports is 600 people, around 300 runners and 300 mountain bikers. The festival is organized every spring and lasts for two days. ***Sports events:*** Two major sporting event activities are included. The mountain running route and the mountain biking route take place on the first and the second day, accordingly.

Cultural events: Demonstrations of local products along with traditions and musical events with local significance are included. *Informative events*: A series of athletic seminars, exhibitions of various sports products as well as cultural elements and area's traditions are held. *Entertainment events*: They involve virtuosity demonstration, events and competitions for the children, for families and for the elderly, and sportswear bazaar for the athletes (Vassiliadis 2014). **Design and method of the study**: Bitner et al. (2008) draw the conclusion that blueprint technique is "versatile and flexible" and can be used "in many different ways" (p. 10). The paper is an empirical analysis of Blueprint Analysis in Services (based on the aforementioned research) and its appliance to a real sporting event, the Sfindami Mountain Festival; SMF, in 2013. SMF was selected for research because it is a small-scale sport event being "operated within existing infrastructure and within the capacity thresholds of the host cities" (Higham 1999, p. 84). According to Gibson et al. (2012), such events may be "a viable form of sustainable tourism development" (p. 160) since they "promote a consistent flow of visitors, use existing facilities, and are of a size that is compatible with the host community" (p. 169). The technique employed here is based on the "five components of a typical service blueprint" (Bitner et al. 2008), on a priori explorative study of the service activities/processes in the service environment. Specifically, 10 different areas, which all together constitute the place where SMF was held were observed for their material elements, the activities of the guests, the visually and non-visually detectable activities related to the staff and the support processes. Bitner et al. (2008) underline that this blueprinting differs from other flowcharting approaches because the actions of the customer are central to the creation of the blueprint (p. 24), therefore, the researchers of SMF charted the clients' activities and a satisfaction questionnaire was used in order to find out the clients' opinions for the product characteristics that created satisfaction or dissatisfaction, the strengths and the weaknesses of the event and the visitors' proposals for any possible improvements as regards the procedures of the athletic event.

Findings

The study resulted in the identification of the Contact-Points of the SMF. These are 13 Service Supply-Demand Contact-Points that define a better approach for Service Quality Analysis and Design managerial approaches (Fig. 1).

The 7Ps framework as service design element: "Services have certain basic characteristics, which in turn have marketing implications" and the 7P marketing mix model is meant to "meet the marketing challenges posed by the characteristics of services" (Shanker 2002). Through the chart of the clients' activities, we set the appropriate strategies for the improvement of the provided services; services that concern both onstage and backstage services actions, using the 7Ps as service design elements. **Product**: The SMF itself is a totality of tangible and intangible elements. It is a brand existing through 2007, constantly evolving and becoming

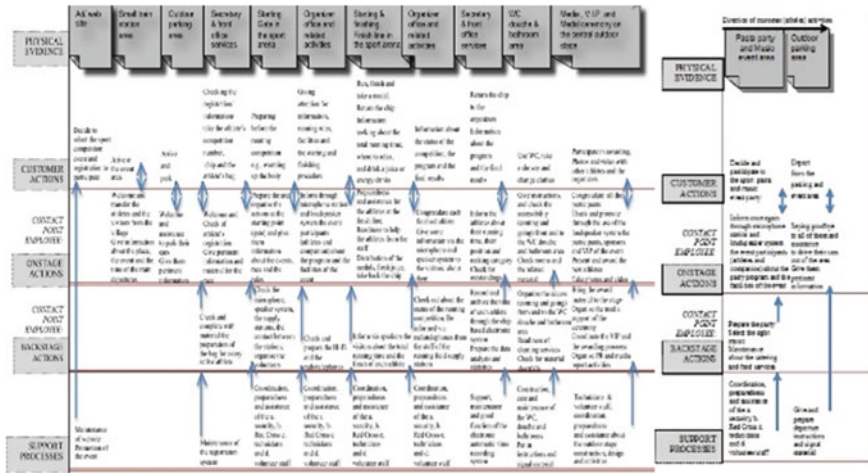


Fig. 1 Service Blueprinting Components of the SMF 2013 sport event. The segment of athletes; area of analysis the central place of the SMF 2013 basic sport event; are of analysis the central place of the SMF 2013 basic sport event; Day of the running competition: 20th April, 2013

known to the wide audience. During the event, many guests expressed their satisfaction concerning the service. On the other hand, there were several grievances due to some deficiencies. Its development could be achieved through a more efficient customer service and better customer support during the event. **Price:** Although no special points relating to the price were spotted, SMF could be further developed based on the number of clients that participate every year in a row. Several discounts or different payment terms could be applied to loyal customers who take part in every SMF or bring their friends for registration. **Place:** The location is easily accessible either by the local train or by car. There are several distribution options to experience the product SMF, such as the stage, the competition area or the exhibition area. The point is that SMF should remain the place where customers would be eager to travel the distance to receive its services, as it is for the time being. More frequent routes of the train, better organization of the parking space and cleanliness of all the spaces could be some movements towards a positive customer experience of SMF. **Promotion:** The promotion of SMF is made mainly by its official website, leaflets distribution, poster covering, social media and the word of mouth. The website could be amplified by SEO and the social media by sponsored advertisements. However, it is the generic word of mouth from satisfied customers that drives the brand (Moorthi 2002), therefore, the SMF should hold fast to the proper organization of the event, paying attention to service improvement. **People:** The human resources and the selective process of capable partners are the points on which the SMF organizer was based. More emphasis should be placed on volunteerism since they themselves are part of the SMF image. The organizers should recognize who their people are and which their skills are, to reinforce their role, to inspire them and to highlight the importance of the punctuality and of their

role for the success of the event both before and during SMF. **Processes:** The role of the staff and the volunteers at some cases should be better clarified by the organizers. The majority of the processes problems occurred when there was overcrowding, that is in the secretariat, the leisure area, the parking, the bathroom and the competition area. A larger space for the secretariat, a more efficient numeration of the material in accordance with the registrants, investment on online services, the settlement of the stands before the beginning of the event and a better organization of the parking and the bathroom are important elements to which should be paid heed to better organize the SMF processes. Besides, a better control of the electronic recording along with e-information and technology can help the sport tourists to be just in time informed in their smart mobile services. **Physical Evidence:** Some facilities could be better organized in order to serve the customers more efficiently and reassure them about SMF. The webpage, the brochures, the material in the bathroom and the athlete's bag are some examples of which the organizers should take more care. Local delicacies and local products gathered positive remarks therefore emphasis could be given to their advancement.

Discussion and Conclusion

The blueprints in this case may become a valuable tool for SMF managers and other relative event managers in that they may provide them with potential they had not realized before. Through the blueprinting process and the chart of the clients' activities, the event managers are able during the planning process and the prioritization of the marketing mix actions (7p's proposals) to focus more on customers' needs and to identify some new paths for future innovations with the scope to understand the significant role of the volunteers, and generally, to set new service practices standards. More emphasis should be given in future to the improvement of the providing services so as the event becomes better year in year out. In our case, the more effective function of the secretariat, the signage, valid and timely results, a proper preparation and coordination of the volunteers, a better organization of the exhibition area, the frequency of the routes of the train, the cleanliness of the area, parking infrastructure, malfunctions and shortages at the healthcare space are some weaknesses that could be earlier faced. On the other hand, based on the positive comments relating to the service on the stand, the local food, the music event and the beautiful route from the village to the event area, we realize that the management of SMF event and other relative events should emphasize on points like the aforementioned. This paper describes in detail the customers' (athletes) activities at a practical level and may act as a useful design tool for the blueprint of services in a small-scale sport event. The resulting information from the data analysis of the research may lead to the improvement, design and implementation of the provided services using the 7Ps (Product, Price, Place, Promotion, Processes, Physical

Evidence, and People) as service design elements. It may also lead to the new services design and to the confrontation of possible weaknesses that were noticed during the organization as well as to the execution of the procedures as a useful data basis for future service staff and skill development. Few studies regarding small-scale events and few applications on the level of sport event tourism are generally noticed. Therefore, we recommend that more future research be conducted so as to be able to use more advanced blueprint approaches that can enforce and improve the marketing planning process, like the customer driven processes of understanding better the product characteristics of small-scale events, which may cause pleasure or dissatisfaction to the clients.

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The Role of Gender in the Construction of Self Through Fashion Brands

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Abstract The relation between consumption and identity continues to be an important field in marketing literature. In recent years, because of its symbolic features postmodern consumer culture has been integrated with consumption and products used. Consumers do not buy products only for their benefits but also for their symbolic features, therefore symbolic power in consumption must not be denied. In this context, constructing identity by consumed products and/or consumption processes and symbolic consumption are considered to be interrelated. The aim of this study is to help understanding the role of fashion brands in construction of the identity of the adults. In this study it is analyzed how people construct their social identity by fashion brands, especially in intragroup and non-group social environment, in accordance with Consumer Culture Theory. Focus group work has been selected for research method; focus group discussion has been made with female and male participants resident in Turkey—aged between 20 and 35. The results of the study showed that consumption of fashion brands have an important role in the construction of the identity of the adults. An important result among the outcomes of the research is the difference between men and women in terms of the construction of self through brands. The work reveals that some factors effective for women participants are not effective for men. In addition, the reasonably high level of expression of their self by fashion brands is among the results.

Keywords Identity construction · Social identity · Fashion brands · Postmodern consumer culture · Consumption · Self-brand congruence

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Introduction

The deep personal relations of today's postmodern consumers with brands provided a basis for brands' proximity to consumption (Power and Hauge 2008). The role of brands in modern societies shows a variety and symbolic resources play an important role especially in the construction of the social identity. Thus, the consumers' deciding between brands through their identity processes and the interactions between these became important in terms of forming the socio-economic processes of consumption. In our day, the role of consumption in the structuring of identity is on the increase (Ersoy 2014). Postmodern society is a society of the spectacle and consumers attempt to express themselves and to be a part of the spectacle. The definition of the consumer of our day may well include individuals constructing their meanings. Consumption is a discourse of today's society on itself or the way the society talks with itself. Yet, the complexified structure of the societal relations together with the effort of being a part of the society of spectacle and constructing a narration gradually create difficulties for the consumer (Binay 2010). Accordingly, the postmodern consumer is not evaluated in the present society solely as a consumer but she/he is considered as a product of his/her consumption choices and consumption patterns (Firat 1991). Therefore, individuals chose "not only products and brands but their life styles and identities" (Perez et al. 2010).

Theoretical Framework

The present work bases on the Consumer Culture Theory (CCT). According to this theory, identity is approached as a concept both constructed by the personal discourses of consumers and both influenced by the societal factors (Shankar et al. 2001). At this point, the CCT offers an important infrastructure for the present work. The basic assumption of the theory is that it does not evaluate the culture as a system of values and meanings shared by all the individuals in a society (Askegaard and Linnet 2011; Hokkanen 2014).

By this way, consumption can be approached as a vehicle of belonging to the desired groups and being noticed by the members of that particular group as well as isolation from undesired groups (Sabah 2013). In this way it is expressed that due to the symbolic meanings of the products, consumers using and buying them enhance their self and that self can be a capsule composed of symbols and through the consumption rituals the symbolic meanings of the consumed products are

transferred to the self. Escalas and Bettman (2003) by creating a bond between self and brand, claim that consumers use products and brands to create an image of the self or to present this image to others, because for a consumer social groups are important, the individual compares himself/herself with others and the accordance between the self and the brand becomes effective in the group as well. Kleine et al. expresses that individuals can also develop a social identity through the products they possess. Fournier (1998) reveals that some individuals use brands in a classification related with “who they are”. Therefore individuals are engaged in consuming activities those support their representations and selves in the society. In our day, not products but meanings are consumed (Odabaşı 1999).

The products purchased by consumers can function as a vehicle enabling the manifestation of their identities. Escalas (2004) states that in case of the use of meanings inherent in brands in the construction of consumers’ selves and in case of their use in communication with others, there is to be a strong bond between the brand and the consumers’ definition of their self. The construction of a strong and meaningful self–brand relation would come true depending on the bond between the personal experiences of consumers with the image of the brand and brand’s satisfying a psychological need.

Methodology

For this research focus group interview was applied due to its accordance with the subject. In the interviews and focus group meetings the collected data was analyzed through “taking notes”, “information form” and “recorder”. In the focus group data analysis the “depictive summary” data analysis by Krueger (1994) was selected as a guide (Tables 1 and 2). Utilizing this categorization, the subjects which are most concentrated on the participants in the interviews and focus group activities aimed to be analyzed according to the “frequency of words and sentences.” In the selection of the participants, purposive sampling approach was used. In the end of the process, focus group was realized with eight people and to collect data during the process of discussion semi-structured interview method was used. The participants were from the age group 25–35. Eight of the participants were women and four of them were men. To be able to ease comparison, two different summary tables were used according to the gender of the participants. Letters, instead of actual names of participants, were used. The meetings were recorded depending on the assurance of confidentiality given by the moderator who also did the deciphering of the records (Kavoura and Tomaras 2014).

Table 1 Summary table of female participators

Codes of participators	Sub category	Opinion (direct quotations)	Focal points (according to the frequency of sentence-word)
A (Female, 22 Age)	(Self/consumption) SCI *Differences between brands preferred during childhood and the time of the present self SC3 *Which one from your actual and ideal self becomes influential in your clothing choices?	<p>"I use some of the fashion brands to be different from the people outside of the group."</p> <p>"I make my clothing choices thinking how I want to be and how I want to be seen and evaluated by other people"</p> <p>"I either dress like myself or as required according to the occasion... So in some occasions I cannot dress like myself even if I want to." "Looking at my childhood photos I see that my present situation and choices differed a lot... I think I am not under the influence of my childhood identity" "I remember I was affected very much from the style of my best friend in my adolescence"</p> <p>"To differentiate from my friends I prefer Top Shop which I think to have a different style" "My clothing choices are more like who I dream of to be rather than who I am."</p>	<ul style="list-style-type: none"> * Being different * Actual self * Ideal self * Childhood adolescence
B (Female, 25 Age)	(Self/consumption) SC3 *Which one from your actual and ideal self becomes influential in your clothing choices?	<p>"when my family meets with the family of my friends the fact that the mothers especially talk about similar brands seems like the signifier of economic equality and similarity" "at certain times certain brands hit the headlines and everybody have them, but there is a saying I heard from my family " the ones having their clothes sewn by the tailor are rich families" once sewing was the costly way now the changes in the ready wear changed this perception." "in your childhood you are influenced from your family in a way in your brand choice, for example I wanted to buy a certain brand of jeans, everyone had that jeans in the class but my family bought me not that brand but a brand unknown to my circle and so everyone made fun with me ..."</p>	<ul style="list-style-type: none"> * Being different * Actual self * Ideal self
C (Female, 31 Age)	(Social identity/consumption) SIC3 *Do you talk about similar brands? SIC4 *From whom you are influenced in your choices of brands?		<ul style="list-style-type: none"> * Family * Intragroup similarity * Friends * Socialization

(continued)

Table 1 (continued)

Codes of participants	Sub category	Opinion (direct quotations)	Focal points (according to the frequency of sentence-word)
E (Female, 26 Age)	(Fashion brands/self-construction) FBSCI *Define the users of these brands?	"When I see someone wearing Zara I find her style very feminine and classic ... I even evaluate her as a business woman, a serious woman in her daily life, someone who doesn't have much free time." "It is not a brand which is ideal for me" "I think Chanel is ideal of everyone It is different and special" "I think for H&M that women having a bohemian style wear it and of course its products are cheaper in comparison with others"	* Ideal self * Comparison * Uniqueness * Self-construction
F (Female, 27 Age)	(Fashion brands/ self-construction) FBSCI *Define the users of these brands?	"you wear the image... "clothing is the visual state of the messages you give or want to give to the others" "instead of envy the brands that I can never possess I bring myself into existence within the bounds of possibility"	* Actual self * Communication * Envy * Self-construction
G (Female, 32 Age)	(Self/consumption) SC2 *Do possessions have involuntary loss or damage? If yes how do you feel?	"I was desperate since its being special design destroys the possibility of replacing it, I felt the same thing for that accessories what I would feel when a part of my body bleeds or becomes broken" "what made me feel that sorry was of course because this accessories could not be found in anyone else"	* Extended self * Possession * Self destruction
G (Female, 32 Age)	(Fashion brands/self-construction) FBSCI *Define the users of these brands?	"I may envy someone who has possessions from the brand Chanel ..." I compare with myself" "What matters is that you know what you possess cannot belong to many other people." "Giving the image of quality to other eyes..."	* Ideal self * Comparison * Envy * Uniqueness
H (Female, 30 Age)	(Social identity/consumption) SIC2 *Is your clothing similar to that of your friends? SIC3 *Do you talk about similar brands? SIC4 *From whom you are influenced in your choices of brands?	"generally our clothing is similar with my friends, I think we have the same tastes" "the brands we talk are similar, that is why we are not that similar" "we like similar things with our common friends in the social media ..." we are friends since we share common idea about these subjects" "I believe I was influenced mostly from my family in my choice of brands, this may be related with my younger sibling and that I was jealous of my younger sibling"	*Family *Intragroup similarity *Friends *Socialization

Table 2 Summary table of male participants

Codes of participants	Sub category	Opinion (direct quotations)	Focal points (according to the frequency of sentence-word)
I (Male, 34 Age)	(Self/consumption) SC1 *Differences between brands preferred during childhood and the time of the present self SC3 *Which one from your actual and ideal self becomes influential in your clothing choices?	"During childhood the choices of male children are mostly directed by mothers, in fact they dress their male children in the way they want us to be seen. Of course I have different choices than my childhood but the impact of mother still continues." "During my adolescence I was absolutely impressed by my group friends, we usually had similar styles and brands" "I prefer fashion brands according to the image they represent rather than being different, so I prefer brands suitable for my image"	* Family * Childhood and adolescence * Self-brand congruence * Ideal self
I (Male, 34 Age)	SC2 *Do possessions have involuntary loss or damage? If s how do you feel?	"Of course! We live the damage of cleaning obsession of mothers at most. During your adolescence your favorite t-shirt gets stained by bleach or your ripped jeans gets carefully sewn, so your mother signs somehow the image you want to create. This is such a sign that it does not resemble any brand image and you got ashamed in front of your friends"	* Extended self * Possession * Selfdestruction
J (Male, 25 Age)	(Self/consumption) SC3 *Which one from your actual and ideal self becomes influential in your clothing choices?	"I don't make choices feeling the necessity of being different than my friends, I make choices entirely according to what I want" "my dressing choices are more life how I want to be seen rather than wo I am."	* Ideal self
J (Male, 25 Age)	SC2 *Do possessions have involuntary loss or damage? If yes how do you feel?	"I think, contrary to the common thought, we live a different mood than women in case of damage or loss of items we possess, mend tend to think that items have soul and they are part of themselves. They collect memories as if the items they possess were their significant others accompanying them, at least I feel this way. My feeling for my worn out sneakers was as if I put all my sharings in my childhood years aside."	* Extended self * Possession * Selfdestruction
I (Male, 34 Age)	(Fashion brands/self-construction) FBSC1 *Define the users of these brands?	"I wanted to have dresses from the brand Timberland. I always thought it is different and special. I don't know so many people around me who wear this brand. If I see a man dressing this brand from head to toe it means power to me and nothing else. I think he has the power to buy it"	* Ideal self * Financial power (wealth) * Self-construction

(continued)

Table 2 (continued)

Codes of participants	Sub category	Opinion (direct quotations)	Focal points (according to the frequency of sentence-word)
J (Male, 25 Age)	(Fashion brands/self-construction) FBSC1 *Define the users of these brands?	"I'd like to be a Tommy Hilfiger man... Sportive, high-toned, wealthy..." I think clothing is directly proportional for men with the financial power, this is not only valid for clothing, it is also the same for the car brands, I believe it bases on power related with gender."	<ul style="list-style-type: none"> * Ideal self * Financial * Power (wealth) * Self-construction
K (Male, 33 Age)	(Self/consumption) SC2 *Do possessions have involuntary loss or damage? If yes how do you feel?	"There was a watch belonging to my father, I took it when I lost my father, of course it wasn't a product I bought spending money but besides it belonged to my father it was also a very valuable and special brand, when I was wearing that watch I was feeling as if I was becoming my father, as if our identities were replacing each other, I felt that I lost my father not in my actual loss but when his watch got broken."	<ul style="list-style-type: none"> * Extended self * Possession * Self destruction
K (Male, 33 Age)	(Social identity/consumption) SIC4 *From whom you are influenced in your choices of brands?	"I was absolutely impressed from my father in my choice of brands, like a family culture, tradition, like our family's man... wear watches... wear suits from valuable brands..."	<ul style="list-style-type: none"> * Family * Intragroup similarity
L (Male, 28 Age)	(Self/consumption) SC2 *Do possessions have involuntary loss or damage? If yes how do you feel?	"I think for every kid sneakers from famous brands are important but if you achieve them much more later than your friends due to financial in capabilities like me it becomes much more important. It may be because I achieved them later but I still don't use any other sneakers than that brand."	<ul style="list-style-type: none"> * Extended self * Possession
L (Male, 28 Age)	(Fashion brands/self-construction) FBSC1 *Define the users of these brands?	"I think all these brands are related with financial power, if you don't have the power to buy them you try to create a style for yourself from different brands but when you use those brands you already wear the image of those brands. So if you say to me assume that you have financial power and match one of these brands with yourself, I would find the brand Tommy Hilfiger congruent with myself"	<ul style="list-style-type: none"> * Ideal self * Comparison * Self-brand congruence

Findings and Discussion

In the discussion, the role of the fashion brands in the construction of self was emphasized primarily. Therefore, it can be said that the fashion brands are in a central position in the construction of an ideal self as well as an actual and social self. This data explains the role of possessions defined by Belk (1988) in the construction of self. Both the stories can be explained by the claim of destruction of self by Belk (1988) related with the involuntary losses of possessions. Another fact seen in narrations is that after these losses in the past, individuals were directed to similar fashion brands and that there are traces of brand loyalty. The second part focuses on how participators define their selves through consumption in the group. The expressions overlapping with the influence of family members of participators and friends take place in this part. Belk (1988) claims that individuals define, learn, and remember who they are through possessions. During the process of socialization, individuals may attach and add deep, different meanings to brands. In Table 2, the summary of the interviews done with male participants takes place. According to this, the role of families and parents in the construction of self for man has been emphasized much more when compared with that of women. Similarly, showing a major difference from women's cases, the sense of jealousy does not take much place in the expressions of men. The issue of self-brand congruence took more emphasis from men which create a difference from the case of women. In the part of the research related with the involuntary loss, men highly differ again from women. While men experience the feeling of losing all their life experience together with the involuntary loss or damage of their products; women experience a destruction of the self with the material loss of their possessions.

That the participators use fashion brands as showcases of their identity and self and that their symbolic meanings are very important in the construction of the ideal self are among the conclusions of his work. Fashion brands are central to the entrance to intra-groups and outer groups and these brands categorize the members. This categorization helps marketers to define their target consumers right. By this way, marketers will be able to strengthen the belonging of certain groups and communicate with social identities to control the brand. The works in the future can obtain different results by using a different qualitative method.

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Bologna Efforts to Promote Skills and Competences in Higher Education and the Greek Context

Sofia Asonitou and Harris Tromaridis

Abstract The words “skills” and “competences” have appeared intensely in the academic life of the European Higher Education Institutions (HEIs) as in other parts of the world in the past decades. The present study reviews the endorsement of skills and competences under the EU and the Bologna Agreement and attends their evolution through the steering documents that aim to achieve the integration of European Higher Education (HE) systems as well as the enhancement of European graduates’ employability.

Keywords Higher education · Skills · Competences · Bologna process · Steering documents

Introduction

As technology has progressed in recent decades, society and working conditions have been transformed. Manufacturing has given more space to service industries and white-collar workers outnumber blue-collar workers (Bell 1974; Hammer 1996; Herbert and Rothwell 2005). Above all, power is no longer derived from property and position but from knowledge, particularly theoretical knowledge. Globalisation has intensified the international competition and the pace that work processes are changing (Keep 2000). Skilled jobs require “perceptual and conceptual skills” that need to be renewed if workers wish to remain employed. Knowledge and learning are the means to continuous upskilling and consequently the “learning force” is already greater than the “workforce” (Trist 1974; Frank and Meyer 2007). Employability is defined as the ability to gain initial meaningful employment or to maintain employment and to be able to move around within the labour market

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(Working Group on Employability 2009). Education is playing a crucial role as the means of attaining the required knowledge, skills and competences that will ensure people have more opportunities to become employed (ILO 2008). Employment prospects depend on additional factors than the possession of the required skills and competences. These factors are mainly the general state of the economy on the one hand and job candidates' individual characteristics (European Commission/EACEA/Eurydice 2014).

Increased attention to the development of certain skills may help to reduce drop-out rates in first-year students. Research reveals that drop-out rates are the highest at the end of the first academic year. First-year students are particularly vulnerable to dropping out of HE, since their expectations might be very different from what they actually expected from their studies or they may have a feeling of helplessness and failure at the start of HE studies. Hence, paying attention to newly admitted students' experiences and skills development is of particular importance (EHEA 2015).

Establishment of European Higher Education Area (EHEA), modernisation of education, mobility and integration of learning systems and quality assurance systems are among the means to promote the employability of European citizens and the international competitiveness of European HE. Bologna Process and EU work in parallel to introduce the concepts that lead to successful implementation and attend thoroughly the evolution of this endeavour through specific tools and steering documents like the ECTS, the European Qualifications Framework, the Diploma Supplement, Quality Assurance, the three-cycle system and the evaluation of learning outcomes.

EU and the Bologna Process

Higher Education (HE) has been in constant reform the past decades due to factors affecting the economic and social environment. In the U.S., the employers have initiated the reforms in higher education in order to keep pace with the changes in the economic environment and the development of graduate's skills and competences. In Europe the changes in Higher Education Institutions (HEIs) were initiated by the Bologna Agreement (1999) and the European Union. Their efforts resulted to the introduction of new concepts for HEIs such as the learning outcomes, the ECTS, the European Qualifications Framework (EQF) which have been gradually introduced into the Greek HE System in the past decade. All these new concepts aim, among other, to reform education away from its rule-driven textbook by incorporating skills and competences into the curriculum. European countries have been heavily influenced by the Bologna Declaration of 1999, which was based on the Sorbonne Declaration of the previous year (1998). In fact, it was the Bologna Agreement that sparked the large-scale educational reforms in Europe, as it states that universities should accept the challenge to construct the European Higher Education Area (EHEA 2015). By 2010, 47 countries were involved in the Bologna

Process. By 2015 nine Bologna conferences were held (including the Sorbonne Declaration) and corresponding communiqués have been issued to describe the achievements and the targets of participating nations for the future.

At the European level, two types of cooperation exist that work towards the development of Higher Education (HE) to achieve high employment and growth rates: the European Commission and the Bologna Process. The support of European governments and universities has been sought in order to meet the targets of the next decade. In 2010, the Lisbon strategy evolved into the EU Commission's 'Europe 2020' strategy. The scope of this report was to overcome some of the failings of the previous initiatives and reshape the objectives in the light of the economic crisis (Beerkens and Vossensteyn 2011). The Bologna Declaration of 1999 followed a series of meetings, working groups, seminars, conferences and reports within the European area in order to investigate and explore a range of objectives and promote the integration of the educational systems. The focus of these seminars and working groups included issues of comparability, quality assurance, accreditation, the credit transfer system, learning outcomes and the development of European students' skills and competences.

European Credit Transfer and Accumulation System (ECTS)

European Commission and the Bologna Working groups, over the past 15 years, have issued many reports in order to disseminate their objectives, recommendations, or the results of studies of employability and the skills regime of European countries and in relation to non-European nations (EC 2003; Vukasovic 2004; EU 2006, 2008; Tuning 2010). In several Bologna seminars (Bologna 2002, 2003), the credit system was discussed in depth. The Bologna seminar in Edinburgh on learning outcomes endorsed the proposition that learning outcomes are the basic building blocks of the Bologna package of educational reforms and that this methodological approach is *at the heart of the paradigm shift from teacher to student-centred learning* (Bologna 2008a). During the Bologna seminar on ECTS and student workload participants from European universities, student bodies, national ministries and international organisations, agreed that ECTS credits are based on learning outcomes and the appropriate workload that will allow students to achieve the expected learning outcomes (Bologna 2008b). The seminar emphasised the need for a cultural shift at all levels, concerted action by the authorities and stakeholders, the involvement of students in the verification of the workload and the regular monitoring of the whole process within the framework of an internal and external quality review.

Progress indicators so far indicate that regarding the first-cycle learning most countries use a combination of 180 ECTS and 240 ECTS. There is a slight trend of more countries to move away from a workload of 180 ECTS (European

Commission/EACEA/Eurydice 2012). Nevertheless, the 180 ECTS workload model is still the most widespread, with 58 % of programmes following it in comparison to the 37 % share of the 240 ECTS workload model. In the second cycle the 120 ECTS model is by far the most widespread used by 43 HE systems. On average, 65 % of all second cycle programmes follow the 120 ECTS model. 13 % of all second cycle programmes follow the 90 ECTS model (European Commission/EACEA/Eurydice 2015).

Learning Outcomes

The ECTS guide defines learning outcomes as: “A dynamic combination of cognitive and metacognitive skills, knowledge and understanding, interpersonal, intellectual and practical skills, ethical values and attitudes”. Two approaches exist: learning outcomes may be either threshold statements (showing the minimum requirements to obtain a pass), or reference points describing the typical (expected) level of successful learners’ achievement. In any case, statements on learning outcomes must clarify which definition is being used. The EU report (2007a) on NQF/EQF explicitly states that the Learning Outcomes approach is a fundamental part of a paradigm shift in the relationship between HE and the outside world. It emphasises that it is an approach that provides the basis of a dialogue between HE and employers, and also provides a tool, and a language, for accountability to the wider society. The implementation of the NQF and use of learning outcomes should not be presented as *‘yet another reform to be tackled’*. Providing academics with substantial information about the need for an NQF and a learning outcomes-based approach is needed to encourage commitment. The information should also include examples of good practice in other countries/sectors/HEIs, such as the Tuning project (Tuning 2010). This implies the need for the more structured dissemination/availability of information. In order to promote this, efforts on the part of the commission and the national competent bodies may be appropriate. For instance, the Bologna experts can play an important role in this (EU 2007b, p. 27). The Tuning project in Europe addressed the issue of skills and competences through research projects for subject specific areas such as business, chemistry, mathematics, history and geology. Over time Tuning has developed into a Process, an approach to (re-)designing, developing, implementing, evaluating and enhancing quality first, second and third cycle degree courses. 38 of all HE programmes use ECTS (majority). In the rest nine systems, ECTS use ranges between 75–99 % of programmes. These findings reveal that important improvement over the 30 and 7 countries respectively found in the corresponding groups in the previous report. From this point of view, ECTS implementation can therefore be considered close to final achievement.

Linking ECTS to Learning Outcomes

The ECTS is closely related to the learning outcomes and the associated workload which are intimately linked to the assessment and assessment criteria (European Commission/EACEA/Eurydice 2015). These issues are integral to the correct application of a credit system (ECTS 2015). Although quantitative data show that there is progress in applying ECTS for accumulation and transfer, the implementation of linking credits with learning outcomes is still lagging behind. Greece is among the countries that ECTS credits are allocated to all components of all HE programmes, enabling credit transfer and accumulation. ECTS credits are demonstrably linked with learning outcomes both through law and steering documents. Data shows that 22 higher educational systems have linked all parts of programmes to learning outcomes while another 19 estimate that 50–99 % of their institutions have done so (European Commission/EACEA/Eurydice 2015). The shift to a student-centred approach based on learning outcomes requires a consistent and transparent way to allocate ECTS credits on learning outcomes. There are occasions that HE systems assign ECTS to learning outcomes on the basis of teacher-students contact hours or on a combination of student workload and teacher–student contact hours. This is a mechanical calculation of ECTS and it is not compatible with the spirit of competence-based education. There is a group of seven systems that use this type of credits allocation.

The proper way is that credits are allocated on the basis of learning outcomes achieved and on student workload. Typically 36 HE systems follow this pattern. In Albania and Liechtenstein, credits are allocated on the basis of student workload only while in the U.K. achieving the student learning outcomes is the only criterion for credit allocation (European Commission/EACEA/Eurydice 2015).

European nations in order to support the implementation of learning outcomes have stipulated their establishment through legislation (32 HE systems) or through guidelines or recommendations (14 HE systems). Only in Albania and Hungary there is no central support of learning outcomes at all. Greece is among the countries that have issued the proper laws to encourage learning outcomes (Asonitou 2014). This shows that the importance of learning outcomes in programme development has grown within Bologna nations. European HE systems have already put in place quality assurance procedures for monitoring the use of learning outcomes and assessment of student achievements. In most countries there are external quality assurance agencies for programme accreditation/approval according to EU recommendations.

European Qualifications Framework (EQF)

The European Qualifications Framework (EQF) is an overarching framework that makes transparent the relationship between European national (and/or sectoral) educational frameworks of qualifications and the qualifications they contain. It is an articulation mechanism between national frameworks. Currently, two European Qualifications Frameworks exist. One focuses only on HE and was initiated as part of the Bologna Process, while the other focuses on the whole span of education and was initiated by the European Commission. The first is called a Framework for Qualifications for the European Higher Education Area (QF-EHEA), while the second extends across all areas, including HE, and is called the European Qualifications Frameworks for Lifelong Learning (EQF-LLL 2015; Tuning 2010). At least 16 countries have made substantial progress in the implementation of NQFs since the 2012 Implementation report. However, 10 countries still have not started implementation at programme and institution level, and some of them show no progress since 2012. Belgium, Denmark, Estonia, France, Germany, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Norway, Poland, Spain, Sweden, and the United Kingdom (Scotland) have fulfilled all the steps in implementation of qualifications frameworks and have the self-certification report that can be consulted on a public website. Austria, Croatia, Greece, Iceland, Lithuania and Portugal miss only the step of providing information on qualifications frameworks on a public website.

The Greek Context

Greece is one of the European countries which signed the Bologna Agreement in 1999. Consequently, education reform was initiated by the Government, which has been attempting, since that time, to introduce the necessary changes in order to harmonise the Greek education system with the Bologna requirements. The government has made substantive efforts to bring about change since 2003 and it continues to issue relevant laws and presidential decrees (FEK 2015). In July 2005, the Law on Quality Assurance in HE was passed, transferring credit points and Diploma supplements (L. 3374/2005). Greece has also completed the process for the National Qualification Framework (Zaheilas 2012; EOPPEP 2015). The process of harmonisation with the Bologna Requirements started in the previous decade in Greece, for which a series of laws have been introduced. Law 3191/FEK 258/A/2003 on the National Connection System of Vocational Education and Training with Employment and Law 3369/FEK 171/A/2005 on Lifelong Learning and Law 3549/FEK69/2007 prepared the frame for the introduction of laws on Quality Assurance and ECTS. Next important law is 3374/FEK189A/2005 which relates the Quality Assurance of HE, the establishment of ECTS and the diploma supplement. The Ministerial Decision in FEK 1466/2007 complemented this law,

which states that the European system of transfer and accumulation of credits is based *on the workload* that a student must complete in order to achieve the course objectives, according to the *learning outcomes, skills and competences required for successful course completion*. Law 4009/FEK195A/2011 is a very important Frame Law that abolished most of the previous laws and aimed to bring a new perspective to HE through reforming the institutions' management and the years of study, introducing skills and competences in HE courses, and laying down criteria for academic teachers' promotion and other important issues.

Other Tools Within EU Framework

Among the tools of EU devoted to the enhancement of mobility within European frontiers and skills specification is ESCO and DISCO initiatives. The objectives of ESCO (European Skills Competences and Occupations) is to enhance online and skill-based job matching, to promote skills and competences in the employment services and to describe qualifications in terms of knowledge, skills and competences. ESCO identifies and categorises skills/competences, qualifications and occupations relevant for the EU labour market and education and training, in 22 European languages. It provides occupational profiles showing which competences and qualifications are relevant for an occupation (ESCO 2015). DISCO is the European Dictionary of Skills and Competences. It is an online thesaurus that currently covers more than 104,000 skills and competence terms and approximately 36,000 example phrases. DISCO is available in eleven European languages and offers a peer-reviewed terminology for the classification, description and translation of skills and competences. It is compatible with European tools such as Europass, ESCO, EQF, and ECVET (European Credit system for Vocational Education and Training), and supports the international comparability of skills and competences in applications such as personal CVs and e-portfolios, job advertisements and matching, and qualification and learning outcome descriptions (DISCO 2015).

Conclusions

Recommendations of EU and Bologna communiqués are incorporated into national HE systems and their implementation is monitored through several indicators. Evidently, the national HE policies are becoming increasingly subject to European-level decisions. Although the concepts of skills and competences have been introduced in the HE systems of the participating countries in the Bologna Agreement through the notions of ECTS and learning outcomes, the pace of adoption varies among nations. The structural adoption of learning outcomes as core element towards student-centred education is easier to achieve than the actual incorporation of skills into everyday teaching and assessment. Due to rapid changes

in the economic environment, graduates often realise that they do not have the skills and competences they need for their professional take-off or for maintaining their job. Therefore policy-makers, academic staff and students should work together, to attain the goals of enriching skills and competences with the ultimate objective to increase employability of graduates as well as the continued development and sustainability of HE systems. Special attention should be given to the link of credits to learning outcomes in contrast to surface and mechanical calculations of ECTS for pure legitimising purposes.

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Core Skills as Marketing and Management Tools: Evidence from the Tourism Sector

Sofia Asonitou and Ourania Vitouladiti

Abstract Skills' development is considered as one of the most important drivers of productivity growth and competitiveness at the enterprise level. Employers, academics, and policymakers have recognized the importance of social and professional skills as valuable qualities for a successful career in all sectors of the economy. In Greece, the tourism sector is considered as a key factor for the development of the country and its economic progress. It is also assumed that the human factor in tourism, in the form of service personnel, is critical for the success of a business and conducive to the general favorable evaluation of a destination. The present study combined the skills' narrative with secondary research data analysis from the tourism sector, and quantified the influence of skills development on the evaluation of the destination and the vacation experience acquired. The findings bear important implications for marketing, management, and educational issues in tourism.

Keywords Core skills • Personnel • Tourism sector • Greece

Introduction

The last decades, nations and governments across the world have focused on improving the skills of workforce as a key strategy for improving national competitiveness. Education and training are linked to economic performance and

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therefore there is an increasing demand for a multiskilled and knowledgeable personnel (Finegold and Soskice 1998). The International Labour Office declares that skills development is fundamental to improving productivity (ILO 2008). Other factors that policymakers should develop in parallel to skills are an environment for sustainable enterprise development, social dialogue and investments in education, health, and infrastructure. The *virtuous circle* between productivity growth, raised income, and poverty decrease presupposes the adoption of a strategy focused on effective skills development system. An effective skill development system is one which connects education to enhanced employability and to sustainable productivity growth (ILO 2008).

In the effort to establish a skilful workforce and an effective education and training system stakeholders should not assume that the terms “skills,” “competencies,” and “skills development” are straight forward. On the contrary they bear with them ambiguities and controversies that add to the difficulties of their smooth growth (Keep and Payne 2004). The objectives of this paper are: (a) To present the theory of the skills’ issue underlying their evolution and importance for the tourism business environment and the development of the human resources (b) To use secondary data from the tourism sector in order to emphasize the influence of human resources skills on the overall evaluation of a tourism destination (c) To extract reliable results that offer practical implications for marketing, management and education, in tourism.

Theoretical Background

The meaning of “skill” has changed through the time span of the last decades (Keep and Payne 2004). Some scholars argue that skills mean just what each user wants them to mean (Oliver and Turton 1982). Over four decades ago skill was connected mainly to the physical dexterity and technical “know-how” of the manual craft worker (Keep and Mayhew 1999). In the more recent years, these terms have much broader application and a rich vocabulary appeared to describe their nature and content which is used interchangeably in many occasions, i.e., generic skills, core, key, transferable, horizontal, social, professional, reasoning skills, problem solving, personal, and interpersonal skills that may include motivation, discipline, leadership, teamwork, initiative, ethics, and more. “Occupational skills” are described as the iceberg comprising what on closer examination one would call personal characteristics, attitudes, values, attributes, or behavior (Hyland 1999). Additionally, and despite the fact that the word “skill” is an international term and trend, all countries do not approach and do not conceptualize “skill” and “training” in the same way (Keep and Payne 2004). This has serious implications for wages and labor mobility especially within the European Union area. For this reason, special effort is needed to investigate the implications of skills shortages and skills needs of workforce in each country and within different economic sectors and fields.

Tourism is continually expanding and has become one of the largest and fastest-growing economic sectors in the world with new tourism destinations added. The UNWTO forecastings indicate a continuous increase in arrivals worldwide (UNWTO 2015). Therefore, considering this fact, it is necessary for destinations to maintain and even increase their popularity and clientele. In this perspective, making a destination attractive and increasing the satisfaction from the experience acquired is really vital.

To meet the quality and demand, tourism industry requires skilled human resources. Personnel's skills, among other factors have been recognized to be essential for the overall satisfaction from the destination. Surveys have proved that apart from interpersonal, communication, problem solving skills, it is essential to provide additional key competencies such as cross cultural sensitivity, emotional intelligence, inquisitiveness, openness to new perspectives, and influences, cross cultural negotiations, managing uncertainty and complexity in international business environments, international adjustment and adaptability, and self-management (Vance and Paik 2011). Other studies indicate that tourism sector employers put more emphasis on interpersonal and personal skills of employees than a college diploma (Ricci and Kaufman 2007). Another argument is that tourism employers value high the overall intellectual ability of employees, their flexibility, good communication skills, language skills, IT competencies, and their ability to handle unexpected situations (Singh 2005). Important qualities include: teamwork, guest service skills, professional appearance, and an understanding of the industry expectations (Tesone and Ricci 2005). Researchers in the hospitality sector (Christou and Eaton 2000; Irwin 2005; Nelson and Dopson 2001; Tas 1988) and in a variety of other fields including accounting (Asonitou 2014; Hassall et al. 2003) international management (Demir and Söderman 2007) and marketing (Walke et al. 2009) argue that most of the graduates after their graduation are well aware of the job knowledge (hard skills), but they lack the necessary job skills (soft skills). In short, these studies refer to a gap between what the market needs and what the tourism graduates can offer. In the Greek context, previous studies have shown that there is serious gap in business administration graduates' soft skills possession and the relative needs of the market (Asonitou 2015a, b; Christou 1997, 1999, 2002). This has implications for higher education curriculum including the tourism education and consequently all stakeholders, educators, employers, and policymakers, should plan and act accordingly (Christou 2002; Sheldon et al. 2008; Wang 2008).

Employers in the service sector even more than other sectors, look for certain skills, in other times and otherwise called qualities, traits, or attributes, like politeness, respect, positive attitude, and friendliness. A tendency is being created for organizations in the service sector to manage the way their employees feel and look and not just the way they behave so that work becomes emotional and aesthetic as well as, or instead of productive (Grugulis et al. 2004). In hotels and bars, the appearance, the behavior, the accent, and the general stylishness of the bartender, waitress, or retail assistant are part of what makes the service being offered trendy and upmarket (Nickson et al. 2001). Although there is evidence of negative

aspects of this tendency, people who work with their emotions report higher levels of job satisfaction and take significant pleasure in the emotional aspects of their jobs (Korczynski 2001). Therefore, an emphasis is put in certain attributes of the service personnel like appearance, socialization, friendliness, politeness, and communication.

Secondary Research

In order to support the above theoretical concept of increased productivity through increased skills development, the summary findings of a previous study (Vitouladiti 2013) are presented underneath. The study surveys the importance and dynamics of social and professional skills, in the tourism sector, and their implications for the overall experience for the destination. The specific study attempted to add to the limited research on human resources in the field of tourism.

Despite the importance applied by scholars (Christou 2002; Velissariou 2012; Vitouladiti 2013) on the skills of personnel in tourism, as a differentiating element capable of creating a positive destination image and comparative advantage, the researches that have been conducted focused mainly on the hospitality sector and not on the tourism sector as a whole. Also, there have not been researches that studied the impact of personnel on the overall assessment of a tourism destination, (Baum 2007; Eurobank EFG 2007; Haynes and Fryer 2000; Kaye and Taylor 1997; Lockyer and Scholarios 2004; Lucas 2004; Velissariou and Zagkotsi 2009; Wang 2006). The original study (Vitouladiti 2013) included all types of tourism enterprises (hotels, other accommodation types, travel agencies, tour operators, information centers, restaurants, etc.) and focused on the measurement of the impact of service personnel to the overall assessment of the destination and the vacation experience acquired. The research was implemented at an insular mature Greek destination.

Methodology

The questionnaire contained the following six skills/attributes: communication, politeness, friendliness, quality of service, level of professional knowledge of the personnel employed in tourism, and personal hygiene/appearance. The respondents (foreign tourists) were asked to judge the service personnel by rating these skills on a scale of five point choices, as follows: 5 = very good, 4 = good, 3 = neither good nor bad, 2 = bad, and 1 = very bad. Moreover, the respondents were asked to evaluate the overall experience acquired in the destination by using another scale of five point choices as above.

Findings

The study implemented descriptive statistics to obtain the visitors' assessment on the service personnel, factor analysis in order to group the variables and logistic regression in order to create a logit model that would demonstrate the impact of personnel skills on the overall evaluation of the destination and the acquired vacation experience.

On the basis of the descriptive statistics, all the variables/skills obtained a rating >4 (meaning good). These ratings show that the evaluation can be considered satisfactory in general.

The factor analysis (Principal Component Analysis) produced the following two factors with the respective factor loadings: Factor 1—Social skills (quality of service 0.61—communication skills 0.63—politeness 0.86—friendliness 0.88). Factor 2—Professional skills (level of professional knowledge of the personnel employed in tourism 0.86—personal hygiene/appearance 0.75).

Following, the logit model was structured in order to answer the question: “does the improvement of these two factors result in improvement of the overall experience acquired in the destination?” The formation of the overall evaluation was defined by the above two factors.

The findings, clearly indicated that an increase to the factor “social skills” of one unit increases the possibilities for “very good” evaluation by 2.5 times. The increase refers to $\text{Exp}(\beta)$. An increase to the factor “professional skills” of one unit increases the possibilities for “very good” evaluation by 2.42 times. The increase refers to $\text{Exp}(\beta)$.

The findings revealed the influence, in measurable terms, of each one of the factors to the improvement of the overall experience acquired in the destination.

Discussion

The findings of this research are important since they validate the significance and the dynamics of service personnel's skills to affect the overall evaluation of a tourism destination and the vacations experience acquired. The present study's contribution is, among other, the provision of measurable validation of the importance of employees' skills. The authors interpret the findings about the social and professional skills of service personnel through the “virtue circle” narrative (ILO 2008).

These findings could lead effectively the managers and the authorities to enhance and exploit this element in order to maximize the prospects for positive evaluation of the destinations in general and the tourism enterprises operating in them in particular. This element, the positive evaluation, is a necessity for mature destinations that are struggling to find differentiating factors from the competition. The positive evaluation of experience and increase in satisfaction could lead to customer loyalty (Bosque et al. 2006).

It seems as an undeniable conclusion that the development of human resources' skills has become a vital issue and enterprises can rely on it to achieve competitive advantages. Human resources' training and skills development in order to deal with people and provide the right service with the required standards is a must for tourism enterprises in obtaining satisfied customers and generating profit as a result.

The development of human resources' skills will produce customer loyalty, positive word of mouth publicity, positive comments through the social media, and effective advertising (Kavoura and Katsoni 2013; Kavoura and Stavrianeas 2015). All these can lead to repeat visits and a stabilized labor market with increased possibilities for economic and productivity growth. However, it is necessary to point that skills development and human capital training alone cannot raise enterprise and national productivity. Other sets of factors are necessary and skills should be part of larger development strategies in order to contribute to overall productivity and employment growth (ILO 2008).

This paper can also offer guidelines for training priorities, curriculum, special courses, etc. The importance of tourism training and education is undisputable. Also, the need of matching the courses of tourism studies with industry requirements and management advances has been recognized by researchers (Raybould and Wilkins 2006).

The European Union (EU) education strategy promotes the reform of Higher Education systems toward to an integrated, knowledge-based economy (EC 2000). Central to these reform strategies are issues of quality assurance, accreditation, credit transfer system (ECTS), learning outcomes, and the development of European students' skills and competences. ECTS credits are based on learning outcomes and learning outcomes consist of the knowledge, the skills and the competences that the graduates acquire at the end of their academic life. The inclusion of skills into the curricula of Higher Education is emphasized into the Greek Frame Law (4009/FEK195A/2011) which specifically declares that the mission of Higher Education Institutions (HEIs) includes the promotion of skills and competences, by the use of new teaching methods and urges academics to help students to develop their critical thinking skills (Asonitou 2014).

It is argued that the useful skills, offered by education, in addition to practical experience in the industry are the sources for the high employment rate of tourism graduates (Busby 2001). Therefore, tourism enterprises should hire graduates from tourism schools and should provide opportunities for advancement and promotions. It is imperative that tourism employers invest in education and in the creation of harmonic working relationships by avoiding frequent employees' changes, a common practice in the tourism sector. The tourism enterprises should provide opportunities for regular training programs to keep their personnel up to date with the clients' developing demands and with the constantly evolving technology. Especially in the cases of large hotels and tour operators, these findings may indicate ways to satisfy their clientele's demands by developing training programs in collaboration with tourism schools.

Satisfied and loyal clientele is the main objective of tourism marketing and of tourism enterprises. This is especially true for the tour operators that handle a

complex tourism product and a demanding clientele with high educational level and high travel experience (Vitouladiti 2014).

In countries which rely on incoming tourism arrivals, education and skills development are essential in order to obtain high service standards and deal with the competition.

Future Research

Further research is necessary in order to indicate the context and areas of collaboration among educators, employers, and policymakers to further develop skills in the tourism sector. Additionally, further field research is necessary from Higher Education Institutions (HEIs) in order to diagnose the actual possession of core skills and comparison to the market needs. Research findings from other field studies in Greece like accounting (Asonitou 2015b) indicated that students lack interpersonal skills which comprise the ability for team work, assuming leadership positions and organizing and delegating tasks. The low level of interpersonal skills inhibits the development of other skills like communication, research and interdisciplinary skills, problem solving, critical thinking, and other skills. Therefore, future research could concentrate on the priorities for soft skills improvement within higher education tourism courses.

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Part II

5th Symposium on Management Challenges (IANOS): Crisis Kills or Links?

Organized by: Panagiotis Trivellas
TEI of Central Greece, Logistics Management, Greece

Description:

This symposium attempts to cast light on concurrent advances in the fields of organisational behaviour, HRM, SCM, innovation and knowledge management, strategic leadership and higher education. Diverse and modern perspectives on the development and evolution of the relative disciplines on regional and national level will be discussed and debated. However, does the current crisis impose threats to survival (kills?) or yield opportunities for changes and synergies to growth (links?)? Are the same fundamental cornerstones such as leadership, strategy, knowledge and innovation that produce both excellence and perish? (Knowledge Innovation Leadership Learning Strategy: KILLS? Leadership Innovation Networking Knowledge Strategy: LINKS?) In the light of the current recession, this symposium aims to track different views, discuss and publish research on the challenges in the field of management, which influence societies, cultures, networks, organizations, teams, and individuals. Furthermore, this session will put special emphasis on the investigation of those business processes fostering innovation and facilitating management transitions from dominant structures to more evolutionary, developmental paradigms.

Knowledge Management and Employee General Competencies in Accounting Firms

Panagiotis Trivellas, Nikolaos Kakkos and Ilias Santouridis

Abstract This paper aims to shed light upon the impact of knowledge management on employee general competencies in accounting firm services (accounting offices). In this study, general competencies consist of abilities regarding (a) communication and teamwork, (b) problem solving and prioritizing, (c) time management and creativity, (d) interpersonal relations, (e) knowledge acquisition and application, and (f) risk taking and challenging. Knowledge management is primarily regarded the knowledge sharing culture, which consists of values about communication and information exchange, human relations, group decision-making and knowledge diffusion. The stimuli of this research can be traced on the empirical inconclusiveness in the existing literature investigating individual competencies and knowledge management mechanisms, as well as their association. The empirical findings from a survey of 141 employees in accounting offices in Central Greece confirm that all types of general competencies are significantly associated with knowledge sharing culture. As a consequence, management may invest on training in order to develop general competencies, which in turn, will boost knowledge sharing. Thus, accounting services firms may build a sustainable competitive advantage on knowledge management.

Keywords General competencies • Knowledge management • Knowledge sharing • Accounting • Greece

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Introduction

Globalization, fierce competition, financial crisis, and advances in communication and information technology trigger the emergence of a knowledge-driven economy forcing organizations to depart from traditional perspectives in terms of human resources and adopt a knowledge management approach. Knowledge management (KM) focuses on identifying, sharing, creating, and storing of knowledge in pursuit of organizational learning (Rowley 2000).

In the OB literature, a series of empirical studies has acknowledged the impact of knowledge sharing (KS) on the successful implementation of KM and organizational excellence (e.g., Widen-Wulff and Ginman 2004; Yang 2007a). KS aims at the creation of job-related tacit knowledge amongst organizational members. KS embraces employees' willingness to share knowledge (King 2006) and colleagues' information exchange across the organization (Bartol and Srivastava 2002). KS behavior can be shaped and expressed by a variety of forms and factors such as motivation, social relationship, and organizational culture (e.g., King 2007; King and Marks 2008; Lee and Suliman 2002; Goh 2002). Knowledge transfer and exchange among group members of an organization facilitates the development and sharpening of individual competencies (Hakkarainen et al. 2004; Sveiby 2001). Competencies can be distinguished into specific, which are essential to perform specific technical (or functional) tasks and also, general competencies including intelligence, information-processing, key competencies, and meta-competencies. More, the literature provides support to the influence of general competencies on job-related attitudes such as job satisfaction and performance.

Theoretical Background

Knowledge Management and Knowledge Sharing

In the relevant literature (e.g. see Nonaka 1991; Rowley 2000; King 2007), Knowledge Management (KM) is defined as a process of collecting and identifying valuable information (i.e., knowledge acquisition), enabling employees to recover organizational knowledge, exploiting, applying knowledge, and disseminating it through the organization (i.e., Knowledge sharing) and storing knowledge in a repository (i.e., organizational memory). A comprehensive definition of KM has been put forth by Rowley (2000), stressing the importance of identifying, sharing, creating, and storing knowledge in pursuit of organizational learning.

KM embraces the concepts of explicit (documented) and tacit (subjective) knowledge (Nonaka 1991). The explicit can be traced in tangible written or oral forms such as procedures, policies, rules, and regulations, and thus, is easily acquired, transferred and shared; the tacit knowledge, also termed "embrained knowledge" and "procedural knowledge" (Argyris and Schon 1978; Polanyi 1966), is intangible and refers to mental constructs, values, beliefs, and know-how.

Knowledge sharing (KS) has been regarded as the most crucial component of KM (e.g., Bock and Kim 2002; Gilbert and Krause 2002; Inkpen 2000; King 2007) and defined as employees' willingness to share their valuable knowledge with others (King 2006) as well as employees' actions to diffuse and exchange information across the organization (Bartol and Srivastava 2002). Empowering individuals to be willing to share knowledge, can be expressed by various forms (King and Marks 2008), stemming from personal belief structures and/or institutional structures (Szulanski 1996) such as shared values, norms, accepted practices, or perceptions held by employees within an organization; these are usually described as "culture" (King 2007).

A number of scholars have proved the association of specific characteristics of organizational culture with the successful implementation of KM, such as collaborative (as opposed to competitive) climate and trust (e.g. Goh 2002; Sveiby and Simons 2002; Wagner 2003), top management commitment (Hislop 2003), mentoring (von Krogh 1998), accountability for team sharing (Bollinger and Smith 2001), innovative, problem-seeking, and problem-solving orientation (Goh 2002), and spontaneous and voluntary sharing (Dixon 2002). Ruggles (1998) concluded that the most important obstacle for knowledge sharing is organizational culture.

Knowledge Sharing and General Competencies

KS attempts to facilitate and develop job-related tacit knowledge amongst members of organizations. In particular, KS may refer to individuals' knowledge, insights, and working experience that are related to current tasks such as daily routines, accounting services offered, interpersonal relation techniques, communication skills, standard operation procedures, decision-making, creativity and problem solving skills, employee behaviors, and customer interaction skills (King 2007). Knowledge interflows among organizational members helps advance individual competencies and collectively create new knowledge (Sveiby 2001). Knowledge synergies lead to enhanced social capital whose benefits are: (a) knowledge sharing refines knowledge created by dialog amongst members who possess knowledge and also (b) individual learning for those who receive knowledge. Empirical findings show that firms' culture characterized by openness and empowerment boost integration of individual competencies into organizational knowledge creation and sharing (Gupta et al. 2000). Following an extensive review of empirical studies in psychology, sociology and education, Hakkarainen et al. (2004) argued that social interaction, knowledge sharing and collective problem solving, develop human competencies related to network expertise. Thus, the following hypothesis has been proposed:

Hypothesis 1 Knowledge sharing exerts a significant positive impact on general competencies.

Methodology

The instrument was a structured questionnaire based on 7-point Likert scales used to measure knowledge sharing and general competencies. The knowledge sharing scale adopted has been validated in similar contexts (e.g., see Yang 2007a, b; Trivellas et al. 2015a). General competencies were measured by the well-established Allen's et al. (2005) scale (e.g., see also, Trivellas et al. 2015a, b). The questionnaire was tested twice before released by five academics and ten accountants coming from different firms. To ensure translation validity, a translate/back translate from English to Greek procedure was used by three bilingual researchers. The field research generated 141 responses (70.5 % response rate) from employees in accounting services firms (accounting offices). Most of them are micro-enterprises (less than 10 employees). Regarding demographics, 49 % of the sample is female, 26 % are front-line employees, 20 % are supervisors (at a lower hierarchical level), and 48 % are less than 35 years old.

Statistical Analysis

Principal Component Analysis (PCA) confirmed a six-factor latent structure of the general competencies construct and the uni-dimensionality of knowledge sharing scale (see for in depth analysis Trivellas et al. 2015b). The resulting six groups of general competencies were labeled as (a) communication and teamwork, (b) problem solving and prioritizing, (c) time management and creativity, (d) interpersonal relations, (e) knowledge acquisition and application, and (f) risk taking and challenging. Cronbach's alpha used to test internal reliability of each sub-dimension was found to be well over the minimum acceptable reliability level of 0.7.

To investigate the link between general competencies and KS, multiple regression analysis was performed. Seven control variables were included (i.e., gender, age, educational level, working experience, hierarchical level, firm's size, and monthly income). The effect of general competencies on KS (see H1) is shown in Table 1. The model is significant ($p < 0.001$) while 63.9 % of the total variance of knowledge sharing is explained by the independent variables. Also, there are no serious multicollinearity problems among the independent variables as the VIF is far below the three points limit suggested in the literature. The data were examined for outliers, skewness, kurtosis, and multivariate normality too.

Findings reveal that four out of the six clusters of general competencies are significantly and positively related with KS, namely, knowledge acquisition and application (std. beta = 0.220, $p < 0.05$), communication and teamwork (std. beta = 0.234, $p < 0.05$), interpersonal relations (std. beta = 0.214, $p < 0.05$), and risk taking and challenging (std. beta = 0.203, $p < 0.05$). In contrast, such general competencies as problem solving, prioritizing, time management, and creativity do not promote KS culture values. Regarding control variables, only gender

Table 1 Regression results pertaining to the relationship between general competencies and knowledge sharing, controlling for seven variables

	Std. beta	Sig.
Demographics (nonsignificant except from gender and age)		
Gender	-0.153	0.007
Age	0.302	0.007
Knowledge acquisition and application	0.220	0.014
Problem solving and prioritizing	0.015	0.905
Time management and creativity	0.026	0.830
Communication and teamwork	0.234	0.030
Interpersonal relations	0.214	0.011
Risk taking and challenging	0.203	0.012

Dependent variable: Knowledge sharing culture, Adjusted—R square = 0.639, $p < 0.001$ (N = 144)

(std. beta = -0.153, $p < 0.01$) and age (std. beta = 0.302, $p < 0.01$) are significantly related to KS, meaning that male and older employees exhibit higher level of KS behavior.

Discussion and Conclusions

This study investigates the link between general competencies and knowledge sharing (KS) in accounting services firms. Drawing from a sample of 144 employees of accounting offices, four clusters of general competencies are found to be strongly related to knowledge sharing culture. In particular, extrovert competencies promoting knowledge acquisition and application, risk taking and challenging, communication and teamwork, and interpersonal relations are followed by attitudes facilitating knowledge sharing at the workplace; introvert general competencies such as problem solving and prioritizing, time management and creativity, exert no effect on knowledge sharing culture.

KS lies at the core of KM. Building on shared values, norms, accepted practices, or perceptions held by employees within an organization, KS evolves into a knowledge-centered culture which molds individual behavior (e.g. see King 2007; King and Marks 2008; Lee and Suliman 2002; Goh 2002). Then, KS culture facilitates the development of new general competencies or sharpen existing ones, such as inventing new ideas, communicating, interpersonal relationships, prioritizing, creativity, planning, problem solving, and team working. Still, the advancement of general competencies drives individual effectiveness expressed by job satisfaction. Competent employees are one of the utmost important resources in the pursuit of a sustainable competitive advantage. Hence, managers in accounting services firms should adopt KM practices and techniques and nurture a KS culture to improve employees' competency profiles.

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Personal Characteristics and Job Satisfaction of Greek Banking Employees

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Abstract The purpose of the study was to explore the levels of job satisfaction of Greek employees and to examine the effects that specific personal characteristics have on these levels of job satisfaction. The sample consisted of 252 (51.7 %) males and 235 (48.3 %) females of different bank organizations. The results of the present study suggest that in general Greek bank employees are enough satisfied with their job in general. Moreover, MANOVA and post-ANOVA analysis have concluded that specific personal characteristics of the bank employees affect different aspects of their job satisfaction and their levels of job satisfaction in total such as gender, age, marital status, educational level, and the position that they hold in the bank. Also, the years of their general experience as bank employees, the years that they have been working in the specific institution and the years that they have been working in the same position affect their job satisfaction in a statistically significant way.

Keywords Job satisfaction · Bank employees · Personal characteristics · Human resource management · Performance appraisal

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Introduction

Job satisfaction has been under the scientific scope for several decades, yet in the respective literature there is not available one single definition globally accepted (Koustelios and Kousteliou 1998). Various surveys have approached the term of job satisfaction in different ways, yet the researchers agree on the fact that job satisfaction is a multidimensional notional construct, composed by many individual elements (Perie et al. 1997).

Job satisfaction is one of the most extensively studied issues of administrative and organizational and it is considered to be extremely important both from an economic and a humanitarian and ethical point of view (Chelladurai 1999). The aim of the present study is to examine the levels of job satisfaction and personal characteristics of Greek banking employees.

Literature Review

According to Allport (1933; 1954), job satisfaction is defined by the individual's "attitude toward the specific job," while Herzberg et al. (1957) interpret job satisfaction as a motive for the employees. Additionally, Schultz and Schultz (1994) stress that job satisfaction is not stable, meaning that it should not be expected for people to feel a complete satisfaction for their jobs.

Later on, Granny et al. (1992) considered that job satisfaction is related with the individual's attitude toward his or her job. Also, job satisfaction has an effect on the individual's behavior in the working environment, his/her levels of productivity and efficiency, levels of job absenteeism, and personnel's motivation (Jewell and Siegall 1990; Balzer et al. 1997). Respective research findings conclude that the satisfaction of intrinsic needs lead to job satisfaction which in turn leads to higher levels of productivity (Robbins 2001). In addition, it has been found that the positive correlation between job satisfaction and productivity is predominant in people who work in administrative positions, self-employed individuals, and those whose job is characterized by complexity (Schultz and Schultz 1994).

Other scientific data suggest that low levels of job satisfaction are related with increased levels of job absenteeism and the employees' tendency to quit their jobs (Krumm 2001). Moreover, respective findings underline the fact that the employees who are more optimistic about life would leave more easily a job when their levels of job satisfaction are low than others (McKenna 2000).

Last but not least, as far as job characteristics are concerned, it has been found that the number of different skills that are required for their job, the job identity, the degree to which their job has an effect on other people's lives, the autonomy degree and working feedback, have an impact on the levels of job satisfaction. Other variables concern working hours, the working circumstances, financial benefits, security, type of leadership that is applied in the working environment, type of

supervision and interpersonal relationships with colleagues and individuals who are higher in the hierarchy (Antoniou 2009). In terms of gender differences, it is important for the women's job satisfaction, their motive of entrance in the labor market, if this was their option for the development of a career or if they work as a result of the necessity to contribute in the family income (Schultz and Schultz 1994).

Furthermore, a number of organizational factors in the Greek context have been considered as crucial antecedents of job satisfaction, such as organizational commitment (Trivellas 2011; Trivellas et al. 2010), emotional intelligence (Trivellas et al. 2011, 2013a), job stress (Trivellas et al. 2013b), organizational learning (Dekoulou and Trivellas 2015), strategic HRM (Trivellas 2009), leadership (Antoniadis and Ananikas 2005), innovation (Trivellas and Santouridis 2009), psychological contract (Antonaki and Trivellas 2014), and service quality (Trivellas and Dargenidou 2009; Trivellas and Santouridis 2014).

Research Methodology

The sample of the present study included 487 Greek bank employees. The sample consisted of 252 (51.7 %) males and 235 (48.3 %) females. With respect to the age of the employees, 66 (13.5 %) employees were 30 years and younger, the age of 235 (48.2 %) employees ranged between 31 and 40 years, the age of 124 (25.4 %) employees ranged between 41 and 50 years, and 62 (12.9 %) employees were 51 years and older. Of these, 4 (0.1 %) employees finished elementary school, 27 (5.5 %) finished the secondary school, 319 (65.5 %) employees studied at the higher education, and 137 (28.9 %) employees obtained master's. With regard to participants' job positions, 19 (3.9 %) were principals, 25 (5.1 %) were deputy directors, 58 (11.9 %) were chief A (signature), 177 (36.3 %) were chief B (signature), and 208 (42.8 %) were without an accountability position (officers). With regard to the years of experience, 247 (50.7 %) employees have less than 10 years of experience, 151 (31 %) employees had between 11 and 20 years of experience, and 89 (18.3 %) employees have over 21 years of experience.

In order to measure job satisfaction of bank employees there was used the Employee Satisfaction Inventory (Koustelios and Bagiatis 1997; Koustelios 2004). The questionnaire comprises of 24 questions which evaluate the six dimensions of satisfaction as these are presented at Table 1, whose answers are given on the basis of a five-point scale ranging from totally disagree (1) to totally agree (5) (Zournatzi et al. 2006). Questions from 1 to 5 respond to working circumstances, questions 6–9 are related to the respondents' salary, 10–12 to development opportunities, 13–16 to the nature of the job, 17–20 concern direct chief, and 21–24 respond to the levels of satisfaction for the organization as a total.

For the analysis of ESI questionnaire Cronbach's α was used for the scale in total and for each factor separately in order to evaluate the questionnaire's reliability. Next, descriptive statistics were used such as the mean and standard deviation so as to determine the levels of job satisfaction that bank employees have.

Table 1 Statistical tests for the estimation of reliability on the basis of Cronbach's α

ESI variable	Cronbach's α
Working circumstances	0.692
Salary	0.741
Development opportunities	0.749
Nature of job	0.802
Direct chief	0.880
Organization in total	0.801

During the statistical analysis of the questionnaires the variables such as gender, age, marital status, etc., were used as independent variables in order to detect if there is statistically significant differences between the levels of satisfaction on the basis of these specific independent variables. On the basis of the evidence given above the initial hypotheses of the study are the following:

- H0: The independent variables do not differentiate the levels of satisfaction that bank employees experience and consequently there are no statistically significant differences observed in levels of job satisfaction for each one of them.
- H1: Independent variables differentiate the levels of job satisfaction that bank employees experience and consequently there are statistically significant differences in levels of job satisfaction on the basis of each one of them.

The statistical package (SPSS) for the social sciences was used to analyze the data that were acquired through the distribution of the questionnaires. Descriptive statistics were applied in order to gain information about levels of satisfaction and demographic variables.

For the statistical analysis of the data and the examination of the initial hypotheses there was applied Multivariate Analysis of Variance (MANOVA) for the total of dependent ESI dependent variables (profession, salary, opportunities for development, nature of job, direct chief and organization in total). In the cases where there was detected statistical significance in Multivariate Analysis of Variance there were conducted Univariate Analysis of Variance—ANOVA) for each dependent variable.

Results

For the control of reliability of the results and the ESI questionnaire Cronbach's α was estimated. Cronbach's α for scores over 0.7 suggests that the questionnaire and the results are reliable whose grade of reliability is higher as higher Cronbach's α is.

As presented in Table 1 analysis has shown that there is high reliability in the results based on the questionnaire given as Cronbach's α is higher of 0.7 for each variable separately and for the questionnaire in total, except for the case of the variable "Working Circumstances" which tends to 0.7.

Table 2 Descriptive statistics for variables of job satisfaction

ESI variable	Mean	Standard deviation
Working circumstances	3.47	0.84
Salary	3.07	0.83
Development opportunities	2.90	0.8
Nature of job	3.46	0.84
Direct chief	3.97	0.79
Organization in total	3.41	0.5

More analytically, descriptive statistics for each one of the ESI questionnaire variables are presented in Table 2.

Discussion—Conclusions

Taking into consideration the findings of the described analysis, it is apparent that the participants of the study could be characterized as enough satisfied from their job as bank employees. Also, there have arisen a series of statistically significant differences in terms of the demographic and personal characteristics of the respondents and levels of their satisfaction from their job.

In congruence with the respective literature, men are more satisfied from the nature of their job and the working circumstances in comparison with the women participants, whereas women are significantly more satisfied from their direct chief. So, it is affirmed that men and women mainly differ in the sources of job satisfaction and the different dimensions of jobs that affect these levels (Schultz and Schultz 1994).

Also, marital status plays an important role as married bank employees are found to be more satisfied from the development opportunities they are offered, from their direct chief, and the nature of the job which is also found in the bank employees of higher age, except for the dimension of development opportunities. As far as age, experience and years in the same position are concerned, literature also stresses that employees that are more experienced, have been stable in terms of their working environment and in the same profession present higher levels of job satisfaction, especially from the nature of the job and their salary (Spector 2000).

The factor of responsibility that has been underlined for its importance by Vroom (1964) in terms of job satisfaction has also had an effect in this study, as deputy directors are found to be more satisfied than officers, Chiefs A' Signature and Chiefs B' signature. On the other hand, it could also be claimed that for directors of the sample the responsibility that they have is not mirrored in their salary.

Last but not least, the high level of education seems that it offers to employees higher levels of satisfaction on the basis of the development opportunities given and their relationship with their direct chief.

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Social Networking Sites' Usage in a Period of Crisis. A Segmentation Analysis of Greek College Students

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Abstract Social Networking Sites possess a dominant position in the agenda of marketers and academics around the world. Despite the penetration, social media and SNSs have in all demographic categories, young persons and students still remain the main users. This paper examines the usage patterns of social media and social networking sites by college students. 512 students of TEI of Western Macedonia have participated in our research, answering questions regarding 18 different usages of SNSs. Four main categories of SNSs usage patterns were identified, that were used along with six more variables to identify segments of SNS users, following the typology proposed by Brandtzæg and Heim (2011). Our findings indicate the existence of four segments of SNSs users. Results are discussed under the prism of the Greek economic crisis, and the implications they have for marketers in planning and implementing social media marketing strategies.

Keywords Social networking sites · Social media marketing · Segmentation · Greece

Introduction

Social Media (SM) and Social Networking Sites (SNSs) have gained immense attention during the last decade as their widespread adoption have made them a part of everyday life for individuals, businesses, and organizations. The importance of SNSs and SM for business communication with customers and marketing are outlined by Constantinides et al. (2013), and Kavoura (2014). Most of research is

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focused on US (Boyd and Ellison, 2007) and only recently there has been some empirical work on researching and analyzing consumer behavior types in social networking sites for other countries.

In Greece, usage of SNSs and social media has risen during the last years, as a way for people to communicate, to express or entertain themselves, with no substantial cost. Despite the high levels of penetration of SNSs in Greece, little research has been conducted on their usage. In this paper, the patterns of usage of SNSs in Greece are examined using the typology developed by Brandtzæg and Heim (2011) by investigating the attitudes of college students in the TEI of Western Macedonia. 535 students were asked to answer on 18 questions regarding the ways they are using SNS, revealing four major ways they are using social media and SNSs, and identifying four main usage profiles.

The rest of the paper is structured as follows. Section 2 reviews the literature on the usage of SNSs and the typologies used to identify users' segments. Section 3 analyses the characteristics of the sample surveyed and the methodology used. In Sect. 4 the results of the factor and cluster analysis are presented and discussed. Finally, Sect. 5 concludes the paper offering suggestions for further research.

Literature Review

The importance of social media and SNSs has been widely recognized in the last 10 years (Kaplan and Haenlin 2010; Constantinides et al. 2010) as their exponential development, along with increased Internet access capabilities affect more people around the world, than ever before.

A number of studies and statistics prove that students and young persons are the ones who use internet and SNSs more (ComScore 2013). This is also true about Greece. Internet access and usage has risen to almost 71.4 % while 98.5 % of young people of 18–24 years old use internet (Focus Bari Greece 2015). According to the latest data provided by ELTRUN (2014) in Greece the most famous SNSs is YouTube (93 %) followed by Facebook (82 %) and LinkedIn (58 %).

Identifying and using a typology based on the reasons and the ways that people use SNSs is important for our research. Kozinets (1999) in one of the first attempts to describe usage patterns of early SNSs suggested an online user typology describing virtual community members based on the degree of consumption activity and the intensity of relationships with other members of the virtual community. Lin and Lu (2011) found that enjoyment and entertainment is the most important reason for the continued use of SNSs, followed by the number of friends using SNSs, and their usefulness in terms of communicating and acquiring information. According to Cheung et al. (2011) students use SNSs, and especially Facebook, in order to communicate, entertain, and interact, strengthening in this way their social presence. Giannakos et al. (2013) surveying 222 Facebook users in Greece, identified four main reasons that drive people using Facebook namely: Social Connection, Social Network Surfing, Wasting Time and Using Applications.

The identification of patterns of SNSs usage also facilitates the recognition of segments of users. Constantinides et al. (2010) identified four different user profiles and proposed a segmentation framework based on the experience gained and the usage of each user. The four segments derived by their analysis are: *beginners*, *habitual Users*, *outstanding users*, and *experts*. Lorenzo-Romero et al. (2012) identified three major categories of users: *Introvert*, *Versatile*, and *Expert Communicators*.

Using SNSs can be categorized using two criteria according to Brandtzæg and Heim (2011), participation and frequency of use (low-high), and purpose (informational or recreational). After applying these two criteria for the users of four Norwegian SNSs, five segments of users appeared, namely *sporadics*, *lurkers*, *socialisers*, *debaters*, and finally *actives*.

Research Methodology

For this study, questionnaires were distributed among on 535 undergraduate students, and 512 valid questionnaires were received. The respondents had to answer in questions regarding to the SNSs they use, the time spent and the devices they use to access SNSs. The main section of the questions had to do with a series of 18 questions concerning activities in SNSs with a 7-point Likert scale. A number of socio-demographic data were also collected.

The sample consisted of 274 (53.5 %) male respondents, and 238 (46.5 %) female respondents. The most popular and the most frequently used SNS across the sample is Facebook as 94.7 % (and it is the first choice for the 82 % of the respondents) and in the second place is YouTube (52 %). Contrary to our expectations, a LinkedIn account was owned by only 12.1 %, as college students despite the crisis do not seem to be engaged in SNSs that would help them find a job and promote their resume to potential employers (Trivellas and Kakkos 2015).

Two more issues concerning the characteristics of the sample are that 38.7 % spends 1–3 h in SNSs, 25.2 % 3–5 h, and 18.0 % more than 5 h. Another extremely interesting finding, that should raise the attention of marketers concerning social media marketing and advertising, is that 82.4 % of college students use primarily mobile devices (smartphones 40.4 %, Laptop computer 35.5 %, and Tablet 6.4 %) to connect to SNSs.

Results

The reliability of the scales used to evaluate the internal consistency of the constructs was evaluated with the use of the *Cronbach's alpha* and the value is $0.785 > 0.70$, which is considered to be a good and acceptable value. Principal Components Analysis was used and the factors were rotated to ease interpretation

with the Varimax rotation method, that is the most frequently used with survey data, as it results in more interpretable and relevant factors (Field 2005; p. 630). In order to assess the homogeneity of variables, and the appropriateness of factor analysis the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was calculated, and is equal to 0.829. Also the Bartlett's Test of Sphericity was highly significant, and therefore our factor analysis findings are appropriate. According to the initial eigenvalue using the Principal Component Analysis and the Varimax Rotation Method with Kaiser Normalization, the following four factors appeared:

- *Debating* are activities related to participating in polls, forums, discussions, and wikis, write reviews on products and services, reading blogs and posting comments, and update Twitter status.
- *Socializing* are activities concerning, adding labels and tagging photos, commenting on friends' profiles, updating Facebook profile, looking for new friends, and contacting friends.
- *Expression* includes activities concerning writing blog posts, uploading videos in specialized SNSs, and looking for a job and finally,
- *Entertainment seeking* consists of video watching activities and playing online games.

In order to identify the segments of usage of SNSs by the respondents of our sample, the *Two Step Clustering* method has been performed as we are using mixed variables measured on different scales (Mooi and Starsted 2011; p. 269). Along with the four main factors revealed by the principal component analysis, six more variables were included in the segmentation procedure. These variables examined among others, the devices students use mostly to connect to SNSs and the existence of an account in the main five SNSs (Facebook, Twitter, YouTube, Google + , and Instagram) etc.

Four clusters were identified after 10 inputs. The ratio of sizes between the largest cluster (Cluster 2) and the smallest Cluster (Cluster1) is $1.68 < 3.00$. In Table 1 the characteristics of each segment are shown in detail. The values for the six additional variables are reported in Panel A, while the mean values of the Factors derived by the principal component analysis, are demonstrated in Panel B.

The first formed cluster includes 18.9 % of the total respondents who usually prefer to connect to SNSs from their laptop computer. Also, they have accounts to all the major social and they are engaged in almost all kinds of participation activities. For these reasons they can be labeled as "Actives".

The second cluster (31.8 %), represents the largest segment. They mostly use their mobile device in social media and can be characterized as "Recreationalists" since they are mainly engaged in activities that related to recreation, and enjoy to follow an online discussion without participating.

The third cluster (24.6 %) is comprised by the respondents who are mostly connected in SNSs using their Mobile Device. They have Facebook and usually Twitter account and Instagram. They can be described as "Socializes" since they prefer to get in touch and contact with others. However, they can also be

Table 1 Characteristics of identified clusters

Variables	Cluster 1: actives	Cluster 2: recreationalists	Cluster 3: socializers— debaters	Cluster 4: sporadics
<i>Panel A</i>				
Respondents	97 (18.94 %)	163 (31.84 %)	126 (24.61 %)	126 (24.61 %)
Device of connection	Laptop computer (44.3 %)	Mobile phone (41.1 %)	Mobile phone (46.8 %)	Laptop computer (38.1 %)
Facebook account	99.0 %	90.2 %	96.0 %	96.0 %
Twitter account	100.0 %	0.0 %	62.7 %	0.0 %
YouTube account	100.0 %	81.0 %	1.6 %	27.8 %
Google + account	76.3 %	86.5 %	24.6 %	0.0 %
Instagram account	56.7 %	38.0 %	58.7 %	0.0 %
<i>Panel B (mean values)</i>				
Debating	0.23	-0.06	0.33	-0.44
Socializing	0.05	-0.15	0.44	-0.28
Expression	0.07	0.08	-0.16	0.00
Entertainment seeking	0.26	0.34	-0.50	-0.14

characterized as “Debaters”, since they are highly involved in discussions, reading, and writing contributions in general. Despite the fact that the study of Brandtzæg and Heim (2011) classifies them in two separate categories, in our research it appeared as a single cluster that we name as “Socializers and Debaters”.

Finally, respondents forming the fourth segment (24.6 %) are not using so much social media, and they have account only in Facebook. They prefer to connect via their laptop computer and use SNSs sporadically, and therefore can be described as “Sporadics”.

Conclusions

In this paper, the usage of SNSs by Greek college students was examined. The rapid development of SNSs, the easiness of access through mobile devices, and their high level of penetration in young users (18–24 years old), makes them an indispensable part of marketing mix, that no marketer can ignore them.

Our findings contribute in shedding light to this direction, by providing evidence for the behavior of young consumers in an environment of extreme financial and economic crisis. The identification of four segments of users is in accordance with the relevant literature, (Brandtzæg and Heim 2011) and provides useful insights for

marketers to tailor more efficient social media marketing campaigns by targeting specific consumers, in order to increase brand awareness and their engagement. For example, “Recreationalists” can be attracted with entertaining content, such as funny images and videos, or with online games, through advergaming and gamification (Vlachopoulou and Dimitriadis 2014; p. 227). Another important finding is the penetration of SNSs in mobile devices and mostly smartphones, as two out of the four segments primarily use smartphones to connect in SNSs. These results also create new opportunities for marketers, especially during periods of crisis, where marketing budgets are reduced and high levels of ROI, like the ones achieved by social media marketing programs will be required (Santouridis et al. 2012).

Further research should focus on the interactions between segments and their members, and the way they affect their behavior and their patterns of usage of SNSs and the social capital accumulated for both users and brands within segments. Additionally, more variables can be included in our analysis, such as attitudes towards advertising in social media and social media marketing, the effect social media have on purchase decisions, etc., extending the scope of our present research. This survey should also be expanded to include other socio-demographic groups apart from students, in order to extend our understanding of SNSs usage to the entire population, and can also be conducted comparatively for longer periods of time, depicting the changes in technology, economy, and consumer behavior in a period of crisis.

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Personal Characteristics and Organizational Culture of Greek Banking Employees

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Abstract The purpose of the study is to examine the Greek bank employees' attitudes about the present organizational culture of the bank where they work and about their desired organizational cultures after 5 years. The sample consisted of 252 (51.7 %) males and 235 (48.3 %) females of different bank organizations. The results of the present study suggest that bank employees think present organizational culture as controlling while at the same time they would prefer more clan and adaptive types of culture in the organization. Also, ANOVA has shown that in terms of the attitudes about the present organizational culture only the variable of years of general experience as bank employees affect their attitudes, with employees with 1–10 years of experience grading the present culture as more hierarchical and less adaptive and participative. As far as desired organizational cultures are concerned men and women state different preferences, administrators would like it to be more hierarchical and new employees would like it more to promote participation and adaptation to the external environment and less orientated to the market.

Keywords Organizational culture · Bank employees · Human resource management · Organizational behavior · Employee relations

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Introduction

During 1980s the notion of organizational culture first appeared in the respective field, when marketing defined first the term of organizational culture, a total of beliefs and values which place clients in the center of the organization's thinking, policy and strategy (Tayeb 1996).

The aim of the specific study lies on the exploration of the bank employees' attitudes toward the current organizational culture in the bank in which they have been working and their attitudes toward the desired organizational culture. Also, there are also being examined the effects of personal characteristics of bank employees toward organizational culture.

Literature Review

On the basis of the respective literature review there arise four types of organizational culture which are going to be presented more analytically. First, there is the clan culture which has as central elements participation, agreement, social and friendly relationships, support and interest toward the employees, mutual trust, freedom of expression, team cohesion, interpersonal harmony, and promotion of employees' development (Desphande and Webster 1989; Beer et al. 2011).

Another type of organizational culture is the hierarchy culture. The main features of hierarchy culture are internal formality, hierarchy, rules and procedures, with the upper aim of controlling and predicting the behaviors of both individuals and teams (Ouchi and Price 1993; Damanpour et al. 2009).

Also, there is the type of adhocracy culture which has as an upper target the increase of its adaptation through the constant exploration and information about the external environment, changes, and the organization's adaptation to them, the freedom of initiatives, risk taking, creativity, success, competition, experimentation, and the creation of unique and new products (Richard et al. 2009; Kaur 2015).

Furthermore, there is market culture, which places the emphasis toward the accomplishment of specific targets with main characteristics (Richard et al. 2009).

However, in reality every organization has different elements from each type of culture, some of which functions in a complementary way, while others are more contradictory in a total that aims at the maintenance stability and control without losing innovativeness and flexibility and the equilibrium between internal and external organization.

Research Methodology

The sample of the present study included 487 Greek bank employees. The questionnaire used here is the OCAI questionnaire (Organizational Culture Assessment Instrument) (Cameron and Quinn 2006) which examines four possible organizational cultures: Clan culture (A) which is based on cooperation, Adhocracy culture (B) which is based on creation, Market culture (C) which is orientated to competition, Hierarchy culture (D) which is based on control.

In total, the questionnaire comprised six questions, each one of which has four answers, one for each type of culture. The participants of the study are asked to give points for every question in all of four possible answers. More specifically, each question is sum accumulates 100 points, which should be distributed in the four possible answers that correspond to each type of culture. The following table presents the ways through which the questionnaire was processed (see Table 1).

For the statistical analysis of the questionnaire Cronbach’s α was initially used for the total of the scale and for every factor separately in order to evaluate the reliability of the questionnaire. Next there were used the descriptive statistics of the analysis such as the mean and the standard deviation in order to define not only the present but also the future predominant culture in the banking organization.

Also, in the statistical analysis gender, age, marital status, educational level, the position that the employee holds in the organization, the years of general experience as a bank employee, the years of working experience in the specific bank and the years of experience in the specific position in the specific organization were used as independent variables, in order to detect if there are statistically significant differences among the bank employees’ attitudes for the organizational culture on the basis of these variables. On the basis of the evidence given above there are introduced the following research hypotheses:

H0: The independent variables do not differentiate the attitudes that the bank employees hold about the bank’s organizational culture, thus there are no statistically significant differences observed in the organization culture for each one of them.

Table 1 Ways of processing questionnaire

Variables	Questions
A Present	$(1A_{\text{present}} + 2A_{\text{present}} + 3A_{\text{present}} + 4A_{\text{present}} + 5A_{\text{present}} + 6A_{\text{present}})/6$
B Present	$(1B_{\text{present}} + 2B_{\text{present}} + 3B_{\text{present}} + 4B_{\text{present}} + 5B_{\text{present}} + 6B_{\text{present}})/6$
C Present	$(1C_{\text{present}} + 2C_{\text{present}} + 3C_{\text{present}} + 4C_{\text{present}} + 5C_{\text{present}} + 6C_{\text{present}})/6$
D Present	$(1D_{\text{present}} + 2D_{\text{present}} + 3D_{\text{present}} + 4D_{\text{present}} + 5D_{\text{present}} + 6D_{\text{present}})/6$
A After	$(1A_{\text{after}} + 2A_{\text{after}} + 3A_{\text{after}} + 4A_{\text{after}} + 5A_{\text{after}} + 6A_{\text{after}})/6$
B After	$(1B_{\text{after}} + 2B_{\text{after}} + 3B_{\text{after}} + 4B_{\text{after}} + 5B_{\text{after}} + 6B_{\text{after}})/6$
C After	$(1C_{\text{after}} + 2C_{\text{after}} + 3C_{\text{after}} + 4C_{\text{after}} + 5C_{\text{after}} + 6C_{\text{after}})/6$
D After	$(1D_{\text{after}} + 2D_{\text{after}} + 3D_{\text{after}} + 4D_{\text{after}} + 5D_{\text{after}} + 6D_{\text{after}})/6$

H1: Independent variables differentiate the attitudes that bank employees hold about organizational culture, thus there are statistically significant differences observed in the organization culture for each one of them

The statistical package (SPSS) for the social sciences was used to analyze the data that were acquired through the distribution of the questionnaires. Descriptive statistics were applied in order to gain information about the employees' attitudes for organizational culture and demographic variables. For further statistical analysis of the data and the examination of the hypotheses introduced above there were conducted various ANOVA dispersion analyses in terms of the total of the dependent variables of the questionnaire (A_{present} , B_{present} , C_{present} , D_{present} , A_{after} , B_{after} , C_{after} , D_{after}) and independent sample T tests.

Results

For the control of reliability of the results and the OCAI questionnaire Cronbach's α was estimated. Cronbach's α for scores over .7 suggests that the questionnaire and the results are reliable whose grade of reliability is higher as higher Cronbach's α is (see Table 2).

On the basis of the high reliability that derived from the analysis above, arose 8 variables (4 for the present types of cultures and four the desired future types of culture after 5 years) in order to conduct further statistical examinations in order to find the predominant types of culture. In terms of the data presented above it becomes obvious that for the vast majority of the participants the predominant culture in the bank that is under examination is characterized by control. On the contrary, on the basis of the measures that concern the future, the majority of the employees prefer Adhocracy Culture and Clan Culture. Also, T-tests have shown that there are statistically significant differences between the present organizational culture in relation with the future desired culture (Table 3).

In an attempt to sum up the findings of the table above, it is evident that bank employees desire for the clan culture to be encouraged in the future so that in the future there will be greater levels of participation in the organization in comparison with the current situation. Similarly, participants express their desire for adhocracy culture to be also encouraged in the future. On the other hand, on the basis of the participants' own attitudes there is a desire for market culture to be discouraged, so that levels of competitiveness are increased. Similarly, their desire for the future is also to reduce hierarchy culture within the organization. Also, it seems that there are no gender differences in the type of culture men and women choose or their attitudes about the presence of organizational culture of the bank.

Similarly to the findings for the current organizational culture, the years of employment in the specific position does not have a significant effect on the future desired type of culture. On the other hand, there are statistically significant differentiations in terms of the future desired types of culture on the basis of the years of employment in the specific organization.

Table 2 Statistical tests for Cronbach’s α

Type of organizational culture	Cronbach’s alpha for the present	Cronbach’s alpha for the future
A Clan culture	0.808	0.702
B Adhocracy culture	0.759	0.723
C Market culture	0.855	0.855
D Hierarchy culture	0.953	0.810

Table 3 Differentiation in cultures between present and desired situation

		Mean	Standard deviation	P
Pair 1	A Present	19.5773	7.41509	0.000
	A Desired	25.4004	5.09562	
Pair 2	B Present	17.7361	6.33373	0.000
	B Desired	25.7478	4.69504	
Pair 3	C Present	23.4873	7.76246	0.003
	C Desired	24.2231	7.37345	
Pair 4	D Present	39.1923	20.47659	0.000
	D Desired	24.7091	8.48866	

Discussion—Conclusions

The main aim of the study presented here was to examine and analyze the attitudes of Greek bank employees about the present prevailing organizational culture in their organization and at the same time their desire for the future predominant culture after 5 years. It is evident that the main characteristic of the predominant present culture of the bank organization is control while at the same time the intense desire of the majority of the participants is to have more clan and adhocracy culture in the future (Cameron and Quinn 2006).

Also, although there are no significant differences in terms of the effect that gender (Belias and Koustelios 2013a, b), age, educational level, position that they hold and their experience of employment in the same bank. This finding is different from those seen in Hofstede (1991). As far as desired culture for the future is concerned it seems that in the first position of preferences women place clan culture while men place adhocracy culture, in the second position women place hierarchy while men place clan culture. In this way, it could be supported that women express a higher need for hierarchy and stable procedures than men who place the same type of culture in the last position. Moreover, while men in their third preference place market orientated culture which is characterized by competitiveness.

Taking all the above findings into consideration, it becomes apparent there are no significant differences in terms of the attitudes that bank employees hold about the present organizational culture of the organization in which they work. No independent variables seem to affect these attitudes except for the total years of their

general experience as bank employees as it is characterized as more controlling for those that are relatively new in the field of employment.

However, further studies are needed to elucidate other factors that may influence an individual's perceptions of organizational culture at the organizational level such as business strategy (Antoniadis et al. 2013; Trivellas et al. 2007), innovation (Trivellas and Santouridis 2009; Trivellas and Dargenidou 2009), learning (Dekoulou and Trivellas 2015), IS (Trivellas et al. 2006), quality, (Trivellas and Santouridis 2014), knowledge sharing (Trivellas et al. 2015), and at the individual level of analysis, e.g., marital status, psychological contract (Antonaki and Trivellas 2014), motivation, emotional intelligence, and job-related stress (Kakkos et al. 2010; Trivellas et al. 2013a, b). Such studies should take place both at local and national level, so that the bank field in Greece is improved, becomes more profitable, and ensures the prevention of turnover.

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Sustainability, Social Marketing and Host Attitudes About Tourism in the City of Larissa

Panagiotis Trivellas, Nikolaos Kakkos, Labros Vasiliadis and Dimitrios Belias

Abstract This paper builds on the Social Norm Approach (SNA) which emphasises the role of norms in shaping attitudes, intentions and behaviour, in order to ground a socially desired behaviour change favouring, for example sustainability. Indeed, environmental sustainability may be regarded as a collective challenge that can only be achieved if a sufficient number of residents cooperate. Hence, the community plays a crucial role to effect lasting changes towards a more ecocentric behaviour. However, higher levels of awareness and knowledge of environmental issues among the general public have not led to the implementation of actual sustainable practices. This study aims to investigate the association of ecocentric attitude with the costs and benefits of urban tourism development. Drawing from a sample of residents in the city of Larissa (Thessaly region), ecocentric attitude shapes the profile of tourism development, recognising higher economic and social benefits, as well as higher costs on natural and cultural environment.

Keywords Sustainability · Social marketing · Green marketing · Social normalisation · Greece

Introduction

Several authors have argued that green marketing could play an important role in encouraging more sustainable behaviour and consumption (Peattie and Peattie 2009). Yet, Peattie and Crane (2005, p. 357) note the disappointing performance of green marketing due to ‘misconceived’ and often ineffective practices leading to

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consumer criticism and cynicism. These practices, may explain Grant's (2007, p. 200) 'greenophobia', where green products are seen as more expensive, less effective and for 'weird' people.

Marketing studies on green consumers' behaviour and consumption have been influenced by theories from psychology. The Theory of Reasoned Action (Fishbein and Ajzen 1975) links attitudes to beliefs about behaviour and evaluation of outcomes. Attitudes are the antecedents of intentions, which are, in turn, seen as determining behaviour. The Theory of Planned Behaviour (TPB) builds on the previous theory by adding 'behavioural control' as a driver of intention and action (Ajzen 1991); it explains behaviour in terms of knowledge, attitudes, perceptions of norms and intentions. The Theory of Interpersonal Behaviour is based on beliefs about behaviour and outcomes where four more drivers are added namely, social factors, affect (emotion), facilitating conditions and habits (Triandis 1977).

While compelling in some ways, the above models are belied by the 'attitude-behaviour' and 'intention-behaviour' gap or 'green gap' suggesting that pro-environmental attitudes are not always reflected in sustainable behaviour. For example, although 30 % of consumers claim to be very environmentally concerned, this does not necessarily translate into green purchases (Young et al. 2010). In Bamberg and Moser's (2007) meta-analysis, intentions accounted for only 27 % of the variance in the pro-environmental behaviour reflecting so, an intention-behaviour gap. Similarly, numerous studies report only modest correlations between environmental values, attitudes, intentions and actual behaviour (e.g. Jansson et al. 2011). Even very ethically conscious consumers were found to be inconsistent in their purchases (Szmigin et al. 2009). By implication, Triandis' (1977) model would be of limited use, due to being difficult to accomplish behaviour changes by intervening and changing social factors and habits; thus, social policy resorts to the provision of information to be able to shape attitudes and then, change behaviour.

Consumer adoption of sustainable behaviours is influenced by perceptions of what is normal (or not); some sustainable behaviours are not adopted because they are seen as not normal (i.e. relevant only to a niche group of 'green consumers'), while less sustainable ones are difficult to change, due to being seen as normal. Nevertheless, findings show that social views of what is normal (or not) change over time (Rettie et al. 2014). Rettie et al. (2014) use the term 'social normalisation' to describe a social process in which activities and products gradually become accepted as mainstream and normal, while other activities may be 'denormalised'. For example, taking shopping baskets or bags to the shops had been normal in the 1960s. Later, it became less normal as shops provided plastic bags. Recently, in some places, to take one's own bags has become normal again. This forms a cycle in which a practice went through a process of denormalisation, followed by a more recent period of social normalisation. Also, recycling has become normal nowadays. Importantly, such processes are culturally specific; in Canada, waste recycling underwent social normalisation earlier than in the UK and it is yet to be normalised in Mexico.

The paper builds upon Rettie et al.'s (2014) qualitative research where consumers are found to assess green marketing initiatives, products or behaviours in terms of what they consider as normal, everyday and mainstream. It shares the emphasis on norms found in the TPB and the emphasis on social systems employed by the social ecological perspective; yet, it uses these concepts within the sociological context of practice theory (Shove 2003) and social normalisation. In line with Rettie et al. (2014), this study aims to advance a new role for sustainability marketing (see discussion). By doing so, it contributes to Peattie and Peattie's (2009) agenda too, where green marketing has been seen ineffective while making meaningful progress towards sustainability, requires solutions other than just the development of new products and product substitutions.

Theoretical Background

Reviewing various studies in social psychology emphasising the role of norms in shaping attitudes, intentions and behaviour, two distinctive types of norms: descriptive norms, describing simply the behaviour of the majority and also, injunctive norms referring to what is the right thing to do or what people ought to do (Berkowitz 2004) can be identified. Thus, there are two senses of 'norm': norm as average (i.e. what most people do) and norm as normative (i.e. what people ought to do). The social norms approach (SNA) combines both descriptive and injunctive norms and attempts to influence behaviour by communicating information about what most people do or think that people should do (for reviews see Berkowitz 2004; Burchell et al. 2013). The influence of descriptive social norms is increased by the use of the appropriate reference group (Berkowitz 2004), those one most identifies. SNA studies have targeted green behaviours including recycling, conservation, hotel towel reuse, food waste and energy consumption.

The term 'normalisation' has been applied to social change and the increased prevalence of attitudes and practices. For instance, it has been used to describe the way in which behaviours previously understood to be deviant such as say, drug use becomes more widespread. Initially, 'normalisation' used to describe the process and principle of social inclusion for previously excluded groups, and later, the emergence and adoption of new technologies and work practices in health care. In practice theory (Shove 2003), socially shared practices are seen as stabilising and shaping individual actions, whereas social change is understood in terms of the evolution of practices rather than one's individual choices. Jensen and Wagoner (2012) described a cyclical model of social change and normalisation where new ideas, say, new norms, go through the communication, implementation, public engagement and deliberative phases; they may be also rejected and reformulated, leading to further cycles.

Research Design and Statistical Analysis

The sample consisted of residents in Larissa (Central Greece), and although a convenience sampling approach was adopted, it was verified for the representation of demographic variables such as age groups in alignment with the total population. A self-administered structured questionnaire was developed to measure ecocentric behaviour, costs and benefits of tourism development on 7-point Likert type scales, based on established and validated constructs on the relevant literature (Liu et al. 1987; Akis et al. 1996; Teye et al. 2002; Gursoy et al. 2002; Gursoy and Rutherford 2004). A total of 102 valid questionnaires were collected with a response rate of about 68 %.

Principal Component Analysis (PCA) was performed to test the latent structure of ecocentric attitude scale, as well as the costs and benefits constructs. The uni-dimensionality of ecocentric tool was confirmed, while three components emerged for perceived benefits (economic, social and cultural benefits), and two factors for perceived costs (natural environment and cultural, economic and social) of tourism development. Cronbach’s coefficient alpha was calculated to test internal reliability of each sub-dimension, and all scales exhibited well over the minimum acceptable reliability level of 0.7.

To investigate the association between ecocentric attitude and tourism development costs and benefits, correlation analysis was conducted. Findings reveal that ecocentric attitude is strongly and significantly related to economic ($r = 0.352$,

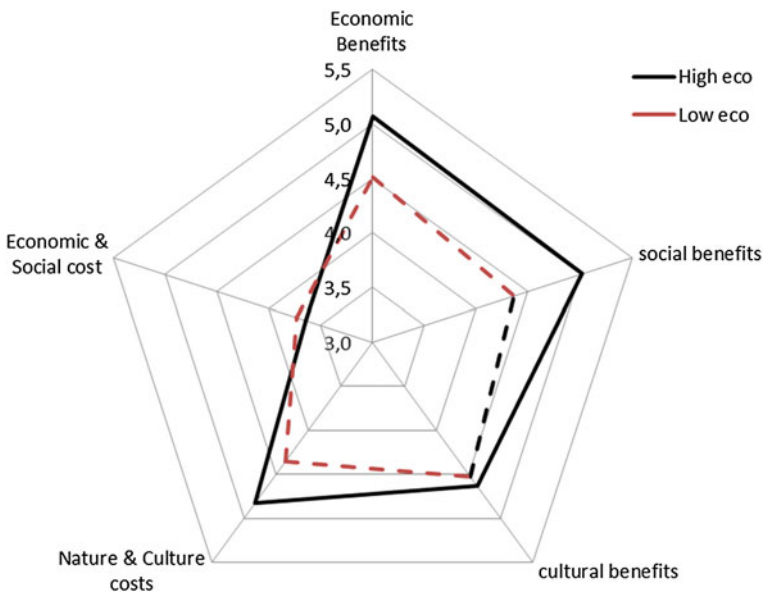


Fig. 1 Tourism development profiles of perceived costs and benefits, by high and low ecocentric residents

$p < 0.001$) and social ($r = 0.372$, $p < 0.001$) perceived benefits of tourism development as well as costs ($r = 0.253$, $p < 0.01$), for natural environment and local culture.

Besides, t-test analysis was used to assess the statistical significance of the differences between residents' perceptions with high and low ecocentric attitude. Figure 1 illustrates that an identical pattern with this revealed by correlation analysis emerged. Statistical significant differences were detected between the group of residents with high and low ecocentric attitude, for economic benefits, social benefits and costs associated with natural environment and culture.

Discussion and Conclusions

This study aims to investigate the association between ecocentric attitude and the perceived costs and benefits of tourism development in the city of Larissa. Drawing from a sample of 102 residents, ecocentric attitude proved to be strongly related to higher economic and social benefits of tourism development, as well as with higher cost for the natural environment and cultural context.

Gursoy et al. (2002) and Gursoy and Rutherford (2004) concluded that locals with higher ecocentric attitude are mainly concerned about social costs and benefits in addition to economic benefits, while not so about cultural costs and benefits. In particular, Gursoy and Rutherford (2004) verified a positive effect of ecocentric attitude on social costs, and a negative impact on both economic and social benefits. Our findings are in line with the foregoing two studies' conclusions, that residents with high ecocentric values highlight the economic and social benefits of tourism development. This suggests that locals perceive tourism development as a positive facilitator for sustainability in the economic and social context by providing the necessary financial resources, and raising public awareness. Yet, the relationship between ecocentric attitude and costs stemming from tourism's impact on natural environment and culture in this region and recognises the current environmental footprint of past strategies and policies for tourism development. The research finding that conceptions of normality constrain behaviour is consistent with the theories of conformity and particularly with the SNA (Berkowitz 2004; Burchell et al. 2013), which uses marketing techniques to communicate descriptive statements of what most people do to influence behaviour. Recognition of the role of conceptions of normality creates the opportunity for marketing to deliberately shape these ideas in ways that promote sustainable behaviours as normal rather than as green. Having acknowledged the above, note that the role of marketing has traditionally been among other things, to change consumer conceptions, to position and reposition brands and to build brand values and images (Antoniadis et al. 2014). Specifically, marketing could, first, encourage consumer adoption of sustainable behaviours and practices by positioning them as normal; second, encourage consumer abandonment of unsustainable activities by repositioning them as no longer

normal. In fact, marketing could help to gradually change consumer views until a point where the ecocentric behaviour is seen to be, normal and mainstream.

However, a key reason for the disappointing performance of green marketing is that many green products are positioned as different from the norm; marketing has tended to emphasise green credentials, inadvertently positioning green products and behaviours as relevant to a niche group of green consumers only, rather than mainstream consumers. It is tempting to launch green products and brands on a platform of differentiation that enables premium pricing (cf. green harvesting Peattie and Crane 2005). Yet, this strategy is short-sighted and may damage brand values in the long run as evidenced by the high consumer cynicism found. Positioning a product as the ‘new normal’, rather than as a green alternative, may forestall consumer cynicism and secure a larger market share. Manufacturers who supply mainstream (Serdaris et al. 2014) less sustainable products as well as more sustainable ‘green’ alternatives can be seen as lacking in commitment to the green goals they espouse. To accelerate the adoption and normalisation of new green products, they should consider removing less green alternatives.

In a similar vein, green marketing should also consider internal marketing and HRM to facilitate employee ecocentric behaviour (Polychroniou 2008, 2009).

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Led to Change or Change to Lead?

Dimitrios Mitroulis and Fotis Kitsios

Abstract Economic crisis has enhanced firms with uncertainty and suffocation causing lack of innovation and negative organizational performance. Moreover, it has caused environmental dynamism, involving continuous changes in the market, affecting organizations' performance negatively. On the other hand, firms try to innovate and ensure their survival. However, organizations have to change their strategy and implement innovation so that they gain competitive advantage and achieve better performance and sustainability. Could leadership be a critical factor of success for this achievement? The purpose of this study is to show the importance of leadership in a constantly changing environment and how it could help the organizations to change, successfully, towards a sustainable performance. The evaluation of the theoretical framework has been measured by a questionnaire, following a 5-point Likert type scale.

Keywords Innovation management · Organizational performance · Transformational leadership · Environmental dynamism · Sustainability

Introduction

Evolution is considered to be of great importance for the organization's success and growth. The external environment dynamism offers opportunities and threats which could affect the organizational performance either positively or negatively. In order to be successful, firms should create dynamic and innovation capabilities utilizing their resources and managerial implications. In this manner, organizations should achieve a constant routine of adapting to the changes that arise. Change is an ongoing process. For a successful organization, a change is implemented, leadership plays a crucial role. It is a leader's duty to manage the human resources and make their efforts meet their best, possible, results, in favor of change. Furthermore,

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change management correlated the importance of healthy growth and sustainability for the firm's performance. In today's business world, successful change, in any organization, is impossible without the active participation of management and the functional impact of leadership. Changes are affected by both external and internal factors. The internal factors are, in fact, the management style and leadership that influence the process of change. On the other hand, the human resources of organizations are at the same time an essential factor in organizational change and, the biggest obstacles to achieve change. Therefore, the important element for a successful change in any organization is "Leadership". Leaders and top management are those who keep the process of change going on and maintaining the operational reliability of the organization (Wang and Poutziouris 2010). Change has become a way of life for the organizations, their employees, and managers at the same time. With organizational change at this high rate, the ability to identify, cope with, and overcome difficulties on organizational change is, at this time, considered to be a requirement of an effective manager (Northouse 2007).

The paper is organized as follows. The "Theoretical Background Methodology" section includes the methodology used for the creation of the literature review of the corresponding research. The "Literature Review" section includes the literature review. The "Measurement and Questionnaire" section includes the measurement and questionnaire of the survey. Finally, in the "Conclusions" section conclusions are derived and future research is proposed.

Theoretical Background Methodology

According to Webster and Watson (2002), a complete review covers relevant literature on the topic and is not confined to one research methodology, one set of journals, or one geographic region. For the purposes of this paper, we systematically reviewed a lot of empirical articles, creating a useful literature review. Providing a well-based literature foundation to the topic of this research, the following three steps were adopted. The proposed literature review process consists of (1) Inputs, (2) Processing, and (3) Outputs (Iivari et al. 2004).

Identification and Selection of Publications

In order to recognize the published work concerning the relationship among market dynamism, transformational leadership, innovativeness, and organizational performance, a list of articles has been selected starting from the year 1993, until 2014, using three databases "Scopus," "Web of Science," and "Google scholar" searching via several combinations of the selected keywords. The keywords were "innovation

management,” “organizational performance,” “transformational leadership,” “environmental dynamism,” “sustainability.” A list of publications has been made and the summaries of them were read. Some of the studies have been rejected due to their irrelevance of the topic. Other articles, which contained relevant abstracts, were discarded because the full text of the paper was not available from the publishers. Furthermore, some more articles were rejected due to not having relevant context with the research. The rest publications were listed and read, and the final selection of the articles used in this literature review was done using the following criteria:

- The article had to be published in English.
- The publications should be in recognized peer-reviewed journals, conference proceedings, articles published in books, book chapters.

Finally, 58 articles were fulfilling all the above-mentioned criteria, while the rest were rejected. These papers were studied, summarized, and categorized as presented below.

Literature Review

Transformational Leadership and Innovation Management

Researches about leadership examine it in a variety of organizational settings and environments. Concerning this literature review, there has been identified that leadership affects followers’ development and engagement in organizational culture and firm’s innovativeness (Duygulu and Ozeren 2009), employees’ satisfaction (Casimir and Ng 2012; Papalexandris and Galanaki 2009) and motivation (Papalexandris and Galanaki 2009). It is a widely accepted that leadership has a key role in fostering innovation and creativity in organizations. The leadership style is an important capability that influences innovation (Sarros et al. 2008; Aragón-Correa et al. 2007). More specifically, transformational leadership is a preferred style for inducing creativity and innovation by developing and inspiring followers towards the improvement of the organizational success (Sarros et al. 2008; Howell and Avolio 1993). Transformational leadership is closely related to innovative leadership styles including: innovation championing (Howell et al. 2005) and change-oriented leadership (Yukl 1999). Innovation champions can make a great contribution to innovation in most of the organizational stages (Howell et al. 2005). Change-oriented leaders influence culture, structure, and management systems in a manner that organizations could create capabilities and intelligence to adapt in a changing environment by creating an innovative organizational context (Yukl 1999).

Transformational Leadership and Organizational Performance

Transformational leaders are capable of influencing their followers to make extra effort, due to their commitment to the leader, their intrinsic motivation, the level of their development, and the importance of having a clear sense of purpose or mission that drives them to do extremely well, further than a standard performance (Öncer 2013; Odumeru and Ogbonna 2013; Yukl 2010; Bass et al. 2003; Howell and Avolio 1993). Additionally, followers are also prepared to take on leadership roles (Bass and Avolio 1993). Transformational leaders inform their followers about the existing problems of the organization and present a clear vision of how better the organization could be. Transformational leadership might have a positive impact on followers' ideals and values, for instance liberty, justice, peace, and equality. There are four factors of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Öncer 2013; Odumeru and Ogbonna 2013; Bass and Riggio 2012; Bass et al. 2003; Bass and Avolio 1993). Moreover, attempts have been made to analyze the effects of transformational leadership theory on a variety of either financial or quality measures for the organizational performance, among different organizational sectors. For instance, financial institutions and banks (Xenikou and Simosi 2006; Geyer and Steyer 1998; Howell and Avolio 1993), the hotel industry (Chiang and Wang 2012; Patiar and Mia 2009), large corporations (Agle et al. 2006; Ensley et al. 2006), education sector organizations (Paracha et al. 2012; Arnold et al. 2001), nonprofit organizations (Chung and Lo 2007; Langley and Kahnweiler 2003), and SMEs (Wang and Poutziouris 2010; Lo et al. 2009; Yang 2008; Hood 2003; O'Regan et al. 2005; Ogbonna and Harris 2000). Additionally, Valdiserri and Wilson (2010) examining the relationship of transformational leadership with organizational performance, organizational success and profitability, and employees performance presented a positive relationship. Behery (2008) support the positive relationship between transformational leadership and organizational performance, confirming a better communication and knowledge distribution among the employees, when transformational leadership style was used, increasing employees effectiveness, satisfaction and general firm's effectiveness and productivity.

Environmental Dynamism and Organizational Performance

Environmental dynamism describes the rate of uncertainty and unpredictability of the changes in the business' external environment. When an organization faces a high-environmental dynamism, top managers and leaders are obliged to make rapid decisions. Firms should be able to create new or utilize their dynamic capabilities, formulating a flexible management strategy. Environmental dynamism is well bonded with the speed of product changes, the changing frequency of customer's preference

and the organizational environment. Additionally, it is related to the degree of instability and turbulence of crucial market, and organizational conditions and generally technological, economic, social, and political forces. Many authors agree that organizational performance is sensitive in turbulent and unpredictable environments (Akgün et al. 2008; Nadkarni and Narayanan 2007). Changes in the external environment enhance firm performance. In this manner, competitive strategy and competitive environment are closely related to environmental dynamism (Yu 2012; Lechner and Gudmundsson 2012; Awang et al. 2010). Organizational strategies such as product differentiation and customer orientation are also considered as factors influencing performance and offer a competitive advantage, operating in a dynamic environment, creating opportunities that have an impact on organization strategy which affects organizational performance and competitive advantage (Verdu-Jover et al. 2006). Managers dealing with strategic implementations should always have in mind the environmental threats and opportunities, connecting them with internal strengths and weaknesses of the organization in order to enhance its capabilities. Finally, firms should introduce a decision process leading to a sustainable performance and adaptability to the changing demands of the new environment (Yu 2012; Sirmon et al. 2007; Teece 2007).

Innovation Management and Organizational Performance

Innovativeness is defined as the process of identifying creative, unusual, or novel solutions to problems and certain needs (Morris et al. 2007). These solutions are new processes, new products, or new services. Innovativeness has been acknowledged as a factor of significantly increasing organizational performance (Avlonitis and Salavou 2007; Hult et al. 2011). Management of innovation is the core means to provide differentiation and develop superior competitive strategies (Yang 2011; Jimenez et al. 2008; Salavou et al. 2004; Tidd 2001; Avlonitis and Gounaris 1999; Han et al. 1998). Organizational innovation is positively bonded with market share growth and overall business performance with a significant relationship (Kumar et al. 2011; Jimenez and Sanz-Valle 2011; Hilmi and Ramayah 2008; Rauch et al. 2009; Tajeddini 2010; Cepeda and Vera 2007; Avlonitis et al. 2001).

Measurement and Questionnaire

A mixed method approach is employed with the use of both qualitative (i.e., personal interviews with CEOs) and quantitative techniques (i.e., survey instrument) following a structured questionnaire. The mixed method strategy by combining the use of qualitative and quantitative techniques was selected to enrich the rising data.

The population for this study consists of Greek SMEs from the sector of technology and IT service. The study focuses on this sector because technology has a

great impact on innovation and growth of Greece. In order to evaluate the theoretical research, a questionnaire has been created. Based on the findings of the literature review, the questionnaire consists of 29 items which use a 5-point Likert scale. The questions used, correspond to the scales used by various authors in other studies, namely

The questions to measure the “Environmental Dynamism” are those of the scale developed in the literature and appropriately modified, consisting of four questions.

The questions to measure the “Transformational Leadership” are those of the scale developed in the literature and appropriately modified, consisting of three questions.

The questions to measure the “Innovation management” are those of the scale developed in the literature and appropriately modified. The total number of questions is 9.

To measure the “Organizational Performance”, 13 questions were included in the questionnaire.

The questionnaire has been examined by a group of experts. It is addressed to general managers or marketing directors. However, this is an ongoing research which until now does not have enough evidence to prove its hypotheses and the wanted results.

Conclusions

In this paper, we tried to conceptualize the relationship between the environmental dynamism, innovation management, transformational leadership, and organizational performance. This study aims at generating empirical evidence for the relationships among market dynamism, leadership, innovation management, and the influence of these factors on organizational performance. The findings will significantly assist leaders of SMEs to become more effective, creating an innovative adaptability mechanism in their firms which could finally improve organizational performance. Thus, the findings of this study could help organizations to develop more effective leaders. As a result, it could help leaders to create a prosperous environment, considering the dynamism of the external environment, in order to help the organization to change and adapt. As for the internal environment, leaders have to connect, coach, mentor, and develop the human resources. Productively challenge their thinking, strategy, and behavior through the lens of innovation. Broaden the unique human capability to create, innovate, and envisage alternative futures, fostering an optimal creativity and innovation context, internally, and consider competitive, global, and futuristic dynamics in an integrated manner. Innovation stands at the transformative crossroads of internal, collaborative creativity and external, customer-focused needs, creating a culture of innovation for a sustainable performance.

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Part III

3rd Destination and Cultural Marketing Symposium: Trends and Future Outlook

Organized by: Androniki Kavoura

Technological Educational Institute of Athens, Greece, Department of Marketing, Greece

Description:

This symposium will explore innovative tools and approaches that promote destinations and cultures to potential demographic groups. It will offer an insight on the ways the economic and sociocultural benefits of travel could be advertised and communicated effectively. Themes covered in this symposium include but are not limited to: tourism and city/state or country marketing and branding, heritage management, historic and world heritage marketing, chamber of commerce and governmental organization marketing, alternative tourism, eco-tourism and agro-tourism, religious and faith tourism, nonprofit marketing, the role of social media, and e-marketing in travel.

An Innovative Promotional Tactic to Enhance TV Viewership Using Social Media

Konstantinos Danias, Angelika Kyrimi and George Marmarokopos

Abstract Nowadays, the use of mobile devices in tandem with television is a common place for media consumers. The main motive behind this behavior is the never-ending human desire for connection, interaction, and communication. They alternate between different media “broadcasting” devices to enhance their content viewing experiences and enrich their social interactions. Social media and video viewing media are some of the main platforms users employ for sharing and expressing, stating their opinion and posting. The purpose of this essay is to shed light to the needs that lead users to be always connected to social media and explain how the theory of planned behavior applies to our expectation for their actions. Moreover, as surveys bear out that internet users multitask, we are giving from our working experience an innovative path for using media in a creative way and of course vent for further research.

Keywords Digital media · Multi tasking · Marketing innovation · Media strategy · Theory of planned behavior

Media Reality Today

What mentioned above, describes not only a, global, everyday reality. It also describes what takes place in the daily life of Greek users. People tend to spend more and more time on the web and as surveys bear out the daily average time spend is almost 138 min. More specifically, the average daily time spent for people

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between the ages of 18–24 (inclusive) increases by almost an hour more (189 min), something that indicates more clearly that a large portion of the digital consumption occurs through “portable” devices. 39.8 % of users use laptops to connect, 36.8 % use a Smartphone to be constantly online, 13.2 % are connected via tablets and just 0.8 % via Smart TVs (Focus Bari Web ID survey, 2nd Wave 2015).

Literature Review

Social media came in our lives a few years ago and they are here to stay! Why? The main reason behind that lasting new guest is explained by Maslow’s theory (A Theory of Human Motivation, Maslow 1943). People have needs, the hierarchy of which is predefined. The third most important category of needs, after the two groups of basic needs and psychological ones, is described as our “social needs.”

- Our need for friendship, family, sexual intimacy, connection, and belonging as well as our need to love and to feel loved.
- The need to receive attention, feel confidence, the need to feel a sense of achievement as well as gain respect of others.
- The need to feel unique, to be heard as an individual, and to share things with others; things that make us feel proud.

In other words, (considering also the fact that digital safety, security, and web privacy conditions today have radically improved) users feel comfortable to share information. Social media are also capable of covering and overcoming issues of virtual self-esteem. Bearing in mind the above, it would not be an arbitrary conclusion to state that the success of social media platforms, such as Facebook, is largely based on the fact that they cover at least three out of five of the most important human needs, as described by Maslow’s Hierarchy of Needs (A Theory of Human Motivation, Maslow 1943).

Moreover, social media allow us to take stats and insights in order to measure users’ attention levels. The level of user attention, as measured by agencies, goes beyond any expectation; Social media platforms after all, have the power to nurture the ego in either concealing or revealing ways (Why Social Media Attention Seeking Drives Traffic, Jeff Bullas 2012). It is an addictive and compelling loop, which constantly drives users to write and share texts or images, to like posts, brands, and to consume audio and video content. This digital behavior and interaction requires a high level of attention and engagement.

We should continue asking ourselves what else makes us spend so much time on social media. Adrian Chan’s description, from Gravity 7, of the *Three Mediums’ Model* (Gravity7: Social Interaction Design By Adrian Chan 2013) will give us a great perspective on the behavioral spectrum on the digital social environment.

1. Mirror Mode:

Watching oneself from a distance. A user follows his or her own profile that reflects what he/she is

2. Surface Mode:

Consuming content of any kind from any available screen. A user is devoted to the screen; the medium that serves us that content

3. Window Mode:

Chatting, texting with friends, we communicate through social media. Social media are a window of interactions and social possibilities

People hold behavioral beliefs that lead them to expressed behaviors. Those beliefs connect given behaviors to outcomes. As Icek Ajzen's Theory of Reasoned Action (Ajzen 1980) has declared, each and every one of those outcomes follows subjective norms. Now, we can quite well predict consumer intentions and behaviors and have a clearer view of our consumer target's behavioral change attempts. (The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research, Blair H. Sheppard, Jon Hartwick and Paul R. Warshaw, *Journal of Consumer Research*, Vol. 15, No. 3 1988).

Icek Ajzen's Theory of Reasoned Action, can predict the performance of any voluntary act, unless one's intent changes prior to one's performance or unless the one's intention measure does not correspond to the behavioral criterion in terms of action, target, context, time frame, and/or specificity.

Consequently, a lot of behaviors under volitional control could potentially set serious problems of campaign execution, user targeting, etc. But, in order to accommodate social media users' behaviors we have to go after a theory that has a low or even limited volitional control (From intentions to actions: A theory of planned behavior 1985).

First and foremost, behavior control is one of the most important things to mention. As a result of having all the necessary information, skills and abilities, externalizing some internal factors can definitely affect the performance of a behavior. In our case people can easily act the way they intent to perfectly perform the indented behavior.

Second, our case perfectly matches the perceived behavioral control Theory of TPB as well as Albert Bandura's work on self-efficacy. People in social media believe that they have control over all aspects of themselves and thus are capable of performing a given behavior.

We are now in the digital era where internet users constantly and rapidly increase their penetration in social media. The number of social media platforms emerged and launched over the last years and since 2005 have educated the majority of internet users. So, especially in countries with heavy social media users, who spend more than 2 h a day in those platforms, their digital skills, abilities, and gained experience, have turned them over time in digital/social media natives. Therefore, and always in accordance to the TPB, intentions can be predicted from attitudes, subjective norms and perceptions of behavioral control (From intentions to actions: A theory of planned behavior 1985).

Social Media in Number

Speaking of Social Media arises the need of analyzing users' behavior on those platforms. In Greece, Facebook is not only the platform that attracts the majority of internet users showing a very high penetration in that target audience. It is also the platform that dominates, in those virtual communities, the country 1 out of 2.

Greek users have an active account on Facebook while that percentage is even higher for younger target groups—68.8 % for the 18–44 age group. As a result, people eagerly spend more than 77.7 min per day on Social Media platforms and Facebook can definitely be very proud for its success in the Greek market as it has gain more than 50.10 % of the internet Greek users (Focus Bari Web ID survey, 2nd Wave 2015).

Furthermore, that survey also highlights very important statistics for future consumers—15.1 % of children between the ages of 7–10 years old own a Smartphone which points us out that the future of digital marketing is ahead and it is brighter that we have ever imagined. Taking into account the moral and ethical aspects of digital advertising we believe that we have the opportunity to serve even better search results and digital advertisements on Laptops, Smartphones, Tablets, Smart TVs, and desktops in the future (Focus Bari Web ID survey, 2nd Wave 2015).

Given the fact that the marketing and media environment is constantly “on the move” and it is rapidly changing we will try to reveal how can we get the most out of our communication strategy by using more than one devices and platforms together, as a dynamic duo!

What Kind of Media Users Consume with Mobile

We know people multitask with mobile devices and there are plenty of surveys bearing that out. IAB's Mobile & the Media Day Study (IAB's Mobile & the Media Day Study, Jan 2011) has revealed what other media, if any, did users use/view at the same time they are using mobile media. From 6–9 am 18 % of people in a week listen to the radio or use the PC/Laptop while using a mobile device. At the same time almost 35–40 % of the people watch TV and 20 % reading Newspaper/magazine. So, during the day radio declines while newspaper/magazine remains almost at the same levels and PC/laptop from time to time (e.g. 9am–3am) doubles its penetration levels. On the other hand it is very interesting to notice that from 6 pm and on, more than 80 % of people utilize simultaneously media channels. TV consumption starts its exponential increase from 30 to 60 % from 6 pm–12am. So, it more than clear that users during the “TV's prime time” are turning their attention to their mobile devices while watching TV, or to put it more accurate while TV is just on.

More specifically, in accordance to IAB (IAB's Three Device Lives: Tablets in context survey 2012), users interactions on Tablets and Mobile Devices like Smartphones increases from early evening to 12 pm in a normal weekday. So, what interested us the most from the survey's outcome is that more than 45 % of mobile devices usage is regularly made after 7 pm.

Additionally to what mentioned above, Sparkler and IAB UK have given us stats about what people do via their devices and what time during the day. First and foremost, it is important to state that 60 % of the people using smartphone and 51 % of tablet users replied "Social Networks" to the question: "What I'll do with my device today?". The survey also revealed the role that each device plays. 53 % of smartphone users and 49 % of tablet users replied that it is the "easiest for me to pick up", while 46 % said that smartphones are the fastest devices, 37 % of tablet users declared that its screen interface is much easier to be used than in other devices.

In consequence, in the three devices ecosystem the smartphone and the tablet take the lion's share. But, what do people do during the day with their mobile devices? Late in the morning (10am-12 pm) social networks are at the top of the lists as well as early in the evening from 7 pm-9 pm users log in their account and become part of their virtual community.

Case Study

Most of the times when advertising and media agencies are trying to determine a brand's communication strategy for social media they are thinking of driving users from TV to those virtual communities. They create an advertisement pushed on TV that literally tries to invite users to visit/like/follow a brands social media page in order to attract users, interactions and drive to engagement. The problem is that brands spend huge amounts of money to push those advertisements on TV without considering how many GRPs are real/actual. So, in other words and in terms of digital advertising terminology we could ask ourselves how many GRPs are viewed and then counted by actual "Viewability Rates". The problem here is that we don't have the tools and the intelligence to count them so regardless what mentioned above we can step aside and bypass that barrier.

Our suggestion which describes our creative and out of the box use of both online and offline media is to move "against the norm". That innovation can potentially be very effective. We suggest to urge users to pay their highest level of attention on a TV screen the exact moment were we have planned to push our message/advertisement on. The main communication channel of that strategy, is a popular social media platform; Facebook. The concept is a "socially driven call to view" idea (e.g., "Eyes on the Screen, 9 pm"). We aim to drive TV views on designated moments by triggering users to take part in simple contests. What can possibly be the new status? What else, but a new truly socially driven TV engaged audience!

The whole concept described is not just a way of integrating multiple devices and media together but also giving a different point of view and a different way of understanding users' behaviors, digital interaction paths, and media consumption across platforms.

The main concept behind that example is that we use 1 of the 4 marketing P's in a very innovative and integrated way. That could also apply to a brand's annual Marketing Plans as it has to be determined from the early stages of the strategy outline.

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Branding in the New Museum Era

Zoe-Charis Belenioti and Chris A. Vassiliadis

Abstract Undoubtedly, museums play a vital role in the economy and tourism constituting of a significant unit of cultural tourism. However, facing either rival competition within the leisure industry or funding cutbacks museums are now adopting for-profit strategies aligned with marketing principles. Today museums have redefined their role and activities to conclude newer and more active experiences and entertainment, shifting to experiential notions of “edutainment” and “artertainment”. This paper extends the current knowledge by drawing on a review of 40 papers. This study presents the fundamental components of brand concept within the museum industry. Precisely, essential elements of branding such as brand equity, brand loyalty, and brand resonance are discussed and set to museum sector. This study makes an important contribution to the field of tourist and cultural marketing by advancing our understanding of museum branding and by proposing both new research topics and valuable managerial implications to museums practitioners and scholars.

Keywords Museum marketing · Museum branding · Cultural marketing · Cultural tourism · Tourism & destination marketing

Introduction

Recent developments at socioeconomic and technological level exhort museums and Non-Profit Organizations’ (henceforth NPOs) to the application of for-profit strategies aligned with marketing principles. Specifically, economic downturn and funding reduction (McLean 1994; Cole 2008), fierce competition with other leisure

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proxies (Cole 2008) along with the technological advances—such as the rise of Internet—(Kolb 2013; Cole 2008; Griffin 2008) and rapid change of behavioural patterns (Kolb 2013; Kawashima 1998; McLean 1995a) have heightened the need of branding within museums as a tool of museums' sustainability (McLean 1995a, b; Kotler et al. 2008; Rentschler and Osborne 2008).

According to Griffin (2008) and Kolb (2013) the new era of museums began in 1970, when museums had to strive for their financial viability due to funding cutbacks. Indeed, today museums brands are ubiquitous. For instance, Tate Modern or Victoria Albert have become such a successful brand that London has been associated as the epitome of museum sector. Thus, to build strong, vivid and memorable brands with high brand equity is the next big thing for any NPOs employee. Especially regarding museums' sector vast researchers acknowledge and call for the need to brand the culture (Rentschler and Osborne 2008; Griffin 2008; Kotler et al. 2008; Bradburne 2001). In the same vein, Vassiliadis and Fotiadis (2008) confirm the contribution of segmentation to the successful museum branding and marketing. Despite its efficacy, little discussion exists about branding and more specifically brand equity models. Thus far, however, scholars have paid far too little attention to brand equity models and customer based equity models (Camarero et al. 2010, 2012; Liu et al. 2015). This is the first paper that attempts to remedy this problem by categorizing the recent literature on museum brand equity.

Review of Museum Branding

Museum Branding; A Diachronic Term in Infancy

Museum is defined as a “non-profit making, permanent institution, in the service of society and of its development, and open to the public, which acquires, conserves, researches and communicates, and exhibits for the purpose of study, education and enjoyment, material evidence of people and their environment” (ICOM 2007). Today museums face several challenges deriving both from economic downturn and from social and technological variables (Sargeant 2008). The literature has emphasized the importance of marketing and branding application (Hudson 2007; Padanyi 2007; Kavoura 2014).

Previous studies within museum branding have linked branding with identity and psychological associations between the cultural products (artefacts/collection) and its audience (Scheff 2007; Rentschler and Gilmore 2002). Pragmatically, to Rentschler and Osborne (2008) a museum brand has functional and emotional attributes. Venkatesh and Meamber (2006) and Mclean (1994) also articulate the central role of identity for cultural products. Likewise, King (2015) confirms that through brand identity a museum boosts the familiarity, loyalty, and it encourages partnerships.

Moreover, studies remark that museum branding is now becoming more than necessary (Williams 2011). Almost every scholar—called as brand advocate—argues for the benefits of branding application such as boost of income, boost of stakeholders’ engagement, boost of the museum experience, viability, and values (Rentschler and Gilmore 2002; Rentschler and Osborne 2008; Ames 1988; McLean 1995b; Kotler and Kotler 2012; Kolb 2013; King 2015; Williams 2011). In the same vein, Vassiliadis and Fotiadis (2008) confirm the contribution of segmentation to the successful museum branding and marketing. Vast researchers call for the need cultural branding (Rentschler and Osborne 2008; Griffin 2008; Kotler et al. 2008; Bradburne 2001) while O’Reilly (2005) accentuates the paucity of research. However, brand sceptics expressed many ethical concerns about the branding application (Kylander and Stone 2012; Byrnes 2001; Resnick 2004).

Building Brand Equity in Museums

Turning the brand equity in cultural organizations (arts exhibitions and museums), Camarero et al. (2010) define brand equity as “the social and economic repercussions originating from the brand, in other words the intention to return for a future visit and therefore an increase in the number of visitors, and individuals’ willingness to pay” (2010:8). As noted by Liu et al. (2015), brand equity in museums is treated by managers mainly as a means of publicity and fundraising. Caldwell and Coshall (2002) report that the Aaker’s model (1992) is definitely reshaped. In addition, due to the intangibility and special attributes of NPOs, Camarero et al. (2010) confirm four dimensions as components of brand equity for arts and cultural exhibitions: brand loyalty, perceived quality, brand image, and brand values. We mention the ground models in (Fig. 1).

Table 1 illustrates how traditional branding concepts apply to cultural organization on the basis of Camarero et al. (2010) conceptualization.

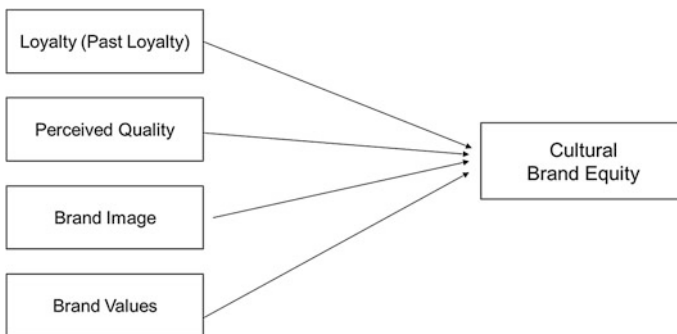


Fig. 1 Museum brand equity model adapted by Camarero et al. (2010)

Table 1 Explaining the museum brand equity assets

Brand loyalty	Rational addiction model links the positive experience of cultural consumption with the present consumption (Stigler and Becker 1977; Levy-Garboua and Montmarquette 1996)
Perceived quality	Perceived quality in cultural organization refers to difference between the expected and delivered services
Brand image	Museums strive for establishment of positive experiences, benefits, and expectation according to Caldwell and Coshall (2002)
Brand values	Museums are vehicles or knowledge and values simultaneously. Museum brand values are their lens of museums. Thus, brand values should be in line with the values of donors and stakeholders and their different type of values within museum context: identity values (collectivism, individualism) and ethnocentric values. Values reflect their brand personality and identity as well.

Moreover, Camarero et al. (2012) acknowledge that different drivers of brand equity emerge for each category of visitor. For instance, only external visitors or in other words cultural tourists are driven by image whereas only internal visitors are driven by the event's brand value. Moreover, the variable of perceived quality also differentiates. Two years later, Camarero et al. (2012) report as determinants of brand equity the following variables: Brand value, brand recognition, brand quality, and brand uniqueness.

In terms of customer based-brand equity in museums, Liu et al. (2015) confirmed that brand values are a mediator in terms of a customer based-brand equity. They also found that perceived quality influences brand image. Finally, no study so far has examined the concepts of brand resonance and knowledge suggested by Keller (1993, 1999, 2001, 2002) in museums.

Discussion, Conclusions and Further Research

The main goal of the current study was to discuss how principal branding concepts applied in the context museum's sector. First, we found that although branding offers vast benefits to museums at financial and societal level, museum branding is still a controversial and neglected and issue (only three studies were carried out on brand equity of museums' sector). This may be explained by the infancy of branding adoption in museums. Second, we found that the Aaker's model (1992) cannot be fully applied to museum context. Instead, the cultural brand equity assets are loyalty, which is defined as a positive association toward museum than intention for revisit, perceived quality, brand image, and brand values. Table 2 juxtaposes the traditional and cultural branding models. One possible explanation for this reshape is the instinct nature of museums (Vassiliadis and Fotiadis 2008). Surprisingly, the notion of brand resonance remains still undiscovered.

This research enhances our understanding about the state of museum branding literature. Moreover, this is the first study that depicts the difference between

Table 2 Differences between brand equity in traditional cultural branding

Aakers' brand equity model (1992)	Cultural brand equity model (Camarero et al. 2010)
Brand loyalty	Loyalty (past loyalty)
Brand awareness	Brand image
Perceived quality	Perceived quality
Brand associations	Brand values
Brand assets	

traditional brand equity and museums' brand equity models. Overall, this study strengthens the necessity of branding application in museums. Thus, this research provides valuable theoretical and practical implications. First, given the infancy of museum branding, the present study calls for further research. Second, we urge museum practitioners to view branding as a vital strategic tool. What is now needed is definitely the empirical investigation of brand resonance model in museums. Moreover, given the important influence of integrated marketing communication (Belch and Belch 2008; Keller 2009) and the emerging role of social media (Buhalis and Foerste 2015; Zaglia 2013; Chi 2011) further studies need to estimate this influence in museum branding.

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e-Marketing in the Hotel Industry: Marketing Mix Strategies

M. Siakalli, A. Masouras and C. Papademetriou

Abstract Does the hotel industry fully exploit the e-marketing capabilities? The purpose of this study is to investigate the Internet marketing strategies and practices that are used in the hotel industry. Namely, it examines the level at which the traditional marketing mix model which comprises five dimensions i.e., the traditional 4P's (Product, Place, Price, Promotion) and the Customer Relations (C) is used as an e-marketing strategy. Quantitative analysis will be conducted in order to examine the above with a random sample of hotels located in Cyprus. This area of study is of vital importance since it explores whether hotels implement comprehensive effective marketing strategies and if they fully exploit Internet potentials in order to innovate their products.

Keywords e-Marketing · Hotel industry · Marketing mix · Strategy

Introduction

One of the most important promotional activities used by the tourism market is the promotion of the tourism product on the Internet, what is namely called as e-marketing. This process, i.e., the design and implementation of e-marketing, is not an easy process but it encompasses all those elements also included in traditional marketing starting from understanding customer/consumer behavior and ending with advertising distribution.

This becomes even more complex in the field of tourism industry since, in this particular case, the customer acts within a complicated network that is difficult to understand its entirety. Apart from the factors that are related to the product (e.g., the price) there are also other factors involved, such as emotional and psychological factors, that play a significant role in the decision-making process of the tourist regarding the destination, the transport means, and the services that the tourist will

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use. One of the fundamental advantages of e-marketing is that it can easily segment the market and use the customer's web experience to record the characteristics of the tourist online behavior (Constantinides 2004).

The Use of Social Media as a Promotional Tool in Tourism Industry

Social media are one of the most important promotional tools for tourism industry. If properly used (on the basis of a specific strategy and marketing plan), it can fulfill the customers' needs online and thus transform them into potential customers. In addition, social media are linked with the concept of innovation since they can be used to promote companies' innovative suggestions and activities (Danias and Kavoura 2013).

Kavoura (2014) describes digital advertising as a fast and low cost way for a business to reach its public either for the promotion of brands or the promotion of products and services. What is interesting about digital advertising is the element of interactivity, the online relationship that is built with the customers, and the possibilities provided to the customers to participate in online advertising campaigns in various ways such as online special offers, competitions, etc. Interactivity is also linked to online customer services using various applications/tools such as online/live chat that support customers relationship, that is the *relationship marketing* (Grönroos 1994).

From Traditional Marketing Mix to e-Marketing Mix

This study focuses on the extent at which marketing mix is used to plan the promotion of the hotel industry online. More specifically, the study is based on the traditional marketing mix, i.e., the 4P's (Product, Place, Price, Promotion), and C (Customer relations) and whether this can be implemented on the digital marketing of the hotel industry.

The four traditional parameters (4Ps) are the result of transformations of the definition of marketing that gradually led to these parameters as the basic components of the strategy planning process. Butler's definition (1911) describes the concept of marketing as all the things done by the promoter for a product before the product is promoted for sale or advertisement. Even though this is not a recent definition, the fact that refers to a *product* indicates that the process of marketing was based primarily on the product features. Shaw's conceptual approach (1916) is also important since it adds the issue of price, referring specifically to *price policies*. Culliton (1948) describes marketing as a *mixer of ingredients* while Frey (1956) refers to product supply and the methods and tools for the promotion of supply and

the product in general. The development of the definition and its relation to the marketing mix approach is established by Kenyon (1958) who refers to a *mixing process* and later McCarthy (1960) who clearly refers to the 4P's, namely these four dimensions that constitute this approach.

Marketing mix has been widely amended and transformed such as for example, the 7P's that are comprised of the following elements: Product, Price, Place, Promotion, Personnel, Procedure management, Physical assets (Yasanallah and Vahid 2012). The 4C's approach is of particular interest, since its fundamental difference from the traditional 4P's is that it is more people-oriented as it mainly emphasizes on customer services and satisfaction and not just the direct business profitability (Shahhosseini and Ardahaey 2011).

One of the most important applications of the traditional marketing mix is its use for online promotion, i.e., when marketing mix is transformed into e-marketing. In the tourism industry, online promotion is widely used either for the direct promotion of the tourism product or the identification of tourism groups with specific features, or for market research on the needs and requirements of tourists or potential tourists. Apart from the promotional tactics, internet applications in tourism often reduce operational cost leading to the return of benefits to tourists and increasing reservations for tourism businesses (Buhalis 2003).

Methodology

The study used a cross-sectional survey. The questionnaire included two parts. The first part consist demographic information and other related information i.e., category of the hotel (stars), gross revenue expenditure on e-marketing, average full occupancy level per year, existence of a specialist on e-marketing. The second part included 13 questions that correspond to the five variables of marketing mix (product, place, promotion, price, and customer relations). Statements of the questionnaire were developed based on previous research of Sigala (2002) and Luck et al. (2003). Product component was represented with three questions, price with two, place with other two, promotion with three, and customer relations with three. The participants responded on five-point Likert scale where 1 indicates a very low rate of use and 5 very high rate of use. Product included statements such as "The availability of product related information on-line," Price included statements such as "The availability of pricing information online," Place included statements like "The availability of booking on-line with the use of credit cards," for promotion "The use of on-line advertising" and regarding the customer relations statements such as "The provision of online customer service." The five components of the marketing mix were created by calculating the mean of the corresponding questions that refer to the respective variables.

The questionnaires were distributed via email. Due to the very low response rate, personal interviews were held. The sample included 30 hotels of all categories—three stars and above—i.e., 23 % 5 stars, 50 % 4 stars, and 27 % 3 stars that are

located in Pafos, where in each hotel the marketing manager was requested to complete the survey. The questionnaire was written in Greek, the native language of the participants.

Means, standard deviations, and Cronbach alphas, respectively, for each variable were for Product $M = 4.66$, $SD = 0.27$, $\alpha = 0.61$, for Price $M = 4.57$, $SD = 0.44$, $\alpha = 0.54$, for Place $M = 5$, $SD = 0.00$, $\alpha = 0.77$, for Promotion $M = 4.71$, $SD = 0.3$, $\alpha = 0.7$, and Customer Relations $M = 4.33$, $SD = 0.72$, $\alpha = 0.74$. All variables demonstrated adequate internal consistency.

Analysis

Hotel category differences in the five components of the marketing mix were tested using MANOVA. The multivariate effect was statistically significant ($Wilks' \Lambda = 0.25$, $F(10,48) = 4.61$, $p < 0.05$). Follow-up univariate ANOVAs were conducted for each of the marketing mix component. There was a significant main effect of the category on the Product ($F(2,27) = 4.51$, $p < 0.05$), on the Price ($F(2,27) = 21.7$, $p < 0.05$), on the Place ($F(2,27) = 5.7$, $p < 0.05$), the Promotion ($F(2,27) = 12.2$, $p < 0.05$), and on Customer Relations ($F(2,27) = 20.17$, $p < 0.05$). Tukey's post hoc results showed significant differences between five stars and three stars hotels for all the five components. For the use of Product, Price, Place, Promotion, and Customer relations components five stars hotels had higher mean scores than three stars and four stars hotels had higher mean scores than three stars. No statistical significant differences exist between five and four stars hotels for all the components of the marketing mix. Descriptive statistics results are reported on Table 1.

Full occupancy level of rooms on average per year was described with a binary variable. Results revealed that a marketing specialist has a positive association with the full occupancy level. The phi coefficient has shown a statistical significant positive correlation between the two ($\phi = 0.535$, $p < 0.05$).

Calculating the correlations between the hotel e-marketing strategies and the occupancy level of rooms there was no statistical significant correlation between the

Table 1 Means (SD) for each marketing mix component according to hotel category

	5 stars hotels Mean (SD)	4 stars hotels Mean (SD)	3 stars hotels Mean (SD)
Product ^a	4.66 (0.27)	4.44 (0.76)	3.75 (0.58)
Price ^a	4.57 (0.44)	4.66 (0.36)	3.43 (0.56)
Place ^a	5 (0.00)	4.86 (0.22)	4.37 (0.69)
Promotion ^a	4.71 (0.3)	4.48 (0.6)	3.5 (0.53)
Customer Relations ^a	4.33 (0.72)	3.95 (0.79)	2.29 (0.37)

^aNote $p < 0.05$

two variables ($r = 0.22$, $p = 0.23$). Hence, fully booked hotels do not necessarily associate with their e-marketing strategy.

Independent sample t-tests showed that there are no statistically significant differences between hotels with specific and no specific marketing strategies regarding the use of their marketing component of product ($t(28) = 1.76$, $p = 0.09$) and place ($t(28) = 2.15$, $p = 0.12$). However, there are statistical significant differences between hotels with specific e-marketing strategies and no specific strategies on the use of price ($t(28) = 4.161$, $p < 0.05$), promotion ($t(28) = 3.78$, $p < 0.05$), and customer relations ($t(28) = 2.89$, $p < 0.05$) component. In all the significant results, hotels with a specific strategy have higher mean scores than the ones that do not have.

Differences on the gross revenue expenditure for Internet marketing and the use of the marketing mix were obtained using independent sample t-tests. In the current sample, only hotels that spent 0–1.9 % and 2–2.9 % of their gross revenue were represented. No statistical significant differences exist for the use of the product and the price component (all $p > 0.05$). Analysis suggested that statistical significant differences occur between hotels that spent 0–1.9 % and 2–2.9 % of their gross revenue on place, promotion, and customer relations components. Hotels with higher percentage expenditure on e-marketing strategies have higher mean scores on the use of all the aforementioned components. Hotels with higher expenditure consider of great significance the place component and less important the use of customer relations.

Logistic regression was used to explore the relationship between full occupancy level and the hotel category, the traditional 4Ps along with customer relations. No statistical significant results were obtained.

Discussion

Marketing mix is characterized by four different but equally important variables. The results illustrated in this paper remark that the hotel industry uses the traditional 4Ps and C on their e-marketing strategies. However, not all components are equally weighted. For the e-marketing strategy to outperform, it will be required for the hotel industry to reassess their strategies. If one component out weights the other, this does not necessarily imply that the strategy is not effective. It can be effective, but probably does not have superior performance or the business does not consider that each component is of equal importance on their strategy.

Due to the low response rate, the results in some cases were not as expected. Further research should be done with a more representative sample in order to extract more appropriate results. It was expected that the five components of marketing mix will have a significant impact on the average full occupancy level. However, this was not shown on the results. This can be attributed to the fact that occupancy level possibly depends on other factors that were not included in the model. In addition, the average full occupancy level as presented on the

questionnaire was reported as a binary variable. Instead, further research should include the annual average occupancy rate in order to confirm that none of the components have a significant impact. In addition, research with financial and competitive market measures will be valuable in order to understand the effectiveness of the e-marketing strategy in the hotel industry.

Hotel category has an impact on the use of each e-marketing component. Overall the results suggested that five and four stars hotels exist in the marketplace under the same e-marketing mix components. However, three star hotels have significant differences with luxury hotels. This can be justified as their target groups may differ.

As the market is very competitive, it is of vital importance for specialists to take over the e-marketing strategies and have specific strategies in order to have the ultimate profitability.

The e-marketing mix as illustrated from the results is a multidimensional process and not a linear one. Belch and Belch (2003) support that a successful marketing mix strategy is a multidimensional process; that is each of the components of the marketing mix involves a number of decision areas that should be taken in account. Furthermore, the applications of the traditional and e-marketing mix totally differ. This is mainly due to the different type and wide range of audiences that each of the approach is addressed to (Belch and Belch 2003). In addition, traditional marketing mix and e-marketing mix have differences on the tactics that products/services are promoted. These differences that appear on the use of each of the e-marketing mix component can be attributed to the different business goals.

The marketing mix either in the traditional or online form (e-marketing mix) is a powerful tool in designing the products of the tourism industry. Small and big players of the market should explore further Internet potentials in order to unlock missed opportunities, innovate their products, and reach ultimate profitability.

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IMC Strategies of Festivals in Destination Branding

Gökçe Özdemir and Duygu Türkmenoğlu

Abstract Festivals are considered as short-term but major attractions by destination marketers. Integrated marketing communications of festivals will be assessed in this study based on the nature of festivals in terms of destination branding. Since destination branding is a common practice to promote the destination's history, lifestyle, and culture; festivals are used to create such a reputation by destination marketers. Destination branding is a strategic instrument to publicize a destination's competitive advantages. Therefore, in this paper, integrated marketing communication strategies of festivals are evaluated that reinforce the branding of destinations through multimethod analysis.

Keywords Integrated marketing communications (IMC) · Destination branding · Festivals

Introduction

Integrated Marketing Communications (IMC) is a new phenomenon for destinations and became more important with the emergence of social media. IMC referring to the integration of marketing communication tools through a single message for consistency to build a brand is also applied to destinations. Destination marketers, trying to highlight arts and culture by festivals for various reasons, disseminate the relevant message through IMC but without neglecting the destination branding concept. In this regard, the harmony between the brand's focus as a destination and the festival theme should exist in order to create a favorable effect in the end. Today, a tourist attraction has gained a broader meaning and thus events too are considered as attractions (Gartner 1996). On the contrary to other attrac-

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tions, a festival is evaluated by its organizational features. In addition to the destination's main elements that support an event, the success of a festival depends on the experience that participants have in such a short time.

Accordingly, Yuan et al. (2008) stresses that the choice of destinations and visits to attractions or attending festivals is affected by previous experiences and the degree of enjoyment with these experiences. Thus, festivals as short duration attractions should be appealing in theme and context, well organized, and promoted effectively to gain attention. Promoting festivals in fact has proved to be an effective way to boost tourism at the destination and thereby to enhance the destination image. On the contrary to other attractions or mega events, festivals' promotion should be more focused to a specific group of people with the same motivation to attend such a festival. Therefore, festivals are promoted heavily starting from months before the actual event with the exception of periodical events. The fanatic followers of periodical festivals follow the media in advance to put it in their schedule looking forward to experiencing it once again.

Since destination branding is a common practice to promote the destination's history, lifestyle, and culture; festivals are used to create such a reputation by destination marketers. In this context, integrated marketing communication strategies of a well-known international festival are assessed in terms of branding of destination İzmir, Turkey. The organizer of the International İzmir Festival is the Izmir Foundation for Culture, Arts and Education (IKSEV). IKSEV was founded by a group of people in the mid-1980s with a priority to organize a high quality of arts and culture festival to make İzmir a capital of arts and culture once again, since it was a multicultural capital of arts and culture in the history. IKSEV plays an important role in promoting the city of İzmir internationally with the events they organize. The International İzmir Festival is a prestigious event with high artistic standards hosting musicians, artists, and performers from around the world every year at the unique and historic venues of İzmir. The Festival hosts about 8–15 events every year and has been taking place for 29 years in the summer months.

Literature Review

In general, the potential for tourists to attend an event is dependent on what they are interested in, what kind of an experience, and the benefits derived from that experience they are expecting (Özdemir Bayrak 2011). Yet, the motivation of a festival attendee is studied by many scholars (Yuan et al. 2005; Özdemir Bayrak 2011; Lee et al. 2004). Thereby, tourists travel to destinations with numerous motivations which one of them is the composition of social and cultural experiences along with the destination offering for a period of time. Garcia (2004) has already identified a lack of coordination between event organizers, tourism bodies, city planners, and the arts community as a key difficulty. Thus, the reason can be these actors being competing on a different platform with each other or lack of communication and focus in terms of common objective among the actors. Larson

(2002) also points out that the marketing of a festival is diverse and aimed at serving a number of interests.

Crompton and McKay (1997) indicate that tourists do not exclusively buy the product or service, but rather the expectation of benefits that satisfy a need. Felsenstein and Fleischer (2003) explains the benefits of the festival as being instrumental in presenting local cultural traditions and customs to visitors, thereby preserving and diffusing the heritage. The importance of benefits in tourism service in addition to its costs is also studied by Sirgy et al. (2011). Results of Gursoy et al. (2004)'s study support the festival and special event organizers' belief that festivals and special events create more social benefits than the social costs. Festivals organized by several entities independently or cooperatively do not only provide benefits to tourists like enhancing their quality of life (Kruger et al. 2013) but also the community itself. In fact, many studies in the tourism research have focused on the effects of festivals (Delamere and Hinch 1994; Blichfeldt and Halkier 2014; Huang et al. 2010; Warnick et al. 2015).

Nevertheless, events occurring regularly in the same location may gradually become so closely associated with the identity of the place in which they are held that they become a driver for place branding (Della Lucia 2013). In addition, Blichfeldt and Halkier (2014) define signature events like local food festivals to be well suited to contribute to the branding of a particular locality. Authors also emphasize that the challenges signature events face are the same with the place-branding challenges in general. They also focus on festivals as manifestations of a place-branding strategy which is mostly measured by the number of tourists it pulls in, the money spent by these tourists, the actual experience or satisfaction that these tourists have, etc. According to Rizzi and Dioli (2010), branding is intended to make a place attractive and recognizable through a particular and targeted image, but not limited to mere tools of communication. This leads the branding concept in general to be broader than the communication process but in this paper, IMC of festivals and destination branding link will be studied.

Methodology and Findings

Festivals are not only attractive to visitors but also to media that covers a substantial space. Custodio and Gouveia (2007) define the media as a vehicle for destination promotion, whereas events are also a form of image formation and projection. Yet, the media's influence is more like local or national since cultural festivals lacks the appeal as attractions for international tourists. To assess the IMC of events on destination branding, the International Izmir Festival organized every year by IKSEV is chosen to be examined in this study. IKSEV's Press and Public Relations Advisor is interviewed on the subject. According to Walle (1997), a variety of qualitative techniques have gained prestige both in marketing and tourism research. A semi-structured in-depth interview was conducted due to the nature of this study face-to-face with the advisor. The interview took place at the IKSEV office on

August 27, 2015 and lasted for 90 min. The interview was tape-recorded and notes were taken during the interview by the interviewer to assure nothing was missed while decoding the interview.

In addition to the interview, IKSEV's Facebook and Twitter accounts were examined to support the interview in relation with the IMC strategies in terms of social media. IKSEV uses social media in addition to the more traditional channels. Even though it may be criticized by some marketers, IKSEV considers their standpoint in social media being more appropriate due to their philosophy and the audience they target. It has been observed that IKSEV shares the same posts both on Facebook and Twitter to create consistency among the communication channels. In total, it has been observed that IKSEV has shared 86 posts on both Facebook and Twitter during the event which many people shared, liked, commented, and retweeted the posts.

IKSEV's Press and Public Relations Advisor believe that the festival programs and the performers who participated in the festival over the years are the main reason for the International Izmir Festival to be known internationally. IKSEV's large network of artists and performers created within the past years also promote the festival on their own because of the positive impressions they had during the time they spent in the city of Izmir. On the other hand, the key to please the performers is mentioned as communication, informing them about conditions of the facilities since historic sites limit the organizers in providing the performers' needs and expectations.

For the promotion of International Izmir Festival, a variety of communication channels are used by IKSEV in order to reach a wide range of audience. However, a great part of their audience is already aware of the annual festival, but communication channels are considered as a reminder for the start of the festival. The announcements about the festival on billboards of the city start a week before the festival starts along with the start of the ticket sales. Brochures, posters, and an introductory movie are used to promote the festival billboards around the city are also used heavily to increase awareness about the festival and its performers that year. In addition, local newspapers, TV, and radio channels announce the festival as news in Izmir. The performers and artists who participate in the festival also announce their performances and concerts on their own websites in addition to Izmir Metropolitan Municipality and tourism establishments in Izmir. Municipalities support IKSEV by providing their boards around the city free of charge. Due to the regulations that IKSEV follows, it is not allowed to hang posters around the city except for the designated boards and spots since they do not want to be associated with any kind of visual or environmental pollution.

In order to create buzz about the festival, IKSEV organizes competitions like the best photography related to the festival on social media platforms. Knowing that young festival goers are only a small portion of the International Izmir Festival, social media addresses mainly the younger audience. The International Izmir Festival also has fans all around the world who attend the events every year. For instance, the advisor of IKSEV mentioned about a group of people from the UK calling IKSEV every year before the festival to ask about the program as to

schedule their holiday in Izmir just to attend the events. IKSEV also allows people who are interested in the festival to sign up for the newsletter on IKSEV's website to be informed about upcoming events other than by following the media.

The media's interest in the International Izmir Festival was extensive as the 29th International Izmir Festival in 2015 had appeared in the press over three thousand times. The festival was mentioned in the newspapers, art magazines, and news portals several times. Furthermore, reporters, photographers, and camera crews from almost every media outlet in Izmir attended to IKSEV's press conferences and followed the events from the beginning. IKSEV works with a group of columnists, writers, and bloggers who are interested in the International Izmir Festival and arts in general. IKSEV's advisor mentioned that some members of the press followed the whole festival and all the events.

Conclusion

According to the advisor of IKSEV, the vision of IKSEV influenced the Izmir brand in making it a capital of arts as it is used to be. The founders of IKSEV were sure that arts should be a part of the brand even though most of the prominent people who participated in the process of destination branding were not sure how to promote the city of Izmir. The artistic tastes of the residents and the standards of the local artistic establishments are elevated due to the level of the International Izmir Festival events. IKSEV's advisor thinks that the opening of four different faculties of music in the Izmir universities over the years shows the importance of music for Izmir. The International Izmir Festival has an influence on how people perceive Izmir. Although Izmir has become a brand and is known internationally, IKSEV's advisor as a resident in Izmir for over 50 years believes that Izmir was more of a brand city in the past, the immigration issue affected Izmir in a negative way, and the city is damaged socially and architecturally. She also thinks that the discussions about what should be done to make Izmir a brand city continues; however the institutions are not taking action to make it happen.

Branding is a mode of communication and communication is always a two-way process (Kavaratzis and Ashworth 2005). Festival goers' decision-making process with the intention to satisfy a particular social or cultural need may be influenced by the branding of the city. In fact, festivals that enhance the branding concept are part of the local culture, bring dynamism and liveliness to the city and acts as a key to differentiation. If DMOs are to determine what kind of festivals would be efficient to facilitate the branding of destinations and enhance the competitive advantage, the outcomes would be more meaningful for destination marketing. Culture of a community is very closely linked to the destination image and the theme of a festival is determined accordingly by the festival organizers either public or private that will enhance the existing image. It is apparent that, although destination branding is a continuous process, festivals are organized and promoted only for a period of time which still has a tremendous influence on branding of a destination.

Thus, festivals lasting for many years should never lose its focus to be associated with the destination brand and should always apply IMC. IMC of festivals with a consistent message reaching different groups of people also adds value to the destination brand.

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Tourism Innovation: Theoretical and Empirical Review

Ruben Molina, Melissa Ochoa and Jorge Victor Alcaraz

Abstract Tourism has become one of the principal service sectors of the countries. The economic and social importance that it has achieved has been the result of a series of innovations, such as in transportation, in the technologies information and communications and in the services they offer, among others, which have an important role in this sector and benefiting destinations and visitors. Currently, the new segment, known as millennials tourists, are more informed and demand new experiences and higher quality in its stays, forcing businesses, and destinations to find new mechanisms to boost further innovation and new offerings products and services that are differentiated and highly competitive. This article presents a review of theoretical and empirical studies published by experts in international refereed journals and books on topics related to tourism innovation, in which it discussed the importance of this approach to the study of tourism development.

Keywords Marketing · Innovation · Tourism · Theoretical and empirical works

Introduction

During the last decades, tourism has experienced a continued expansion and diversification, becoming one of the fastest growing economic sectors in the world. Currently, there is a new segment of tourists known as Millennials, who are more informed, demand new and higher quality experiences on their trips, forcing businesses, and tourist destinations to make innovations to offer new products and services, for example the transport and communication systems such as the train, automobile, aircraft, the Internet and social networks. This new market segment

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often consults websites for reviews and feedback, as well as web pages with information about the destination before embarking on the journey; they use social networks as a system of communication to meet the destination and know what is happening at all times.

Although the study of tourism innovation is an important issue, research in this field is recent. The few studies available have examined innovation in tourism from different areas, whether relating to the level of destination (Stamboulis and Skayannis 2003; Volo 2005; Hjalager 2006), hotel companies (Camisón 2000; Law and Jogaratnam 2005; Orfila-Sintes et al. 2005; Martínez-Ros and Orfila-Sintes 2009; Orfila-Sintes and Mattsson 2009) or small and medium tourism enterprises (Weiermair et al. 2005; Pikkemaat and Peters 2006; Hjalager 2010).

The process of innovation in the service sector has not yet been studied enough because it is considered that tourism businesses are not developers of innovations because they purchased from external suppliers and for that reason they are not considered as triggers of a series of innovations (López et al. 2014). Moreover, it is not common for tourism companies to have departments or resources dedicated to research and development (R & D) to create or enhance innovation. Therefore, this article aims to identify the literature on tourism innovation, highlight the theoretical evidence, and present empirical evidence. This review concludes by making a call to the scientific community to continue to conduct research to make a tourism innovation theory and show its importance.

Innovation in Services

This section begins with the definition of the word service and then we continue with the rise of innovation in services. A service is an act that gives one part to another; it is an economic activity that creates value and provides benefits to customers in specific times and places (Lovelock et al. 2004).

There are different approaches in manufacturing that were adopted to innovation in services (Gallouj and Savona 2009; Gallouj and Windrum 2009; Tether 2005): the technical approach (or assimilation) compared innovation in services with the adoption and use of technologies in the context of the manufacturing industry (Barras 1986, 1990; Evangelista 2000). The integration approach (or synthesis) is based on the trend toward convergence between manufactured goods and services to develop a common conceptual framework (Gallouj and Savona 2009; Gallouj and Weinstein 1997). This approach overcomes the materiality and technology bias in the services sector (Gallouj and Savona 2009).

Tourism Innovation

Tourism is a service sector that is in constant process of innovation, because it is a service that sells products, it has to provide new emotions for tourists, if not innovate; therefore, stops providing emotions, and decreases the number of tourists (Plog 1974, 1987), so, tourism requires the companies to innovate in order to keep up with the competition (Hall and Williams 2008). In addition, due to the nature of tourism, tourism enterprises and destinations have more difficulty in protecting their innovations because competition can easily see what others are doing and new ideas can rarely be protected by patents or other mechanisms (Hjalager 2002).

OECD (2005) described innovation as the renovation and expansion of the range of products and services markets; the establishment of new methods of production, supply, and distribution; the introduction of changes in management, work organization, working conditions, and skills of the workforce.

Hall and Williams (2008) point out that innovation is the process of bringing a new idea to solve a problem: ideas reorganization, reduce costs, propose new budget systems, improve communication, or assemble products. Therefore, innovation is the generation and implementation of new ideas, processes, products or services and also the ability to change and adapt to obtain at the end a competitive advantage.

There are different categories of innovation: Hall study's (2009) is made up of the four categories of the OECD in innovation: (1) product innovation: involve new goods and services and significant improvements in them; (2) process innovation: significant changes in production and delivery methods; (3) marketing innovation: referring to changes in product design and packaging, product promotion and methods for pricing goods and services; (4) and organizational innovation: referring to the implementation of a new organizational method in business practices of the company, labor organization, or external relations.

Hjalager provides a basic categorization close to Schumpeter: product innovations, process, organizational/business, and marketing constitute the main body of the categories of innovation.

Damanpour et al. (2009) classified innovation in services according to the following: Service: new services to existing and new customers and offer new services to new customers. Process: (a) Technology: new elements introduced into production systems or service operations to generate products or services to customers. (b) Administrative: new approaches and practices to motivate and reward employees, to design new strategies and change management processes of the organization.

Therefore, the types of innovation in the services area and in the hotel sector could be summarized as follows:

1. Service innovation: create new goods or services or improve existing ones for consumers.
2. Process innovation: changes in the form and sequence of doing things, with greater efficiency and productivity, relying on various tools such as ICTs.

3. Organizational innovation: changes in the ways of carrying out the administration of the organization; search for new structures of cooperation between the public and private or seek to improve the regulatory framework in which tourism areas are based on.
4. Marketing innovation: new forms or changes in the forms of communication to publicize the services or goods to the target market and potential customers, making use of ICT.

It is also important to point what Nieves et al. (2014) suggest: if firms wish to evolve and adapt to their environment through the development of innovations, they are required to have at least three major resources based on knowledge: first, knowledge, skills, and abilities employee (human capital); second, collective knowledge (organizational knowledge); and third, the willingness and ability of managers to access a knowledge beyond organizational boundaries (external social relations).

Knowledge is one of the most important resources in service businesses and is particularly significant due to the performance of activities that require interaction, collaboration, and communication with customers (Sirmon and Hitt 2009). In the tourism industry, improving human capital has become a priority, especially when you consider that most of the workers in this sector are semi-skilled (Hjalager 2002; Walsh et al. 2008).

Empirical Evidence

In terms of empirical evidence, some studies analyze the effects of innovation on competitiveness, on productivity, on knowledge or market attractiveness. Hall and Williams (2008) link innovation to the propensity to survive as a company in a highly competitive market, it is tourism.

Victorino et al. (2005) evaluated the impact of innovation in different hotels categories in North America, and their empirical evidence suggests that innovative companies gain a competitive advantage and a subsequent customer preference to return to that place. Companies that differentiate their products are more successful than those that do not, but this effect is enhanced if there is a development of the human capital, as shown by Walsh et al. (2008).

Blake et al. (2006) conducted some surveys on the impacts of different types of innovations in productivity, they found that the accommodation and the attractiveness of the companies are related to marketing innovations and products that are important for the company and productivity, while managerial and organizational innovations affect less to increased productivity.

Nieves et al. (2014) analyzed the innovation by combining knowledge-based view and relational view. The results of this study showed that in the tourism sector, knowledge is important: high levels of knowledge about the business environment

(competition) and relationships with persons or entities outside the organization contribute significantly to achieving innovation in the sector.

The most comprehensive study that has been conducted to date is based on the National Innovation Statistics of Australia and New Zealand (Hall 2009). The study shows that accommodation and restaurants are innovative at a level which is quite comparable with other economic sectors.

Conclusions

Nowadays, companies from all economics sectors are facing a global increasingly demanding and highly competitive environment. This is why innovation is a fundamental activity for success, even for the survival of the tourism. Tourism is generally ignored as a target sector in innovation because it is characterized by public goods, free riding, and weak barriers to imitation. Yet difficulties, innovation in tourism must be encouraged.

From a conceptual point of view, innovation has been defined in terms of different approaches taken by different authors, being that there is no consensus on the definition of innovation. Of the theoretical and empirical studies reviewed in this article, we can determine the principal variables according to the categories of innovation that influence in tourism

Product innovation: additional services, creating new ideas, hotel category, hotel groups, nature of service, occupancy rate, seasonally, hotel size, quality hotel, and products.

Process innovation: coordination between departments, ICT's and social networks, ways of introducing technology and innovation, process management, technology, and equipment.

Organizational innovation: chain of command, collaboration with customers, employee behavior and training, empowerment, governance, incentives for the development of new skills, organizational performance, knowledge, and staff skills.

Marketing innovation: communication, customer orientation and satisfaction, marketing, media, public relations, market responsiveness, and target market.

This article analyzed studies in which some attempts have been made to explore theoretically and empirically the key concepts of the literature on innovation in tourism. This research concludes that there is a hole between the theoretical and the empirical studies because they still need to bring to the practice what the theory says and applies to the practice to make improvements to the tourism sector, at all the levels: from a macro level (destinations) to the micro level (hotels, restaurants, travel agencies). With the combination of the variables that have an effect on tourism innovation, the tourism sector could improve and innovate to stay in the market and have competitive advantages.

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The Communication Role of the ‘Imagined Communities’ in the Promotion of International Events

Androniki Kavoura and Damianos P. Sakas

Abstract This paper examines the role of the constitutive elements of identity creation for communicating a sense of community in academic conference events. Event organizers utilise mass email campaigns and social media networks to advertise and promote conference events. The demand side, the engaged participant, becomes involved in the process of finding information about these events also basing his/her decisions on specific reasons. The paper argues for the role of the creation of an online community and its constituent elements for identity building of a community of special interest, that of a conference. The research is exploratory in nature and explores whether these constituent elements are significant capable to create and preserve an academic conference community. Creating brand communities with people who are engaged and follow conferences and events can be a strategic innovative communication tool for event organizers. It is a successful decision tool to academic conference organizers that may offer an effective communication plan for the creation of communities of special interest.

Keywords Conference events · Imagined communities · Online engagement

Introduction

Research associated with conference events has mainly focused on the supply side, the way conference can be purchased and how decisions are made for site selection (Mair 2014). Limited research has focused on conferences’ delegates decisions to attend a conference (Oppermann and Chon 1997; Severt et al. 2007; Zhang et al. 2007; Mair and Thompson 2009; Mair 2014) based on personal reasons and

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well-being, cost, the conference venue and location but also networking opportunities and cooperation among attendees.

Very limited studies have taken place in regard to the interactivity between the demand and supply side—conference organizers' communication strategies and attendees' involvement as key elements in the creation of a community of like minded people who share a sense of belonging.

Gruzd et al. (2011) argued that although people get together and exchange messages on the physical and virtual environment; this does not mean that they feel they belong to a community.

We contend that people may engage and attach to different settings and environments and that in turn this will impact membership and socialisation.

Gender differences also do not provide explanatory satisfaction in regard to information seeking online and being part of a community (Grimes et al. 2007; Manierre 2015).

We would like to examine the significance people attach to conference groups based on the constitutive elements employed in social sciences for identity creation.

An extensive review with findings concerning conferences' attendees published in academic journals in the last years by Mair (2014) has not mentioned any study in regard to the concept of sense of community belonging and identity creation in the events' and conferences' sector which allows us to argue the significance of incorporating these concepts to the communication of conference events.

Different communities exist online and offline and interact with one another. These communities share common characteristics whether they are small-group brand communities, virtual communities and people identify with such groups and smaller ones within these communities; they create interconnected relationships based on the sense of belonging; members are included, outsiders are excluded, setting in that way, boundaries, and promoting cohesion.

Definitions and Conceptual Framework

The concept of the sense of community was developed in the 80s (McMillan and Chavis 1986) and has been employed to account for the creation of nations and identity with Anderson and "the imagined communities" to be among the main advocates (Anderson 1983, 1991).

The identification of the sense of community in both online and traditional community groups is found to be quite similar (Casaló et al. 2011; Lee et al. 2014).

The sense, feeling, or spirit of belonging to one group and membership, may explain the participation in online communities, to a similar extent that this has taken place for identity creation and a concept that is still underresearched (Abfalter et al. 2012; Malinen 2015; Keng et al. 2015).

Imagined communities is a term initially used in regard to elements of nationality and the creation of identity of a population from Benedict Anderson who argued that even if people have never met, they may feel that they belong to the same group based on specific elements further discussed (Anderson 1991). In the creation of identity and nations “the nation is imagined as limited because even the largest of them... has finite, if elastic boundaries beyond which lie other nations” (Anderson 1991, p. 7). Members of the imagined communities even if they have never met, they feel part of the community (Anderson 1991).

Determining concepts in the creation of identity are
 the use of language and the association of ideas, the role of high centers and experts,

the presence of the significant other,
 the homogeneous empty time and space.

We argue that the aforementioned need to pre-exist and further maintained so that a network or community is created. These are concepts that create the sense of community which are necessary for bringing people together as used for the creation of the identity of nations.

Language and symbols provide identity builders. Indeed, recent research on whether Chinese language on cyberspace influences the identity construction of migrant netizens in New Zealand, illustrated that this language that is not associated with a specific territory, actually reinforces a sense of belonging to a virtual space and community (Yin 2015).

The sense of community is a relatively new research field in regard to cyberspace and the relation with a community's online members; a virtual group bases its communication on the one to many approach and can be transformed to a community if the sense of community is cultivated (Keng et al. 2015). Nonetheless, Keng et al. (2015) do not further examine how these concepts, that is sense of community and cultivation can be combined.

It is thus interesting to explore ways that people can feel members of these communities who engage and bind with each other.

That is, we argue, the emphasis on the sense of community is necessary and the mechanisms at work that contribute so that community identity is created and thus, a community takes place.

Conferences are incorporated under conventions that belong to the meetings, incentives, and exhibitions industry bringing together like minded people that join together because of the same common purpose (Mair 2014). These people have similar interests. Associations meetings are related with academic institutions.

Do these like-minded people actually form a community? How do they connect with other event participants? Can such communication lead to a community creation? Do they share the characteristics of identity formation?

Methodological Considerations

Different services and software have been employed to capture people's behavior online via cursor's tracking associated with web analytics (Huang and Leiva 2015; Kent et al. 2015). Analytics can be used so that the effectiveness of a web can be examined (Rhode et al. 2015).

Big data refers to the datasets whose storage capacity is beyond the ability of traditional database software tools for capturing, storing, managing, and analyzing the unstructured data. Big data has become revolutionary technologies that help in enhancing organization's bottom line through converting data into knowledge (Bhadani and Kotkar 2015). The process of how web analytics work is as follows: a computer code is pasted on the conference's websites and then, metric data is used to determine trends. There is no personally identifiable information (Kent et al. 2015) and thus, there is not an ethical issue in question.

Web analytics are usually associated with descriptive statistics that inform us on the number of pages the visitor visited, how much time s/he spent on them, how did they come to those pages—the paths they followed (Kent et al. 2015). Although this research is useful, it does not determine the framework under which existing users visit a web page.

Based on the identity creation constituent elements such as

- Use of symbols and association of ideas
- The role of high centers and experts
- The significant other
- The homogeneous time and space

described in the creation of nations (Anderson 1991), this research aims to examine the abovementioned elements to allow for inferences to be made on their significance to conference attendees' search. The methodological approach of the research should satisfy specific aims. The objective set in the present project is the examination of the holistic adoption of the variables presented above that creates identity. This synergy and the creation of community may be justified with the delegate's intention to participate in the conference. The existence of those elements may allow for the sense of community to take place.

Data are based on visits to the conferences' websites that are organized from the Institute for the dissemination of arts and sciences (I-DAS), an experienced and expertised non-profit organization in scientific event planning. Conferences' data were collected for a three year period since 2013. Conferences were held in different places each year (I-DAS 2013a, b; I-DAS 2014; I-DAS 2015) with a traffic of more than 700 people visiting the sites.

Behavior flow of visitors on the websites of the conferences is examined with Google analytics. The further aim of the scientific orientation is the examination of the model of identity creation for conference participants. The final decision of participation may be determined with the traffic to the registration section of

conference’s website. This may determine that the participant follows the team influenced by the five axes with his/her final registration to the conference.

Lewis-Beck et al. (2007) argued that in structured observation in regard to data collection, predefined rules determine what is examined. In the specific research, the rules on what was searched were defined by the theory ‘imagined communities’. Herring (2004) notes that in computer mediated discourse analysis, sampling is rarely done randomly, since random sampling sacrifices context. In that way, textual analysis can take into consideration ongoing participant observation of online communication.

Discussion

In the above-mentioned problematic of the model, the axes are analysed and presented with the provision of examples based on Google analytics that the researchers examined. The exploratory research presents a snapshot of the way identity may be further created within a conference community that needs to be further examined. In regard to the comparison of existing and new conference attendees’ use of language when conference searching, it was found that strategies for driving traffic to the website influenced five times more the new users than the existing users of the conference site while the Google search by the name of the initials of the conference was the case for existing users rather than new users who did not know well enough the abbreviation (see Table 1).

In regard to experts, the announcement of the speakers’ names on the conference brought significant results, the week of the speakers’ announcement. It is typical to note that the conference’s invited speakers have substantially contributed to their science and have received more than 6000 citations based on google scholar (see conferences’ related websites).

The physical or virtual presence of the people who belong in the imagined community is a relative concept, it is the person who organizes the session that is significant and this can be seen by the number of online visits to the same conference session (physical and virtual) in a 3 year period (2013–2015) (see Table 2).

Table 1 Comparison of existing and new conference attendees in regard to special language used to reach the conference community

Category	Existing users (%)	New users (%)
Google search (by the name of conference)	41.30	32.64
Direct search (conference website)	37.43	37.35
Search by the institute of the conference organization (I-das)	2.82	0.00
Strategies for driving traffic to the website	4.16	10.82

Source www.icsim.net Google analytics

Table 2 Number of visits to a conference session (physical and virtual) in a 3 year period (2013–2015)

Year	No of visits	Session page views	Type of session
2013	597 VISITS	1057	Physical
2014	475 VISITS	1022	Physical
2015	967 VISITS	1932	Virtual

Source www.icsim.net Google analytics

This person (significant other) belongs to the conference community and at the same, sets boundaries with his/her session.

At the same time, and based on results of Table 2 we may argue for the homogeneous time and space as is described by the model in the creation of identity (Anderson 1991) since the virtual presence of the conference community is represented by the so called Anderson’s phrase “they feel they belong to a community even if they have never met” (Anderson 1991). At times, the conference participants have a physical presence based on the conference’s location and their availability to go to this place and at times, the location becomes the virtual sense of the community and conference’s participants do not have to be physically there.

There is huge potential in the creation of online and physical communities with engaged people who share common interests. Like minded people can be part of many different environments and these environments do not necessarily have to do with one’s physical location with the contribution of emerging technologies (Kavoura 2016; Sylaiou et al. 2008). Simulation models may be further strategically implemented to examine which of the abovementioned variables play a more significant role than the others for the development of competitive advantage of firms and organizations in different sectors (Marinagi et al. 2014; Sakas et al. 2014).

Conclusion

The reputation of the community can play an important role in the process of building loyalty, since it and can improve feelings and trust, leading to loyalty. The sense of belonging to a community may reinforce emotional links, create strong bonds and attachment.

Creating brand communities with people who are engaged and follow conferences and events can be a strategic innovative communication tool for event organizers but also academics. The results offer initial suggestions to conference organizers for an alternative communication of events creating a sense of the community.

Future research focused at the brand level is recommended to explore the relationships tested in the current study. Future research is recommended to link survey data capturing intentions with actual participation.

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e-services Development in the Collaborative World

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Abstract The survival of modern enterprises will depend on the ability to understand their own role within the physical and social environment. As enterprises try to react to these challenges, they realize that they need to collaborate with other enterprises. Enterprises need to transform in order to participate successfully in a collaborative network. The participation in a collaborative network based on service system framework can change the enterprise's: (a) understanding of value (value-in-use); (b) customer's relationship (cocreator of value); (c) operational boundaries (customer can become a codesigner). In order to enable this transformation, we propose e3-value ontology to assist enterprises in developing collaborative value propositions, e-business scenarios, and operations requirements.

Keywords Collaborative networks · Service systems · Business transformation · Value flows · e3-value

Introduction

In today's global economy, business partnerships and outsourcing agreements are swiftly becoming dominant practices. This trend has led to new economic activities, new business models, and new value propositions. More specifically, modern enterprises do no longer compete against single entities but against networks of organizations. As a result, there are fundamental shifts in the way businesses perceive competitive strategies and how competitive advantages can be created. Over the last two hundred years, and accelerating in recent decades, we have witnessed a rise and fall in resources allocated and interactions dedicated to local production of

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goods, with more reliance on increasingly complex interactions with others (Bell 1973; Clark 1940/1957; Fuchs 1968; Levitt 1976; Pine and Gilmore 1999).

As enterprises try to react to these challenges, they realize that they need to transform in order to survive. The problem is that transformations are complex undertakings.

Service Science is a fairly young discipline that combines organizational and human understanding with business and technological understanding, to explain service systems, including how they interact and evolve to cocreate value. Our goal is to apply a scientific approach to advance design and innovation in service systems for achieving business transformation. (Spohrer and Maglio 2009) believe that the need to understand-manage and design-imagine better service systems and networks is thus a necessity.

In this chapter, we present a new view on value proposition design, using e3-value ontology as organizational simulation tool, in the context of complex service systems. We believe that e3-value ontology can act as an organizational simulation, because it is capable to provide a graphical representation of service ecosystems and value propositions choices. Through these choices, enterprises can decide the appropriate strategy in order to react to the continuous changes of today's dynamic global economy.

Literature Review

Enterprise Interoperability

The recent global economic crisis has demonstrated that are required new ways of doing business. The survival of traditional enterprises within the global economy relies on their ability to adapt to several changes, create new ideas and new approaches to collaborating in dynamic networked environments.

Collaborative networks are environments where resources are exchanged within and across organizational boundaries (Standing and Sims 2009). In order to succeed in a collaborative environment, enterprises need to be interoperable, thus being able to share information with other organizations, and must be adaptable to different network environments (Goncalves et al. 2007). Nevertheless, due to different models and information structures, the exchange of important information is not an easy task.

In the past decade, the concept of Enterprise Interoperability has received considerable attention in the research community (Chen et al. 2008; Charalabidis et al. 2010). As enterprises cannot survive solely through their own individual efforts, success depends on the activities and performance of others with whom they do business. In this context, Enterprise Interoperability is defined as the capability of an organization to interact and exchange information and other resources, both internally and with external partners, in order to achieve a certain business goal

(Li et al. 2008). Sustainable interoperability aims at accommodating disturbances in a network of organizations, without compromising the overall network interoperability state (Agostinho et al. 2011; Goncalves et al. 2012; Kutsikos and Mentzas 2012; Sakas and Kutsikos 2014).

Service Science—Value Cocreation

Our approach is based on Service Science, which is the study of service systems and value cocreation. Service Science combines organization and human with business and technological understanding in order to categorize and explain service systems, including how service systems are able to interact and evolve to cocreate value (Maglio and Spohrer 2013). Value and value creation are critical to understand the dynamics of service systems (Vargo et al. 2008). Service Science adopts the service-dominant logic foundational premises. As a result, for service science, service is the application of competences (knowledge and skills) by one entity for the benefit of another (Vargo and Lusch 2004, 2006). This definition helps us to understand better what service means, by implying that value is created collaboratively in interactive configurations of mutual exchange, which are the service systems. There are two categories for the value that is generated. The first is good-dominant logic, which is based on the value-in-exchange meaning of value and is created by the firm and distributed in the market, usually through exchange of goods and money. The second, service-dominant logic is tied to the value-in-use meaning of value (Vargo and Lusch 2008). From the S-D logic viewpoint, value is not created until the recipient of the service offering has actually integrated the newly acquired resources with its own, for a positive, beneficial outcome (Vargo et al. 2008).

Service science emphasizes collaboration and adaptation in value cocreation, and creates an interdependent framework for systems of reciprocal service provision. These systems can be individuals or groups of individuals that survive, adapt, and evolve through exchange and application of operant resources, (those that act upon other resources), such as knowledge and skills, with other systems. In other words, service systems engage in exchange with other service systems in order to enhance adaptability and survivability for themselves and other service systems (Vargo et al. 2008).

Measuring Value in Collaborative Networks

In the connected business environments described above, where value is generated through cocreation activities, a key challenge is how to describe value flows and define value distribution among collaborating entities.

e3-value is an approach to design e-business models. Furthermore e3-value ontology contributes to a better and shared understanding of the value in an enterprise, specifically with the respect to its profit drivers. Using e3-value ontology, we can model networked constellations of enterprises and end-consumers, who create, distribute, and consume things of economic value.

Over the past few years, many innovative e-business ideas have been considered. Most of these ideas were unsuccessful (Shama 2001). With the aid of internet, many firms are able to create new revenue streams from e-business ideas. Today enterprises need to develop new value propositions if they are to survive. Following that, contemporary enterprises increasingly participate in networked value constellations (Gordijn et al. 2009). By doing so, enterprises can jointly satisfy more complex consumer needs, which would have difficulty manage alone (Gordijn 2002).

e3-value has two main characteristics. First, it is a methodology that recognizes the importance of economic value. Consequently, e3-value analyses the creation, exchange, and consumption of economically valuable objects in a business network. Second, e3-value is founded on principles of multi-viewpoint requirements engineering and semiformal conceptual modeling. An e3-value model represents a business network that creates, distributes, and consumes value objects (Gordijn and Akkermans 2003).

Organizational Simulation Tool

As we mentioned above, e3-value is an ontology, which can model value constellations of enterprises through the design of multi-enterprise relationships, e-business scenarios, and operations requirements in both qualitative and quantitative ways.

Through the usage of e3-value ontology, we seek to answer what it means for an enterprise to participate in a collaborative network, which is a very difficult undertaking. Enterprises need to transform in order to participate successfully in a collaborative network. The participation in a collaborative network based on service system framework can change the enterprise's: (a) understanding of value (value-in-use); (b) customer's relationship (cocreator of value); (c) operational boundaries (customer can become a codesigner). Rouse (2005) indicates that the study of enterprise transformation focuses on understanding the challenges of change and determining what practices help most to address change and successfully transform. We believe that e3-value can model all these changes of this transformation and offer the appropriate channel to the collaborative world.

In addition, utilizing e3-value as organizational simulation tool, we strive to obtain knowledge about the transformation results and to contribute to the improvement of the transformation process and means. Our research objective entails the implementation of the organizational simulation tool based on e3-value ontology, which will help firms engage in collaborative activities while controlling the potential transformation activities needed along the way. e3-value ontology can

represent a service systems constellation with graphically depicted value flows. Our tool can offer interactive glimpses of the collaborative network, which an enterprise decides to participate in order to survive. Our organizational simulation tool can enable the value estimation of the transformation process in parallel with the service systems design, and provide a rich training environment once the network is deployed in a language that all the participants can understand.

Further Research

Modern organizations are required to adapt more than ever to an increasingly dynamic environment. Mastering change is of the utmost importance (Malhotra and Hinings 2013). As a first step toward realizing this potential, we are currently working on a business transformation framework, which can give to enterprises the appropriate guideline to choose the right transformation path. Our framework will have stages with attributes in order to help an enterprise to understand: (a) in which stage it belongs, (b) in which stage it wants to go, and (c) how this transformation can be achieved.

Connecting e3-value with a business transformation framework, we can have a tool to give enterprises paths to find the best option for the appropriate transformation based on their capabilities and targets.

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Business Transformation Through Service Science: A Path for Business Continuity

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Abstract Globalization, technological change, economic crisis, and an increasing demand for specialization have led to new economic activities, new business models, and new value propositions. As enterprises try to react to these challenges, they realize that they need to transform through collaboration with other enterprises in business networks, in order to: (a) develop new value propositions, (b) reduce operating costs, and (c) engage in value innovation activities. In order to enable this transformation, we propose a Service Science approach to assist enterprises in developing collaborative value propositions.

Keywords Service science · Business transformation · Service Systems · Business continuity

Introduction

The rise of globe-spanning, service-based business models has transformed the way the world works. This transformation has been enabled by new information and communications technologies, specialization of businesses, global regulations, and increased use of external services by entities at multiple scales (Wirtz and Ehret 2012).

Enterprise networking is becoming a reality for any kind of organizations, because none can operate in isolation anymore. Due to globalization, it is necessary for an enterprise to be a member of a large supply chain and to have strong partnerships with other nodes of a collaborative network. Digital revolution has created new strategic models based on the closer relationship with customers and

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other partners in order to offer total solutions. Such a collaborative reality creates a new business environment, whereby its complexity and scale pose significant challenges. Today an increasing number of enterprises are looking into the question of “What” to do in order to transform. There is a need for modern enterprises to seamlessly interoperate poses significant challenges on their capabilities for engaging in multiple business networks. Today’s enterprises can transform through their participation in business networks, in order to: (a) develop new value propositions; (b) reduce operating costs; (c) engage in value innovation to satisfy more demanding customers; (d) participate in alliances that can help them become more sustainable.

This paper considers a particular type of business networks, namely, “service systems,” and proposes this architecture for enabling business transformation. Our approach is based on Service Science, which is the study of service systems and value cocreation. We believe that our approach can give a great impetus to enterprises that want to thrive in today’s highly competitive and complex business environment.

Literature Review

Business Transformation

The past few years have been characterized by significant developments that came along with fundamental changes in the way modern enterprises operate and are structured. Many organizations faced the challenge to question their operations, products, and business models and are forced to adapt to new conditions in a short period of time. Today’s enterprises need to be transformed by a combination of predicting better, learning and acting faster, as long as the market expect that a transformation will improve the value an enterprise can provide to the market (Rouse 2005). Irrespective of their size, organizations are required to adapt to a progressively dynamic environment. Mastering change is of the greatest importance for contemporary enterprises (Malhotra and Hinings 2013).

According to (Rouse 2005; Rouse and Baba 2006), business transformation is driven by value deficiencies that require significantly redesigned and/or new work processes. Transformation has proven to be a vital strategic element in business strategy. It does not involve merely fine tuning a few areas but requires radical changes in critical business factors. As reinvention of the entire business philosophy is the central idea, profound consideration is given to reinvention that will lead organizations to succeed and not die away due to stagnation. This process can give to organizations complex challenges but at the same time can offer new opportunities (Cowan-Sahadath 2010).

It is obvious that business transformation is highly complex process and that the results are influencing enterprise’s future. Currently the ability to manage a

transformation is crucial for enterprises to create advantage against competitors. Organizations need to create transformation capabilities in order to be capable to offer innovative value propositions, which are developed by innovative internal business processes (Stiles and Uhl 2012).

Business transformation management needs to be business-driven, value-oriented in order to be effective (Stiles and Uhl 2012). Business Transformation Management Methodology (BTM2) is a holistic methodology for managing business transformation. BTM2 is developed by Business Transformation Academy and is an approach that helps manage transformation initiatives.

BTM2 incorporates eight disciplines and are of two types: (a) the direction layer that refers to management of strategy, value, and risk of a business transformation and (b) the enablement layer that refers to business process management, program management, IT transformation management, organizational change management, and competence and training management.

Based on (Rouse 2005), research in enterprise transformation is progressing along six key areas: (a) Transformation Methods & Tools, (b) Emerging Enterprise Technologies, (c) Organizational Simulation, (d) Investment Valuation (e) Organizational Culture & Change and (f) Best Practices Research.

Collaborative Networks

A key concern for business transformation activities is how to control risks and ensure the firm's sustainability, post-transformation. Today's competitive markets are becoming even more complex and dynamic, with unable enterprises to prospering solely through their own individual resources (Friedman 2005). Each enterprise's success depends on the activities and performance of others to whom they do business with (Wilkinson and Young 2002).

It is very important for enterprises to understand the new possibilities and shifts that are able to affect global economy and use these shifts as asset for the future. Based on (Santucci et al. 2012), our digital society is redefining the individual enterprise in a context where the collaborative network is the business. These networks are the foundation of future enterprise systems (Chen et al. 2008).

The survival of traditional enterprises within the global economy relies on their ability to adapt to several changes, create new ideas, and new approaches to collaborating in dynamic networked environments. Collaborative networks are environments where resources are exchanged within and across organizational boundaries (Standing and Sims 2009). In order to succeed in a collaborative environment, enterprises need to be interoperable, thus being able to share information with other organizations, and must be adaptable to different network environments (Goncalves et al. 2007). Nevertheless, due to different models and information structures, the exchange of important information is not an easy task.

A very popular form of business cooperation that has attracted attention is virtual enterprises. A virtual enterprise is a coalition of business entities, selected from a

larger community of available business entities that collaborate on a joint project. The collaboration is often ad hoc, for a specific outcome only, after which the virtual enterprise may dismantle. The members of a virtual enterprise often possess complementary skills and technologies whose combination is deemed necessary (D'Atri and Motro 2007). It is also supported by extensive use of information technology. The main objective of a Virtual Enterprise is to allow a number of organizations to rapidly develop a common working environment, in which are capable to manage a pool of resources provided by all the nodes in order to achieve a common goal.

In this approach, a client is an entity outside the virtual enterprise, which approaches the virtual enterprise to acquire a product or a service. This means that a virtual enterprise does not cocreate value with a customer. The cocreation of value among customer and provider is very important for high-level service design.

Service Value Cocreation

Business transformation can be defined as the orchestrated redesign of the genetic architecture of the entire enterprise (Morgan and Page 2008). Transformations are complex undertakings. Many business transformations are highly susceptible to failure. Today an increasing number of enterprises are looking into the question of "What" to do in order to transform. Our approach is based on Service Science, which is the study of service systems and value cocreation. Service Science combines organization and human with business and technological understanding in order to categorize and explain service systems, including how service systems are able to interact and evolve to co-create value (Maglio and Spohrer 2013).

Value and value creation are critical to understand the dynamics of service systems (Vargo et al. 2008). Service Science adopts the service-dominant logic foundational premises. As a result, for service science, service is the application of competences (knowledge and skills) by one entity for the benefit of another (Vargo and Lusch 2004, 2006). This definition helps us to understand better what service means, by implying that value is created collaboratively in interactive configurations of mutual exchange, which are the service systems. The value that is generated may fall in one of two categories. The first is good-dominant (G-D) logic, which is based on the value-in-exchange meaning of value, created by the firm and distributed in the market, usually through exchange of goods and money. The alternative view, service-dominant (S-D) logic, is tied to the value-in-use meaning of value (Vargo and Lusch 2008). In S-D logic, the roles of producers and consumers are not distinct, meaning that value is always cocreated, in interactions among providers and beneficiaries through the integration of resources and application of competences (Vargo et al. 2008).

From the S-D logic viewpoint, value is not created until the recipient of a service offering has actually integrated the newly acquired resources with its own, for a positive, beneficial outcome. In other words, the recipient service system's overall

circumstances must somehow improve, implying that service value has been cocreated. To that extent, each service system engages in three main activities that make up a service interaction: (a) proposing a value cocreation interaction to another service system, (b) agreeing to a proposal, and (c) realizing the proposal (Maglio et al. 2009).

Service science emphasizes collaboration and adaptation in value cocreation, and creates an interdependent framework for systems of reciprocal service provision. Service systems survive, adapt, and evolve through exchange and application of operant resources, (those that act upon other resources), such as knowledge and skills, with other systems. In other words, service systems engage in exchange with other service systems in order to enhance adaptability and survivability for themselves and other service systems (Vargo et al. 2008).

Conclusions

In this paper, we argued that the service systems as a business transformation path is an important area of interest, both for academics and professionals. By adopting a Service Science viewpoint, we assume that service ecosystems are comprised of service systems collaborating for value cocreation. We believe that such an environment can provide new business opportunities to its participants in order to achieve sustainability and business continuity.

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The Concept of Corporate Reputation Assessment Model—The Stock Market Investors Perspective

Tomasz L. Nawrocki and Danuta Szwajca

Abstract The growing importance of reputation in building enterprise value and achieving long-term competitive advantage creates the need for its measurement and evaluation for the management purposes. The paper presents a proposal for corporate reputation assessment model. Due to the complexity and multifaceted category of corporate reputation, we first have focused on the assessment from the view point of stock market investors, which, because of its range, can be considered as a good basis for further research and improvements. In the proposed concept three aspects have been considered—informational, financial, and development, as well as social ones. It was also assumed, that the individual sub-criteria will be based on public sources of information, and as the calculation engine, capable of obtaining synthetic final assessment, there will be used fuzzy logic. The main reason for developing this model was to fulfill the gap in the scope of synthetic measure of corporate reputation, that would provide the higher degree of objectivity by relying on “hard” (not from surveys) and easily available data.

Keywords Corporate reputation · Assessment/measurement of reputation · Stock market investors · Fuzzy logic

Introduction

In the current information era, dominated by a very dynamic technical and technological progress and the increasing globalization processes, the sources of success and competitive advantage of the enterprises shift from tangible to intangible resources, related to knowledge and modern information technologies. Corporate reputation is considered as the most valuable intangible asset of strategic character. Good reputation builds and strengthens customers loyalty, allows to acquire the

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best employees, attracts attractive investors, helps establish cooperation with the best suppliers and contractors. These benefits translate into measurable results in the form of increased sales, lower marketing and capital costs, as well as higher profits and higher potential growth (Roberts and Dowling 2002; Fombrun and van Riel 2004). This is also reflected in the company's market value (Dowling 2006; Smith et al. 2010), where it is estimated, that reputation makes up to 60 % (Lev 2001). It can be concluded, that for some time we are dealing with the transition to build enterprise value based on reputation capital.

The variety of presently used methods for assessing and measuring the reputation makes, that results are not quite reliable and cannot be used for inter- and cross-sectorial, as well as time, comparisons. In addition, the lack of generally accepted universal method of measuring reputation makes it difficult, or even impossible, to examine the relevant relationship between reputation and financial performance, or the market value of the different entities. Therefore, the main purpose of this paper is to indicate the proposal of a new procedure for measuring the corporate reputation, taking into account the use of quantitative and qualitative (descriptive) criteria coming from public sources.

Conditions for Model Development

Due to the methodology of obtaining the final result reputation assessment or measurement methods used nowadays (*Overall Reputation Score*—Fortune Magazine, *Reputation Quotient*—Fombrun 1996; *Reputation Index*—Cravens et al. 2003; *SPIRIT*—McMillan et al. 2004; *Reputation Index*—Schwaiger 2004) are characterized by a high level of subjectivity and are subjected to potential errors, which are characteristic for the survey measurement. In addition, due to the selection of assessment criteria and the respondents, they do not really evaluate corporate reputation or in general, taking into account the views of all stakeholders, and either in narrowed terms, to the viewpoint of a particular stakeholders group. Moreover, the criteria used for assessing reputation are often not sufficiently clear, duplicated, overlap each other and are dominated by the financial aspects. All this makes that not only these methods are difficult for general use and expensive, but at the same time generated results may not be accurate and reliable.

Developed, using the methodology of fuzzy sets, model of corporate reputation assessment has the following characteristics, which allow to partially minimize the imperfections of presented earlier methods: (i) combination of analytical and synthetic reputation assessment, achieved through the use of sub-criteria, then aggregated to more general assessments; (ii) combination of quantitative and qualitative approach to reputation assessment, manifested in quantitative dimension of reputation indicators and qualitative method to determine its diversity (descriptive characteristics of individual criteria: low, medium, high); (iii) the use in assessment process data contained in public sources of information, in particular enterprises

interim reports; (iv) ensuring reliability and flexibility simultaneously, through the use of qualitative and quantitative data; (v) the ability to carry out the assessment by external and internal stakeholders without the use of advanced techniques.

Basic Assumptions, Assessment Criteria, and Model Structure

Based on the community interview among the stock market investors on the Polish capital market and analyzes of Lev (2013) on investors' expectations, in the proposed solution for the needs of corporate reputation assessment there have been taken into account three main aspects, which are relevant from the viewpoint of capital market participants: (i) *information aspects*, regarding listed companies reporting; (ii) *financial and development aspects*, regarding listed companies current and future financial benefits for shareholders; (iii) *social aspects*, taking into account relations between company's shareholders, as well as company's relations with the surrounding. General structure of proposed corporate reputation assessment model consistent with presented above approach is shown in Fig. 1.

In the proposed model, first it is assumed to obtain partial assessments within the basic criteria of reputation assessment. These assessments will result from the calculated ratios based on data from financial statements or, in case of failing to perform such calculations, the qualitative assessment (descriptive) resulting from the description/characteristics of the given criterion in the interim report of the surveyed subject (such situation might apply in partial criteria within information and social dimension). Then, on this basis, using fuzzy logic, it is assumed to obtain increasingly aggregated assessments until reporting quality, results forecasts, current financial situation and development perspectives, dividend policy, shareholding and relations with surrounding. These assessments are the basis for the calculation of the overall reputation measurements, regarding information, financial and development, as well as social dimensions, in order to obtain in the final stage an overall reputation assessment of the entity from the viewpoint of stock market investors.

Application of fuzzy sets for detailed calculations of companies reputation assessment entails the construction of the so-called fuzzy model, based on expert knowledge. Information necessary to achieve this goal should be acquired through the interview questionnaire, which should be addressed to stock market investors, in particular those specializing in enterprises fundamental analysis (if model developer has a good knowledge in the scope of the analyzed category he may develop his own original model).

As the basic source of information in assessing companies reputation there were assumed publicly disclosed information presented by listed companies in their periodic reports, mainly annual reports and CSR reports (if published), issue prospectuses, and corporate websites. Such choice of information sources is dictated in particular,

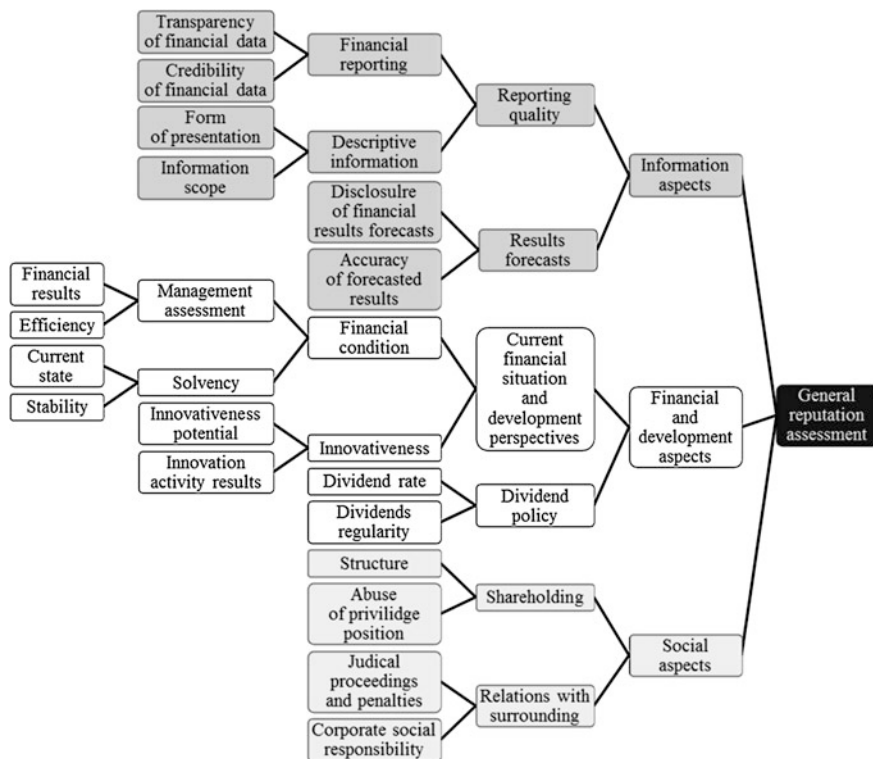


Fig. 1 General structure of corporate reputation assessment model from the viewpoint of stock market investors

the perspective of reputation assessment (stock market investors) in the presented method. However, regardless of above, it allows the use of large amount various concrete criteria for reputation assessment, relating to the actual situation of enterprises, without the need to support the research with surveys.

Specific criteria for reputation assessment in the developed model were separated taking into account opinions obtained during the community interview with stock market investors, several years of experience of the author in the field of enterprises fundamental analysis and investments in the capital market, as well as the capacity of information in interim reports published by listed companies.

The Main Guidelines for Fuzzy Model Construction

In proposed solution it was assumed, that fuzzy model will be developed along with Mamdani approach (Piegat 2003) which in general form presents Fig. 2.



Fig. 2 General scheme of fuzzy model

As the input values of the fuzzy model x_i^* are introduced, which in the FUZZIFICATION module are subjected to the fuzzification process—here, the membership degree of input values $\mu(x_i^*)$ to the particular fuzzy sets is calculated. Next, in the INFERENCE module, based on the received input membership degrees, fuzzy reasoning takes place, the end result of which is a resultant membership function $\mu(y)$ of the model output. The basis for the fuzzy reasoning is so-called rule base in the form of “IF–THEN” and an inference mechanism which determines the way of activating rules in the base, as a result of which membership functions of the particular rules conclusions with the given values of fuzzy model inputs x_i^* are received, as well as the way for their aggregation into one resultant membership function of the entire base conclusion $\mu(y)$. Because this function most often has a fuzzy form, which makes the interpretation of the final result much more difficult, in many cases, there is a need to transform it into a precise value. This is done in the DEFUZZIFICATION module, whereby the use of the chosen method a sharp (nonfuzzy) value of the model output y^* is calculated.

Therefore, based on the experiences from developing other fuzzy models (Nawrocki and Jonek-Kowalska 2013, 2014), following procedure of reputation assessment fuzzy model building process is proposed:

- Step 1: Gathering input data for the model (company’s interim reports).
- Step 2: Determination for the needs of “fuzzification” module the form of fuzzy sets for respective input variables, determination for these variables so-called basic terms set and the division of their values space (expert knowledge is needed; if constructor of the model is not an expert, some consultations with stock market investors should be performed).
- Step 3: Creating for the needs of “inference module relevant rules bases, determining the mechanism of inference and defining output membership function of the model. (again, regarding rules bases creation expert knowledge is needed).
- Step 4: Determining for the needs of “defuzzification” module a method of converting model outputs from fuzzy form into accurate (nonfuzzy) figures.

After the quantization of input and output variables values space, the development of knowledge (rules) bases and the definition of fuzzy inference mechanism and defuzzification method, we receive ready to use fuzzy model of corporate reputation assessment from the viewpoint of stock market investors.

Summary

Used so far methods and concepts of corporate reputation, measurement and assessment have some weaknesses that affect the credibility and reliability of the research results. The proposed methodology for reputation assessment gives a chance to eliminate several key shortcomings of these methods: (i) proposed model focuses on one point of view of this category (investor's) but in a more accurate way, providing greater reliability of the final results; (ii) the use of criteria based on "hard" data derived from companies reports and other documents should translate into greater objectivity of obtained reputation assessment (in most of existing methodologies mainly a survey methods are used, based on subjective opinions of selected respondents groups); (iii) the choice of evaluation criteria, taking into account different aspects of companies activities and a careful selection of assessment parameters, may reduce the risk of duplication (overlapping) assessed areas; (iv) taking into account information and social aspects reduces the risk of domination final assessment by financial issues.

At the same time, however, it must be emphasized, that presented concept of reputation assessment has theoretical character and requires further considerations, verification of adopted criteria and detailed empirical research, including the development of knowledge (rules) bases needed to perform fuzzy inference.

In conclusion, it should be noted, that proposed method of corporate reputation assessment is not so much an alternative as it is a complement and enrichment of already existing methodology. Therefore, beyond the capabilities of various internal and interbranch comparisons, and analysis of corporate reputation impact an interesting direction of research could also be comparisons of companies' reputation level assessed with survey methods and proposed method.

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How Nonprofit Organizations in Greece Are Using Facebook as a Public Relations Tool

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Abstract In recent years, a growing number of organizations worldwide have been using the social media systematically. Social networking sites such as Facebook offer organizations many opportunities for communication and relationship development with their publics. The object of this paper is to describe to what extent and in what way Greek NPOs are using Facebook as a PR tool. The method used is content analysis in a sample of 100 Facebook pages. The analysis is based on Waters et al. (*Public Relations Review* 35(2):102–106, 2009) and Haigh et al. (*Corporate Communications: An International Journal* 18(1):52–69, 2013) coding. The research findings show that the majority of Greek NPOs use Facebook as a PR tool for promotional and communicational purposes, but do not utilize its full potential to develop relationships with their publics.

Keywords Facebook · Public relations · Nonprofit organizations · Greece

Introduction

Public relations (PR) aim at building and developing long-term relationships between an organization and its publics, which ought to be based on sincere, continuous, and two-way communication (Kent and Taylor 2002; Broom et al. 2009). Nowadays internet and social media provide organizations with many more opportunities to achieve such relationships than they had in the past (Kaplan and Haenlein 2010).

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Facebook is the most popular social networking site, with 1.49 billion monthly active users (<http://newsroom.fb.com/company-info/>), and organizations could benefit from its potential to promote their corporate image and establish relationships with their publics. Its popularity has already attracted the interest of the scientific community in communication. Waters et al. (2009) and Haigh et al. (2013) carried out studies on how organizations use Facebook for PR and communication purposes. They called, however, for further research in organizations in different countries, pointing out not only its popularity and potential as a PR tool but also the lack of related theory in the field.

The objective of this paper is to describe to what extent and in what way Greek nonprofit organizations (NPOs) are using Facebook for PR purposes as a means of promoting themselves, engaging their publics and developing relationships with them. This research aims to answer the following questions: (a) how Greek NPOs are using their Facebook page as a means of communication and relationship development with their publics, and (b) what differences exist in how Greek NPOs use Facebook applications compared to other organizations worldwide.

Review of Literature

In recent years, an organization's opportunities for building relationships with its public in the framework of a PR strategy have expanded with the extensive use of internet and the emergence of the social media (Kent and Taylor 1998; Cho and Huh 2010). The online media are a hybrid of one- and two-way communication and combine the characteristics of both interpersonal and mass communication (Cho and Huh 2010). They allow organizations to communicate directly, frequently, reciprocally, and inexpensively with their publics, bypassing the traditional media (Kent and Taylor 1998; Haigh et al. 2013). They can, therefore, be used effectively by small as well as large organizations (Kaplan and Haenlein 2010).

Facebook is the most popular social networking site not only globally but also in Greece, where the more than 6.7 million active accounts (<http://monitor.sidebar.gr/>) equate to more than half the country's population. Research has shown that in recent years, users worldwide are visiting Facebook pages more frequently than corporate websites (Haigh et al. 2013). As with all the social networking sites, Facebook is based on two-way communication, and relationships are at the core of its philosophy (Waters et al. 2009). Its applications allow users to create personal profiles, provide information through text, photos, video files and blogs, and let others access those profiles and exchange messages with them (Kaplan and Haenlein 2010). Its popularity and opportunities therefore can make Facebook an effective PR tool for any organization.

Methodology

The method used in this study is that of content analysis in a sample of 100 legitimate Greek NPOs with a Facebook page. The coding instrument is based on the codebook created by Waters et al. (2009) and modified by Haigh et al. (2013) in order to study the Facebook pages of international nonprofit and US for-profit organizations, respectively. The codebook has been tested for validity and reliability by the previous researchers and comprises four main coding categories, each with its own variables.

The first three categories, developed by Waters et al. (2009), study organizational disclosure, information dissemination, and involvement. The first concerns the information that refers to the organization's presentation; the three final variables were added by the authors of this paper and refer to the link to other social media, namely, Instagram, YouTube, and Pinterest. The second category includes information about the organization's activities. Involvement concerns the different ways offered to the user to communicate with the organization and engage in its activities. The fourth category appears only in the Haigh et al. study and refers to the presence of tabs for videos, photos, notes, or a discussion forum. The authors of this paper have added one more variable, for user reviews of the organization.

Two coders conducted the content analysis independently in a sample of 15 randomly selected organizations. Intercoder reliability was assessed using Holsti's formula (1969). Category agreement was 90 %, a percentage that is considered high. The coders continued to code the rest of the sample independently. The two-proportion z-test was used to identify statistically significant differences (McClave et al. 2008) between the findings of this study and those of Waters et al. (2009) and Haigh et al. (2013). The results of the z-test are statistically significant at a significance level of $\alpha = 0.01$.

Research Findings

The research findings are presented in Table 1. Concerning the first research question, they show that Greek NPOs use their Facebook page for disclosure. Almost all (98 %) outline their object, 96 % mention or provide a link to their website address, 94 % include the organization's logo, and 88 % describe its mission. Only 47 %, however, presents their history, and very few have links to YouTube (10 %), Twitter (8 %), Instagram (4 %), a blog (3 %), or Pinterest (3 %).

Greek NPOs also use their Facebook pages for information dissemination. All of them (100 %) provide news links and post photos of the organization and its activities, 79 % post video files, but very few (3 %) have audio files. 57 % have information about their campaigns, but only 17 % publish press releases, and 12 % information about their achievements or awards.

Table 1 The research findings and comparison with the results of the Waters et al. (2009) and Haigh et al. (2013) studies

	(a) Our study In % (n = 100)	(b) Waters et al. (2009) In % (n = 275)	Significant differences between (a) and (b)	(c) Haigh et al. (2013) In % (n = 114)	Significant differences between (a) and (c)
<i>Disclosure</i>					
Description	98	96	No	68	Yes
History	47	22	Yes	43	No
Mission Statement	88	43	Yes	44	Yes
Link or website address	96	81	Yes	95	No
Logo	94	71	Yes	91	No
Administrators listed	8	97	Yes	–	–
Link to Twitter feed	8	–	–	38	Yes
Link to blog	3	–	–	24	Yes
Instagram	4	–	–	–	–
YouTube account	10	–	–	–	–
Pinterest	3	–	–	–	–
<i>Information dissemination</i>					
News links	100	54	Yes	43	Yes
Photo posted	100	56	Yes	91	No
Video files	79	24	Yes	61	Yes
Audio files	3	1	No	0	No
Discussion walls	52	74	Yes		
Press releases	17	5	Yes	45	Yes
Campaign summaries	57	20	Yes	46	No
Info about achievements/awards	12	–	–	74	Yes
<i>Involvement</i>					
E-mail to organization	84	71	No	3	Yes
Phone number	87	9	Yes	10	Yes
Message board used	7	44	Yes	4	No
Calendar of events	70	8	Yes	40	Yes
Volunteer opportunities	20	13	No	11	No
Donate	24	13	No	–	–
Store	5	1	No	–	–
<i>Tabs</i>	–	–	–	–	–
Video	81	–	–	53	Yes

(continued)

Table 1 (continued)

	(a) Our study In % (n = 100)	(b) Waters et al. (2009) In % (n = 275)	Significant differences between (a) and (b)	(c) Haigh et al. (2013) In % (n = 114)	Significant differences between (a) and (c)
Photo	100	–	–	91	No
Note	37	–	–	35	No
Discussion forum	0	–	–	60	Yes
Reviews	42	–	–	–	–

Most of the Greek NPOs appear to some degree to be seeking the involvement of the public. More specifically, 87 % of organizations provide their phone number, 84 % their e-mail, and 70 % a calendar of events. But relatively few of them provide information or a means of making direct donations or volunteering (20 %), and just 5 % have an e-store. Only 7 % use a message board. Also, while all the organizations examined have video tabs, fewer than half have tabs for user reviews (42 %), or notes (37 %). No organization had a discussion forum tab.

Turning to the second research question, many statistically important differences were found in the way that Greek NPOs make use of Facebook applications compared to the international nonprofit and US for-profit organizations presented in the Waters et al. (2009) and Haigh et al. (2013) studies, respectively.

As Table 1 shows, far more Greek NPOs than their international counterparts mention their history, mission statement, webmail address, logo and phone number, provide news links and a calendar of events, and post photos and videos, press releases, and campaign summaries on their Facebook page. They lag behind only in the categories of administration listed, discussion walls, and message board use.

Compared to the US for-profit organizations, the Greek NPOs more frequently provide a description, mission statement, e-mail address, and phone number. More of them have news links, video files, a calendar of events and video tab, and post press releases. Fewer have links to Twitter or a blog, information about their achievements or awards, and a discussion forum tab.

Discussion

The study shows that the majority of Greek NPOs are using many of the Facebook applications available to them primarily for disclosure and information dissemination, and to a lesser degree for involvement.

Comparing the findings of this study with those of Waters et al. (2009) and Haigh et al. (2013), it seems that the Greek NPOs make more effective use of Facebook for their promotion and communication. This difference could be

described as unexpected, since most Greek NPOs have neither the degree of professionalism nor the staff or the budgets of the international and US organizations, especially the for-profit ones. It could be partially accounted for by the fact that the Waters et al. study was published 6 years ago, at a time when the relevant theory and practice were far less developed. The Haigh et al. study, however, was published just two years ago.

It seems, then, that Greek NPOs have realized the importance of Facebook's potential as a PR tool and are making use of it. This does not mean that they have exhausted the opportunities offered by Facebook applications. They could, first of all, provide links to other social media, such as Twitter, YouTube, Pinterest, Instagram, or blogs. As Kaplan and Haenlein (2010) pointed out, the combined use of different social media which characterized by activity alignment helps an organization shape a better organizational image, reach more publics and strengthen its relationship with them.

It was also found that relatively few organizations post press releases or information about achievements and awards on their Facebook page. Systematic provision of this sort of information would probably lead to a more fully public and help better to promote the organization (Waters et al. 2009).

The greatest weakness in the case of the Greek NPOs, however, appears to be their failure to make full use of the interactive nature of Facebook, which permits greater user involvement with the organization. It could be argued that their Facebook pages are mainly used as a one-way medium of communication. Most of them simply provide their e-mail address and/or phone number to let the public communicate with the organization, and almost half of them allow users to post reviews. They do not provide opportunities for donations or information about volunteering with the organization, and they do not have e-stores or discussion forums.

NPO's action, however, relies largely on contributions, volunteerism, and fundraising. A more effective use of Facebook could increase user involvement, contribute to relationship development between an organization and its publics, and foster active support of the organization in a variety of ways (Cho and Huh 2010). Many NPOs, however, lack the resources or the time that would allow them to maintain a constant, two-way communication with their publics via Facebook (Waters et al. 2009).

Conclusions and Suggestions for Further Research

The study shows that the majority of Greek NPOs use Facebook as a PR tool for promotional and communicational purposes. They could, however, place more emphasis on engagement and aim to get users more involved in their activities. The social media generally lend themselves to this type of communication. It would, therefore, be in their interest for NPOs to invest in an integrated online

communication strategy (Kaplan and Haenlein 2010) that would include a professional Facebook page.

Facebook is a new, very popular and effective means of communication worldwide. As such, it lends itself to further research. It would be interesting to study how other organizations in different countries are using Facebook and to examine qualitative aspects of Facebook pages, such as their level of professionalism, update frequency, how well they project news items and press releases about the organization, the quality of their posts, and other such data, to help organizations promote themselves and communicate with their publics effectively. These aspects were not studied in this research, or in the work of Waters et al. (2009) and Haigh et al. (2013). It would also be very interesting to study the impact a highly professional Facebook page would have on an organization's recognizability, user engagement, and the achievement of its objectives.

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Specifics of Marketing in the Process of Reintegration of Slovak Researchers

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Abstract The topic of mobility, return, and subsequent reintegration of Slovak researchers is very important and timely. The Ministry of Education is currently preparing new grants for Slovak scientists and experts abroad who are considering return. Reintegration of experienced researchers, however, is a complex process that requires mainly the application of relationship marketing. When establishing relations and cooperation with foreign research organizations, it is necessary to choose the appropriate communication channel and the proper way of addressing these organizations. Based on the detailed analysis of literary sources and conducted research, the aim of this paper is to point out the specifics of marketing in the process of reintegration of Slovak researchers and create successful recommendations for reaching this target group. Different methods were used to solve defined research problems. In particular, these were content analysis (studying of documents), synthesis, comparative analysis, process analysis, statistical analysis, modeling, methods of empirical research, and others. To arouse interest, increase willingness to return and subsequently manage actual return of researchers there was proposed detailed process for successful addressing of Slovak researchers working abroad. To successfully develop the process, it was crucial to map the cooperation of enterprises with foreign research organizations and motivational factors of Slovak researchers to remain in foreign research organization as well as to return to Slovakia. The recommendations for successful marketing activities in the process of reintegration of Slovak researchers were described and areas of potential problems that may arise as a result of specifics of marketing were pointed out.

Keywords Reintegration · Marketing · Slovak researchers · Marketing communication

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Introduction

To maintain advanced researchers at the university is crucial in order to remain innovative and progressive. This can be only achieved by motivating these researchers to stay at their home universities and continue in their innovative research. Unfortunately, we witnessed significant brain drain and Slovak universities that are continuously losing skilled researchers. Reintegration of high-skilled Slovak researchers working abroad is a real problem that we perceive more intensively these days (Šramová et al. 2015). Young researchers move abroad due to several reasons, usually to have better conditions for their work and life. Most of the best students apply for Ph.D. studies at prestige universities and therefore we are losing top researchers. Once they move abroad and find a job, it is very hard to get them back. There are many factors which have impact on decision-making of researchers working abroad thinking about returning to their home country.

Based on the detailed analysis of literary sources and conducted research, the aim of this paper is to point out the specifics of marketing in the process of reintegration of Slovak researchers and create successful recommendations for reaching this target group.

The Current State of Dealing with the Issue

Researchers are large group of people which are responsible for the development of the country, innovation, revolutionary changes, economic development, creating new knowledge, its sharing, etc. One way how to develop this knowledge and increase its value is to support the research mobility through different countries. Knowledge sharing among researchers can significantly contribute to the development of several countries by increasing “gross domestic product (GDP), gross national product (GNP), the per capita income, level of industrialization, amount of widespread infrastructure and general standard of living” (Investopedia 2015).

Research mobility is associated with the famous problem of the brain drain. A number of factors cause that lots of valuable and clever researchers are moving to another country, e.g., an oppressive political system, lack of job opportunities and social problems such as crime, insufficient health care, and low quality education (Thorn and Holm-Nielsen 2006; Bhagwati and Hamada 1974), better economic conditions in the field of research and education, scientific and academic environment, research institutes, prestige, access to knowledge, personal relationships, personal and family problems, gaining knowledge and recognition necessary for career advancement in the country of origin, etc. (Baruffaldi and Landoni 2012; Jonkers and Cruz-Castro 2013).

Baruffaldi and Landoni (2012) suggest that researchers working abroad should maintain and develop ties with their home country in the field of research, awareness about the current state of the economy, jobs, etc. Ackers (2005)

highlights the importance of these links which he considers as crucial for tracking opportunities and the necessary information for the return of the researcher. Gill (2005) considers these ties as necessary for reintegration of the researcher in the national labor market. Thorn and Holm-Nielsen (2006), however, point out that the creation of such bonds may not be easy. Research and other relevant institutions operating in the home country play an important role in this process.

Many authors were examining the motivational factors of researchers moving abroad—yet the clear answer on this problematic remain a mystery. We can say that there are various factors which influence researchers to move abroad (political, economic, personal, etc.) (Šramová et al. 2014).

Results of the Empirical Research

Research was conducted by the Netmarketer Company for the needs of the project in which the authors act as principal investigators. Research lasted 4 months from September to December 2013 and 92 respondents participated in it (Slovak researchers working abroad).

Researchers working abroad were asked to express their views in terms of the importance they give to each factor affecting their decision to move their research activities from abroad to Slovakia. Pareto analysis was used for results processing. Subsequently, on the basis of the acquired data it was possible to divide factors into three groups. The first group consisted of so-called key factors (very important), which have a major impact on the decisions of researchers on the issue of transfer of their research activities from abroad to Slovakia. Considering that the following key factors were: salary, sufficiently large financial grant to conduct their research, experts who can collaborate with them on their research.

On the basis of these factors it can be concluded that the main motivators of researchers to move their research from abroad to Slovakia are financial and personnel. The financial side should be divided into two main groups, namely, financing research through sufficient funding and financing research fellow itself. Personal page includes in particular the existence of a quality research team, i.e., experts who could participate in the research of the researcher.

Second group includes important factors that researchers definitely took into account when considering the transfer of their research from abroad to Slovakia. Considering that the following key factors were:

- family or other personal reasons,
- high-quality technological equipment for realization of their research,
- long-term job security,
- pleasant working environment,
- change in the management of the school system by the country,
- international prestige of the research institute,

- interest in participating in the development of science/research in Slovakia,
- social security,
- prestigious perception of researchers (and teachers) by public.

On the basis of these factors it can be concluded that the important motivators for researchers to move their research from abroad to Slovakia are individual and institutional. Personal side includes in particular family, personal reasons, social security including long-term job security. It also includes a personal interest of researcher's contribution to the development of science and research in Slovakia. Institutional side means demands on research institution where researchers should conduct their research activities. In particular, researchers highlighted the question of institutional technological equipment, ensuring a pleasant working environment and the issue of international prestige of research institutions.

The third group consists of least important (almost irrelevant) factors that are least affecting the decision-making process of the researcher in the issue of transfer of its research activities from abroad to Slovakia. Considering that the least important factors were

- high professional prestige of a person with experience from abroad,
- high social prestige of the workplace in Slovakia,
- possibility of success on the labor market in the field they studied,
- maintaining contact with the home institution,
- opportunity to use their native language,
- pride of Slovak origin.

Based on these factors it can be concluded that the least important motivators of researchers to move their research from abroad to Slovakia are national factors, mainly the question of pride in Slovak origin, keeping in touch with home institution, prestige workplace in Slovakia, and the possibility of success on the labor market in the former studied field.

By χ^2 test, we test the correlation between attitude of researchers to return to Slovakia and their satisfaction with established conditions in foreign research institutions. The result of this hypothesis is important in identifying attitude of researchers in dependency on their satisfaction with the conditions created in a foreign research institution. Since there is no relationship between the examined variables, it can be assumed that researchers will be willing to move their research activities abroad back to Slovakia if they have created favorable conditions for them (financial, personnel, and research).

Attracting Slovak Researchers Working Abroad

For the purpose of active attracting and reaching of Slovak researchers working abroad there can be used social media such as Facebook, Twitter, LinkedIn, and Google+. In the context of addressing Slovak scientists, it is necessary to focus on

Facebook pages and groups whose members are Slovak scientists working abroad. Facebook group ERANET-MUNDUS can be used as an example. Currently, there is lack of such communities therefore it could be interesting to create specific group and subsequently achieve receiving of membership requests by responding on invitation of current members. Targeted marketing communication can also be used for virality. Interesting can be cooperation with organizations that are dealing with the reintegration question which can approach Slovak researchers via their existing networks, e.g., EURAXESS.

In case that domestic research institution has contacts on Slovak researchers working abroad, they can be reached by regular newsletter. Its content should be focused on information supporting change of their attitude toward their return. For example it can include current job vacancies offered by domestic research institution, information concerning possibilities of getting financial grants, funding of science in Slovakia, examples of good practice based on interviews with Slovak scientists who decided to go back to Slovakia.

Due to the specific target group (in case of active addressing of Slovak scientists working abroad) it is not possible to use mass promotion. The costs of addressing such mass of people would be ineffectively incurred and the result of such approach will have minimal success in terms of addressing just a few individuals. It is therefore important to focus on the targeted direct marketing. This means to actively seek Slovak scientists working abroad and approach them individually. In this case, it is important that domestic research institution has contact on these scientists.

Another effective mean of active addressing of scientists is the ability to use word of mouth marketing approach. Particularly in the case of group A, i.e., young scientists with short research stay, it is possible to redirect communication to Slovak scientists who have returned from abroad and are working in the domestic research institutions. Those on the basis of their own experience can help to change the attitude of Slovak scientists operating abroad and getting them to think on their return to Slovakia.

Within the creation of favorable conditions for active addressing of Slovak scientists working abroad it is necessary to make appropriate use of the possibility of working with the public, i.e., public relations (PR). Such indirect promotional action can help to spread the word to Slovak scientists working abroad on the basis of which they create positive opinion on the reintegration issue. PR can help to generate the desired attitudes necessary for a successful (short-term or long-term) return to Slovakia. To achieve the success of PR, it is crucial to cooperate with the self-governing regions and regional media that would help to spread the message and to create awareness of the possibilities for the return of Slovak scientists back to Slovakia.

Another option is to create a space for personal meetings and delivering the message directly within an organized event to which the Slovak scientists working abroad are invited. Space for communication is also created within the scientific conferences, symposia, and workshops, where the target group is participating. An interesting idea of how to approach and then achieve a change of attitude, especially of Slovak scientists who are abroad for long time, is offering them the possibility of

trying out to partially work at domestic research institutions, such as visiting professor or mentor within an existing research team, with specified conditions for continuing in their research field.

As an indirect form of addressing, Slovak scientists working abroad can be considered webpage of domestic research institution, as well as its pages on social networks. Here it is necessary that these pages are providing up to date and relevant information interesting to Slovak scientists working abroad. Such information can be about current research projects in which they can participate, about the research environment which provides researchers opportunities to conduct their research, or interviews with Slovak scientists who returned back to Slovakia and operate in the domestic research institutions.

Within the social networks, the domestic research institution can gradually build its community on their, e.g., Facebook page and keep them informed about all current events and news. In particular, social networks have the opportunity to interact with existing researchers and exchange their opinions and experiences. For interaction, it is usually necessary to be member of such page (e.g., Facebook).

Conclusion

Every researcher has different values therefore to find his right motives and bringing him back remains challenging for universities. Our analysis resulted that if we improve conditions in our country we might attract these researchers to come back, however, it is not always the case. We might also improve the communication between our university and foreign university where our researchers are currently working so we might better prepare conditions for their easier return. To communicate with researchers, universities have to keep statistics about researchers moving abroad. However, universities still consider creating databases as unnecessary and they do not care about their students when they move abroad and apply for Ph.D. studies.

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Eye Tracking Measuring of Visual Perception of Erotic Appeals in the Content of Printed Advertising Communications and Analysis of Their Impact on Consumers

Tomáš Šula, Milan Banyár and Martina Juříková

Abstract This article focuses on an analysis of printed advertising communications. The focus of the research is based on measuring the reactions of chosen samples of respondents on static advertisement, whose goal is to determine the prediction of the impact of erotic appeal on a consumer. The theoretical results are then complemented with a description of the implementation of the research, interpretation of results of eye-camera measuring, and formulation of final recommendations concerning efficiency of the application of erotic appeal in advertising.

Keywords Advertisement · Visual perception · Erotic appeals · Sex in advertising · Eye camera

Erotic Appeals and Their Impact on the Consumer

Erotic appeal belongs among the most commonly used, yet at the same time the most controversial emotional appeals. “As erotica, we understand here mostly sexual love, summary of sexual displays and sensuality. On the contrary, porn is more of a sign for something which is not chaste, indecent and immoral; it is a display of a usually naked human body, erotic scenes and also coitus. As it is obvious from the short characteristics mentioned above, erotica, sex and porn are often related and their use in advertisement mingles in many cases (Horňák 2014).” The use of erotic appeals in advertising communications is influenced by several factors (cultural, social, ethical, legislative, etc.) that are necessary to take into consideration even during the drafting of the advertising campaign and before

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releasing it. “When using erotic elements, marketers have to take into account gender points of view, rate of erotica, threatening of moral upbringing of children, etc. This kind of advert is restricted by legislative and ethical code, but most importantly, it is necessary to consider how appropriate it is relating to the product, brand and target group. It also depends on accepting of sexuality in society (Vysekalová et al. 2014).”

For instance, in his book, P. de Pelsmacker points out the following: erotica lowers remembering the brand and the advertising message, and the stronger the erotic drive—or, more precisely, the more sexuality in many forms of naked or suggestive sexual entries that are used in the advertisement—the more negative the reaction to the advertisement. The stronger the erotic appeal in connection with the product, the more positive the feedback can be; that is, the erotic appeal is more effective if it is connected to the products being promoted and not used in general or as an end in itself (e.g., with products such as underwear, shaving cream, alcoholic drinks, cosmetics, perfumes, etc., it is not only appropriate to use erotic appeal, but in many cases also inevitable). Men react to erotic motives much more positively than women (Pelsmacker et al. 2003). Based on the above-mentioned facts, it is possible to add that different kinds of erotic appeals are judged differently by targeted groups of customers, and to a different extent lead to different communicative effects, such as lightly hinted-at erotic appeal or erotic appeal combined with humor, which is perceived a lot more positively than apparent and controversial sex symbols, which do not have to be accepted by every consumer.

Method of Measuring with Eye Camera and Its Application in Marketing Research

“Eye tracking is used in optimization of advertisement since 60s of the last century. The system comes from the findings of the eye medicine about the visual acuity in field of the sight of a human and focuses on identification and following of mostly foveae vision. The eye camera is positioned in a particular way, on the head of the participant (for example as special glasses, hard hat, etc.). The alternative is the eye camera built in a device which the respondent is watching (Jurášková et al. 2012).”

In general, within the framework of the research and with the help of the eye camera, two basic types of eye cameras are used: the static eye camera, or the mobile eye camera.

The static eye camera is positioned on the computer in such a way that it is able to record the eye movements of the respondent. Currently, the recording panel is removable in most of them, so it is possible to implement the research on different types and sizes of displays according to current needs (Constat.cz [online]).

The mobile eye camera is built-in, non-dioptic glasses that record not only eye movement but also the scene that the respondent is watching. Some types also have

an integrated microphone, recording the remarks of the respondent during measuring (Constat.cz [online]).

In the framework of this research, a static eye camera with the following parameters was used: 60 Hz sampling rate, 1° accuracy, <20 ms latency, calibration at 12 points with a 40 × 30 cm tracking area, using a 21 monitor with an RGB space of a 1920 × 1080 resolution and 1280 × 1080 of screen. On output, there are heat maps in a few styles (burntroughs, maxheat, scanpath, gaze plot, gaze opacity, etc.) and in table using excel output format with single fixations and its parameters.

On the basis of measuring done with an eye camera, it is possible to consequently create the following types of outputs, used for evaluating the research and interpreting the results: heat map, gaze plot, and gaze opacity map. The heat map illustrates the movements of respondents in an examined area, no matter whether it is, for instance, moving with a mouse pointer on a Web site, or eye movement. The more intensive the activities and fixations on particular places, the “warmer” the place. From the blue color, the temperature scale intensifies to red, which represents the highest activity of the vision field. The outcome is then an intersection of the measuring of all tested respondents together or, for example, dividing the respondents into groups of men and women, as in our test case (Eyetracking.com [online]).

The gaze plot is focused on the display of a areas, order, and duration of a visual fixation. It is used mainly for static visual perception and it shows the results of each respondent individually. The display of order and duration of fixation can show the cumulative results of respondents, which can be displayed simultaneously. The diameter of the circle equals the length of fixation, and it grows with time (Eyetracking.com [online]).

A gaze opacity map is a type of outcome that depicts the areas in which the visual fixations of the respondent took place. It is often called a “reverse heat map,” because although the outcome is similar to a heat map, the areas the respondent focuses on are not covered by a temperature map, but the areas that the respondents missed are darker. The results displayed are more precise because in a gaze opacity map, the ignored areas are darker and therefore only the parts of the advertisements that attracted the eye of the respondent appear brighter (The Digital Marketing Glossary [online]).

Current State of the Research Topic

Within the framework of research on the influence of sexism in advertising on a recipient’s attention, research thus far focuses only on conscious reaction, which is the personal attitude of the recipient to a question—accepting erotic and sexual motives in advertising. From the results of continuous research on Czech people

and advertising,¹ we can see that in general, Czechs are more and more accepting of controversial issues. In sensitive topics, we can include not only sexual motives but also attitudes to cigarettes, alcohol, drugs, and food supplements.

In light of the current discussions in society this year, opinions on religious topics were also included in the advertising. At the same time, these topics were also rated as among the most commonly refused. Research on the perception and acceptance of erotic and sexual motives in the advertisements was, until last year, in an individual category, whereas the percentage of people who refuse this kind of advertising completely (because it stimulates them) and asked for a complete ban, varied between 6 and 10 %. This year, this borderline category was not mentioned and a ban was requested by almost 25 % of the population. If the shifting of the attitudes in this field is accomplished by a change of methodology, or if people really reject these topics more often, it will be evident only in follow-up research. An international comparison of the perception of sexual motives can possibly be done on the basis of research results of the 2003 TNS Factum. Generally, erotica in advertisements were liked in this display by approximately 17 % of the Czech people, whereas in Poland, for example, only about 8 % of the people liked it. If the erotic motive is appropriate for promoting a particular product, the advertisement was favored even by 34 % of Czech people.

Methodology

Davis points out that eye tracking research monitors the manner in which a visual stimulus is processed. The six key measures obtained from eye tracking research are: first fixation; time to first fixation; most fixation; individual gaze time; total gaze time; and movement between elements. Eye tracking data can be presented as gaze path charts, heat maps, and opacity charts. Many researchers note that insights from eye tracking research can be increased if additional data is obtained through facial coding or retrospective interviews.

A complex research project was therefore dealt with as a two-phase project with the goal of examining the perception of erotic motives and sexist stimulus as subconscious (by means of eye tracking) and conscious (by means of individual dialogue); it points out the differences between what participants of the survey say and what they really gave long-term eye contact to—that is, what impulses they really focused on, in what order, and whether they came back and spent time on individual “spots.”

¹Continuous research on the attitude of Czech society to advertising has been taking place in the Czech Republic since 1993 and is currently done by agency ppm factum Perhaps this should be capitalized research (previously Markttest, a.s.) on a representative sampling of people. The submitters of this research are the Czech Marketing Association (CMA), POPAI, and the Czech Association for Brand Products (CABP).

The research was carried out as a case study of a qualitative character, which means that it is not possible to generalize the results of the survey, given its extent. It has been designed as some kind of pre-test, the results of which—combined with the results of dialogue—can outline the perception of sexist advertisements by respondents and therefore show the necessity or uselessness of further in-depth and extensive surveys. For this survey, visuals of static ads for products of competing brands were always chosen with and without sexist motives. A researched sample, in which there will be ads with sex motives and also without, were tested on eight participants. Testing with an eye camera took place before the dialogues, so the respondents were not influenced by previous questions regarding the perception of the advertisements, sexual motives, etc., and also by the dialogue about each of the researched ads. The ads containing sexual motives were obtained from the archives of the competition (“sexist little pig”) and their pre-choice was made by independent association (“nesehnuti—not bent down”), which has a long-term focus on the issue of sexism and gender stereotypes. Considering the aim of the research, it was not necessary to have a more extensive sampling; therefore, five ads were chosen, mostly from different years of competition. Additionally, competing ads were chosen from companies in the same field. Participants of this research were addressed in person, and in the final sample there was an equal number of men and women. All the respondents were university-educated and under 25 years of age. The same group of respondents took part in both surveys (dialogues and user testing), so that the continuity between surveys is preserved. The subject matter of this article is (considering its extent) analysis and discussion of the first part of the research, i.e., qualitative eye camera testing.

The study was funded by the “System Change in Discriminatory Display of Women and Men in Advertising” project, which was carried out by “NESEHNUTI” Brno. The project was also funded by “Open Society Fund” in Prague from the “Let’s Give Women (Us) the Chance,” which is financed by Nordic funds.

Interpretation

In the basic findings concluded from the testing, we take into account the fact that men were much more sensitive than women in cases when there are texts on tested visual materials that have a direct connection to erotic motives. These texts are used in a way to describe, explain, or, more precisely, introduce the functionality of the product or services offered, but at the same time they carry the erotic motive (Fig. 1). The above-mentioned facts are obviously valid only in cases where tested visual materials contained such information. In the case of visual elements, where there were no erotic motives, and used for qualitative testing, the outcomes from the

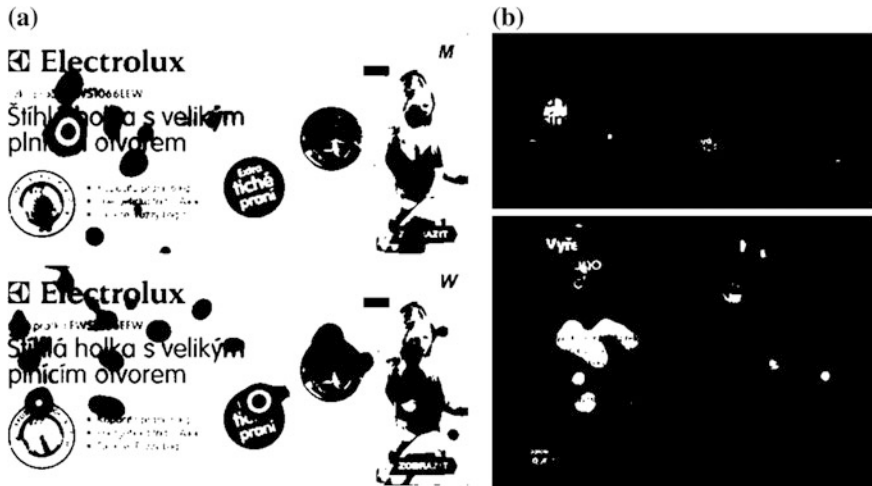


Fig. 1 a Fixation MAN on erotic motive expressed by text (slim girl with a big filling hole), b Burnthrough map

eye camera differed less between the sexes. Regarding visual erotic elements, we can claim that men fix their gaze on intimate parts of a body in general, when the testing photo is a woman. When these motives were measured among women, the results were similar women did not pay as intensive attention to these particular spots as men but were able to track the other parts of visual testing also. Therefore we can draw the conclusion that women from the chosen group were able to perceive more claims time-wisely, but with a shorter fix on the object with the erotic motive.

Secondary findings regarding comparison of advertising visuals: In the case of women, the measuring proved that within the framework of wide and narrow scanning of visual content, they are more sensitive to visual-text elements that we can regard as so-called CTA (call-to-action) areas, where communication encouragements are shown to elicit the action. In the case of commercial claims, the action can be understood; for example, the sale of a product, free transport, or uncommon characteristics of a given product, or generally within the framework of a given group of respondents, there are identical characteristics that are a fixation on photography showing a person. Considering the fact that the group that was tested is strictly limited socio-economically, demographically, and geographically, the results can be generalized only for this group. It is also necessary to mention the fact that in advertising claims that were given for testing, in the case of portraying a person, the display was always authentic due to the use of photography; in other words, there was never a person showed conventionalized only in realistic looks on the tested materials.

Discussion and Conclusions

In the long run, erotic appeals are an essential part of a communication. However, the question remains about whether these appeals are perceived differently and therefore it is not possible to specify how they influence the recipients. If we wanted a definite answer, it would be necessary to conduct research on the complete process of purchasing and customer behavior from the emotional and also physiological points of view, so we can explain emotional behavior in relation to body behavior, and, based on these results, clearly specify the influence of the communication on the recipient. On the basis of the qualitative testing performed, we can state that the perception of advertising claims is different for men and for women, and it is possible to make use of this when creating advertising communications.

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Perceived Behavioural Control in the Theory of Planned Behaviour: Variability of Conceptualization and Operationalization and Implications for Measurement

Stavros Kiriakidis

Abstract Ajzen (Organizational Behavior and Human Decision Processes 50:179–211, 1991, Annual Review of Psychology 52:27–58, 2001) argued that according to the Theory of Planned Behavior (TPB), a model widely applied in consumer behaviour research, people act in accordance with their intentions and perceptions of control over the behavior. Intentions are determined by attitude towards the behavior, a personal factor, and a social factor, subjective norm, perceived social pressures from significant referents to perform the behavior and the actors' motivation to comply with the referents. Attitude and subjective norm are in turn determined by the salient beliefs people hold about the behavior. The TPB extends the Theory of Reasoned Action (TRA) by including a third determinant of intention and behavior, perceived behavioral control (PBC). PBC is assumed to reflect past experience with the performance of the behavior and anticipated obstacles that could inhibit behavior. It seems that the concept of PBC is not defined in a way that is acceptable by every researcher. There has been a variety of operationalisations among researchers and different labeling of the measures used in the literature. It is proposed that factors internal to the individual could be phrased and assessed in terms of ability and factors external to the individual in terms of control. This clarification of the dimensions of PBC would be helpful in consumer behaviour research, as it is expected to enhance the reliability and validity of the definition of the concept of PBC and accordingly enhance the predictive accuracy of both the variable of PBC and the model of the TPB.

Keywords Theory of planned behaviour · Perceived behavioural control (PBC)

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Perceived Behavioural Control (PBC): Variability of Conceptualisation and Operationalisation

Terry and O'Leary (1995) recognised the necessity of the inclusion of PBC in the TRA, which is generally supported in the literature. However, they raised questions about the conceptualisation of the construct and noted that the meaning of the construct had not been clarified. Based on the initial conceptualisation of PBC by Ajzen (1985), Ajzen and Madden (1986) who claimed that PBC and self-efficacy were similar, they argued that the two variables were separate and independent, and both the conceptualisation and operationalisation of PBC have been confounded by measuring them interchangeably.

Terry and O'Leary (1995) argued that behavioural control could be distinguished according to an external–internal dimension. Self-efficacy, reflecting internal factors of control, while PBC reflecting external factors. They further explored the compatibility of that distinction with the two versions of the TPB proposed by Ajzen (1985). Perceived control, to the extent that it is an accurate estimation of the factors interfering with the behaviour, can directly influence behaviour, as actual behavioural performance depends on external factors, while exerting a motivational influence on behaviour mediated by intentions, as perceived controllability of a behaviour could strengthen one's motivation. On the other hand, self-efficacy beliefs are supposed to influence behaviour only indirectly, exerting a motivational influence on behaviour through the mediation of intentions. The results of the study supported the distinction of the two variables. A combined measure of self-efficacy and perceived control did not fit adequately to the data, suggesting the independence of the two measures. Yet, at the same time, the two measures correlated significantly, making obvious the need for further research to establish the discriminant validity of measures of self-efficacy and PBC. Perceived control exerted a direct effect on actual behaviour, supporting the theoretical propositions of the TPB, and making obvious the role of control on external factors for successful behavioural attainment.

Terry and O'Leary (1995) further reported that there was a significant interaction effect of perceived control and intentions on behaviour. This finding, although in line with the original propositions of Ajzen (1985) of an interactive effect of motivation and opportunities on behaviour, is not in accord with previous research that has either, revealed no interaction effects of intentions and control on behaviour, or has marginally supported it. Terry and O'Leary (1995) noted that, the failure of previous research to support this proposition might have been due to the confounding of the operationalisation of perceived control, where self-efficacy and perceived control were measured in an unidimensional way, thus masking the proposed interaction effects of intentions and control on behaviour. On the other hand, perceived control did not influence intentions and its influence on behaviour was fully mediated by intentions. This finding was neither in line with previous research nor with the propositions of Ajzen (1985). The authors attributed that to the behaviour under study, regular exercise, was a behaviour mainly under control.

Moreover, self-efficacy predicted intentions as expected, and the authors suggested that previous influences of perceived control on intentions reported in the literature, might have been due to the fact that the construct of control was measured by items tapping both efficacy expectancies and perceived control over external factors. Overall, the study suggested that a distinction of the notion of control, within the TPB, is a fruitful way to expand the predictive performance of the model, while at the same time clarifying its conceptual basis.

Sparks, Guthrie and Shepherd (1997), recognised the need for the clarification of the issue of control. They agreed that control might not be a unidimensional construct and proposed a distinction in the operationalisation of PBC in terms of difficulty and control. They do not agree with Terry and O'Leary (1995) who equated PBC (referring to external control factors) with outcome expectancies. Sparks et al. (1997) argued that outcome expectancies are similar to the behavioural beliefs within the TPB, which determine attitudes, by linking a behaviour to an outcome or an attribute. They, also, raised questions about the argument of Terry and O'Leary (1995) that "there may not be a correspondence between the person's perception of the extent to which external barriers may impede the performance of the behaviour and his or her judgment that the behaviour will be easy to perform" (Terry and O'Leary 1995: 202) by stating that there is no reason to reject the incorporation of different factors within the same construct, even if these factors exert a different influence on behaviour, as e.g. some factors facilitating behaviour and others inhibiting it. They, nonetheless, agreed that PBC might be a multidimensional variable, yet they provide a different base for their argument, the "conceptual distinctions between control and difficulty issues that are embodied in PBC" (Sparks et al. 1997: 431). Perceived difficulty emerged as a significant predictor of intentions in their second study, (in the first study perceived difficulty had a marginal effect on intentions), whereas perceived control did not predict intentions in both studies. The results, as the authors noted, are similar to those obtained by Terry and O'Leary (1995), yet the theoretical arguments provided by the researchers differ. Sparks et al. (1997) attributed the similarities of the studies in the same operationalisation of the constructs.¹

Manstead and van Eekelen (1998) noted that the results of the aforementioned studies might not depart conceptually. As the same wording is used for the operationalisation of self-efficacy in the former and perceived difficulty in the second, there is a possibility that perceived difficulty was actually interpreted by the subjects as referring more to internal factors of control rather than external factors. This possibility of the subjects' interpretation make the findings of the studies quite compatible.

Manstead and van Eekelen (1998), accepting the possible multidimensional structure of the concept of control, further explored this issue in the domain of

¹Terry and O'Leary (1995) operationalised self-efficacy in terms of ease or difficulty of performing the behaviour, and perceived behavioural control in terms of control. Sparks et al. (1997) employed the same dual operationalisation as two dimensions within the perceived behavioural control variable, yet obviously, they did not share the same meaning.

academic achievement, for the extension of the results in a different domain from those where the issue of control was examined before and because academic achievement is regarded as a behaviour under the influence of both internal and external to the individual factors. A sample of 171 high school students completed a questionnaire assessing the main components of the TRA, past behaviour, as the grades the students had achieved, and six items used in the literature to assess PBC. As a measurement of actual behaviour, the actual grades achieved in the exams for three subjects were considered. The six control items were factor analysed and two factors emerged accounting from 75 to 82 % of the variance in each subject. The authors interpreted the first factor (How confident are you?, I am certain that I can, Difficult-easy) as reflecting “confidence in one’s ability to achieve the behavioural outcome” (ibid: 1381) and the second factor (There is a lot that I can do, Completely up to me, How much control do you have?) as appearing “to reflect an assessment of the degree to which one can influence the behavioural outcome.” (ibid: 1381). Self-efficacy was found to be a significant and independent predictor of behavioural intentions in the three subjects while perceived control was not. This finding was, according to the authors, consistent with previous research (e.g. Terry and O’Leary 1995).

In addition, self-efficacy predicted actual behaviour, yet perceived control failed to do so. This result was not consistent with previous research and the authors recognise the variability in the operationalisation of the constructs and the behavioural domains examined across the studies and they attribute to that, the inconsistencies observed, suggesting a “more coordinated approach to future research efforts” (Manstead and van Eekelen 1998: 1389). It is clear from the interpretation given to the second factor, PBC, that emerged from the factor analysis of the study, “a belief that the outcome can be influenced by one’s efforts” (Manstead and van Eekelen 1998: 1387), that the authors relate it very closely to the notion of locus of control proposed by Rotter (1966 cf Bandura 1997), “behaviour is influenced by generalised expectancies that outcomes are determined either by one’s actions or by external forces beyond one’s control” (Bandura 1997: 19). Yet while the construct of locus of control was conceptualised as “a generalised expectancy that remains stable across situations” (Ajzen 1991: 183), Manstead and van Eekelen (1998), in line with the fact that “an emphasis on factors that are directly linked to a particular behaviour” (Ajzen 1991: 183) is characteristic of the operationalisation of the constructs in the TPB, featuring a methodological and theoretical advance in the prediction of behaviour, operationalised the construct of PBC accordingly. That is to reflect the meaning of locus of control as proposed by Rotter (1966 cf Bandura 1997), yet to assess it for the specific behaviour and not as a generalised expectancy about every kind of behaviour. While this was an attempt to identify specific dimensions in the variable of PBC, it was not consistent with what Ajzen (1991) had defined as PBC. That is “PBC refers to people’s perception of the ease or difficulty of performing the behaviour of interest” (Ajzen 1991: 183).

It could still be argued that, as the main difference between the two constructs, as identified by Ajzen (1991), is that locus of control is stable and generalised, while PBC varies across situations and actions, and based on the findings in the literature

that prediction of behaviour is better when the antecedent variables are operationalised in the same level of specificity in terms of context, time, action and target, the operationalisation of locus of control accordingly could provide a fruitful way in examining the multidimensionality of control. Regarding this issue, Bandura (1997) argued that the two concepts, that is self-efficacy and locus of control, are conceptually different. "Perceived self-efficacy and locus of control are sometimes mistakenly viewed as essentially the same phenomenon measured at different levels of generality. In point of fact they represent entirely different phenomena. Beliefs about whether one can produce certain actions (perceived self-efficacy) cannot be considered the same as beliefs about whether actions affect outcomes (locus of control) (Bandura 1997: 20). Bandura (1997), also argues that the predictive performance of the traditional locus of control concept, has not received much support from the literature, and the same is true when locus of control is operationalised to measure specific behaviours (e.g. health locus of control).

The results of Manstead and van Eekelen (1998), who operationalised PBC very closely to the notion of locus of control, tailored for academic achievement, are consistent with the above statement about the predictive performance of the construct of locus of control. Still, whether locus of control, either generalised or tailored to specific behaviours, can provide a way for further exploring the dimensionality of PBC, has to be empirically established in other behavioural domains.

It seems that the concept of PBC, is not defined in a way that is acceptable by every researcher. There has been a variety of operationalisations among researchers and different labeling of the measures used in the literature. It has been related closely to the notion of self-efficacy (Ajzen 1991), divided in reflecting internal and external to the individual factors of control (Terry and O'Leary 1995), perceived difficulty and perceived control (Sparks et al. 1997) and reflecting self-efficacy and locus of control (Manstead and van Eekelen 1998). The diversity of the internal consistency of the measures used in studies further suggests that PBC might be a multidimensional construct (Conner and Armitage 1998; Manstead and Parker 1995). Peterson (1990: 243, cited in Sparks et al. 1997: 433) concluded that "I think it is fair to say that the measurement of personal control has lagged behind other aspects of its study, giving us a line of research with poor reliability but spectacular validity".

Although Ajzen (1991) has noted the similarities of PBC with self-efficacy (Bandura 1997), the instructions provided by the two scholars for the operationalisation of the constructs differ. Attempts at the refinement of the measurement of the construct, as well as conceptual consensus of its meaning and the factors that might compose it, in addition to "the predictive effects of different PBC measures for different samples and in diverse behavioural domains" (Sparks et al. 1997: 434) provide useful guidelines for the study of PBC.

In line with Terry and O'Leary (1995), who argued that self-efficacy refers to internal factors and perceived control to external to the individual factors, and Sparks et al. (1997) who argued that PBC can be assessed in terms of difficulty and control, factors internal to the individual could be phrased and assessed in terms of ability and factors external to the individual in terms of control.

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The Cultural Organizations' Revival Lies in the Use of Business Management Strategy. The Case Study of Greek Local Cultural Organizations

Lamprini Trivella, Dimitrios K. Nasiopoulos and Panagiotis Trivellas

Abstract Business Management Strategy (BMS) helps the cultural organizations to become active and entangled with the multicultural society, the global scene of culture and the political scene. The BMS leads the cultural organizations' economic status to a successful level, improves their relationship with the multicultural society and advances mainly their service provision. Under these circumstances, business' management strategy (BMS) becomes a managerial tool for the cultural organizations' entrance in the constantly changing, competitive environment, as it is flexible and adaptable to the demands, desires and expectations of the public. In this framework, the use of a simulation model can be a tool for the effective business' management strategy and also can highlight the need of its development so as the cultural organizations can meet the imminent global competitiveness. Our study can be a reference point, which tends to provide useful information for the forthcoming effective operation of cultural organizations of Greece that can be related to the business' management strategy. This model is based on the cultural organizations of municipalities of Greece, which on one hand they follow the strong conservative policies of the government's sector of public services, existing in a state of rest, and on the other hand they are forced to change, to be more innovative and active in accordance with the European Council's policy for transnational cooperation and cohesion in the field of culture.

Keywords Cultural organizations · Business management strategy · Municipalities · Cultural goods · Dynamic simulation model

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Cultural Organizations

The cultural organizations are plenty and varied, according to the kind of art they are servicing such as art galleries, museums, bands of municipalities, operas, theaters, libraries, cultural centers of the municipalities and others. They are classified according to their economic status (public, private non-profit, private for profit) (Kovach 1989). They constitute systems of management that operate on the basis of public interest and provide, manage and boost cultural goods both tangible and services (intangible) (Gantzias 2008). Also, they form a part of the constantly changing society, so they have to adapt to this environment (Griffin 2009).

They differ from other business organizations in services, funding and objectives. Specifically, all the cultural organizations are not functioning in an entirely economic level because of their services that are aiming at the public interest. Also, they are supported partly or entirely by the Ministry of Culture, even if they are financed by the private sector. As for their objectives, they are consisted by ultimate values such as entertainment, education and preservation of cultural goods such as folklore dances. (Kovach 1989; Griffin 2009; Hatton 2012).

Management and Management Strategy Within Cultural Organizations

Management is the way in which the cultural organizations operate. It forms the basis on which the structure of the system is developed. It coordinates and organizes the staff's work towards a common goal. Usually, it is characterized as hierarchical and centralized because all the actions are gathered in the authority of the cultural manager (Koutouzis 1999).

Management strategy is a term borrowed from the world of business for its successful implementation, which boosts the organizations' efficiency. It is an amount of carefully designed actions, which aim at a specific goal and the subsequent decisions that have to be taken (Williamson et al. 2004). So, if cultural organizations are to survive, they must adopt realistic plans (designed actions) and an awareness of external market forces to attract the public (Middleton 1990).

Some strong incentives that urge the cultural organizations to change are the global exposure, strategy alliances, environmentalism and interlocking directorship (Mc Kiernan 1997).

Business' Management Strategy Revives the Cultural Organizations

The global economic, social and political evolutions affect the cultural organizations, which struggle to survive in the field of culture, facing the cultural and the economic crisis of our times. The traditional bureaucratic public sector-funded cultural organizations have shown around the world their inefficiency and their costly and ineffective management (Middleton 1990). Under these circumstances, the obsolete system of management fails to be aligned with the changing environment and either the cultural organizations end up doing things in the same way, providing the same services or they are oriented to the business' management strategy to overcome their state of inertia, to do things differently to remain competitive and responsible, improving the quality of their services (Mc Kiernan 1997).

Furthermore, the cultural organizations that use business' management strategy have overcome their difficulties and have improved the quality of their services to attract the public, such as the Milwaukee Art Museum (Wisconsin) in the USA (Zounis 2008). However, the large proportion of the small-scale cultural organizations (mainly the cultural centers of the municipalities in Greece) are currently oriented in the adoption of the business' management strategy for their survival.

Initiating Business' Management Strategy Within Greek Cultural Organizations

As it is mentioned above, in Greece mostly the small-scale cultural organizations are starting to use business' management strategy to solve their survival problems, to improve the quality of their services and to keep up with each other both in national and international level.

This situation arouses a variety of questions but for reasons of space and time we will focus on some basic questions according to our point of view.

- Do cultural organizations need business management strategy?
- What elements are essential for business management strategy operation?
- Can business management strategy be implemented in cultural organizations?

Do Cultural Organizations Need Business Management Strategy?

Considering the current situation mentioned above, the most important reasons for the necessity of the adoption of business management strategy, according to Middleton (1990), are:

- The change of the demands, desires and expectations of the public, who have become more sophisticated due to abundant information, knowledge and offer of cultural goods (tangible and intangible). So, they changed their attitude towards cultural services and products.
- The cut down on the government's funding, due to the economic crisis that urges for other priorities. So, they focused on other financial resources (fees, etc.).
- The criteria or the characteristics that cultural organizations must fulfill to enter in funding programs of Unesco, E.U. and E.C. (HEREIN project 1999) (Kyrkos 2008).
- The competitiveness of service provision, which is increasing because of the globalization and the constant evolution of the information and communication technologies (ICT).
- The recognition of the inefficient traditional management system and the recognition of the need for greater efficiency, effectiveness and added value both in public and in private sector (Chabouri-Hioanidou 2003).

What Elements Are Essential for Business Management Strategy Operation?

Taking into account all the above, business management strategy needs three elements to operate, the cultural manager who designs, organizes, coordinates and makes decisions, the staff who work, following the procedures to offer professionalized service and the processes of a detailed plan, which lead the cultural organization to success.

The **cultural manager** is usually an expert in the field of culture, but he must also have the knowledge and the skills of a business manager to lead the organization successfully to a better level socially, culturally, economically. The **staff** must know exactly what are their duties and they must collaborate with each other and they must be willing to evolve their knowledge and skills in relation with their work. The **processes** are having to do with the way in which the cultural organizations function and this situation involves a business management strategy accepted by the staff, the cultural manager, the staff and the processes interwoven and related to each other in such a way that emerges the need of governance, strategy objectives and the cultural goods (tangible and intangible services).

Can Business Management Strategy Be Achieved in Cultural Organizations?

Although the implementation of business management strategy is in question by the traditional regime of directorship, because it is thought of as a mechanism that

commercializes the cultural organizations, it is crucial for their sustainability and competitiveness. So, business management strategy can be achieved mostly by:

Governance: it involves the cultural manager and the staff who are delivering the processes and the necessary policies for the successful provision of services for the public interest. Thus, the cultural manager must have the essential scientific knowledge of culture and the skills of business management to revive the organization and attract the public.

- Ensure a consistent variety of high quality services, which are provided in a friendlier environment
- Ensure a consistent plan which is aligned to the management objectives and is coordinated with the public needs
- Cultural manager who makes well-defined decisions according to the business management strategy plan, allocate and define the roles and responsibilities of the staff
- Ensure the quality of business management by implementing standards of evaluation

Strategic objectives: they have to do with the general purpose and the mission of the cultural organizations and they are aligned with the public interest.

- Boost cooperation with other cultural organizations in national and international level and other institutes such as schools
- Provide incentives for the cultural manager and the staff to participate actively, having specific roles and responsibilities
- Improve the quality of the services provided for the public interest and facilitate services' provision

Services: they have to do with the promotion and preservation of cultural goods (tangible and intangible cultural products) and they involve the manager and the staff.

- Ensure the cultural organizations' new or modified identity is projected through the actions of both the manager and the staff and its aligned with the mission, the general purpose and the strategic objectives
- Ensure the existence of professionalism and seriousness of the cultural organizations (Weil 1994)
- Are orientated to the public needs, desires, expectations and demands, and always aim at the public interest

Dynamic Simulation Model

There is an interactive relation amongst the cultural manager, the staff and the services or the cultural goods. Furthermore, the cultural organizations' policies, the leadership and employee satisfaction are the most crucial factors formulating the

development of BMS, which in turn determine the overall service and product quality provided in cultural organizations.

Therefore, a quantitative research was conducted, concerning 350 of the 423 cultural organizations located in the center and in Attiki, Greece. The research was restricted to the local cultural organizations of the municipalities of the region of Attica for reasons of time, facilitation. It started in October in 2014 (Figs. 1 and 2).

The cultural managers (about 90 %) had not the skills and the knowledge of business management to lead the organization to efficiency, effectiveness and sustainability. The staff (about 86 %) were unwilling to evolve and update their knowledge and skills due to their low income, but the rest, the younger ones were willing to do it. The services provided by the local cultural organizations were of low quality, restricted to Folkdances, piano lessons and music lessons (295 local cultural organizations). The rest 55 ones, which belonged to the “richer” municipalities, were having a variety of more than 5 services to provide.

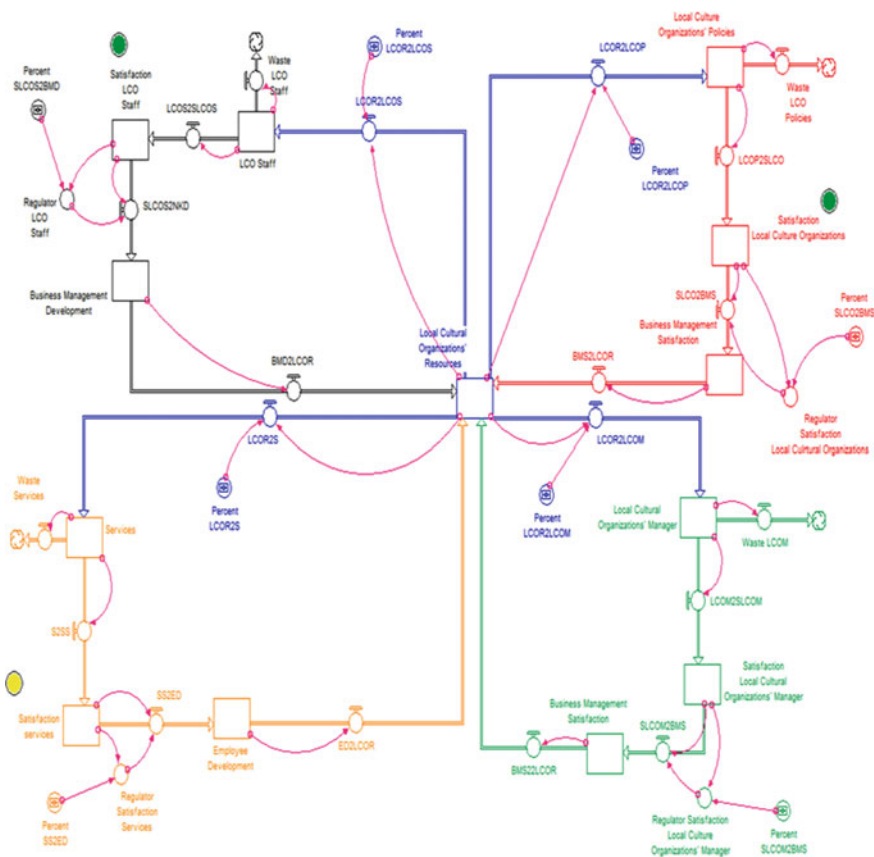


Fig. 1 Dynamic simulation model

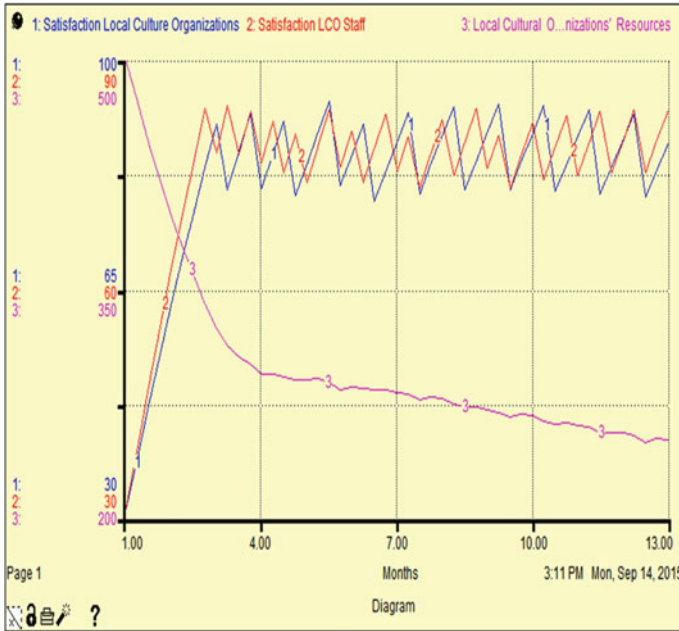


Fig. 2 Diagram

As for their policies, it was followed a centralized traditional “west” type management, following the governmental system of public services’. This means that these local cultural organizations were financially depended on the local authorities, which according to their financial status were either active and innovative or at a state of rest and homogeneity as far as it concerns the infrastructure and the service provision of the local cultural organizations.

Conclusion

In this paper, it was attempted to consider the business management strategy and its importance in local cultural organizations, although its implementation is difficult. Business management strategy is coming from the field of market but it can make the local cultural organizations operate with efficiency and effectiveness, enabling them to enter the world of competitiveness, improving the quality of their services. The findings of the survey, concerning the cultural manager, the staff, the service and the policies, showed that the younger staff and the rich municipalities were facilitating the task of business management strategy but the policies and the cultural manager were inhibiting it. Then we tried to use the findings to a dynamic simulation model to find the best possible relations among them in order to have the

best possible results with the minimum effort. It shows the strong points and the weaknesses of developing a management strategy based on business within the local cultural organizations to improve the quality of their services, to attract the public and to adapt to the new circumstances entering the world of competition and global market. In this way, there can be satisfaction of the staff, of the cultural manager and of the public (consumers of cultural tangible and intangible goods)

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Priming Effects on Cross-Cultural Business Ethical Perceptions

Petros Tomaras and John Tsalikis

Abstract This research study examines the effect of cross-cultural priming on business ethical perceptions. Priming is based on the idea that our perceptions, actions, and emotions are affected by unconscious environmental cues. Subjects were primed by being exposed to a series of pictures depicting either a northern European culture or a native Latin American culture. Consequently, the subjects answered a series of ethical scenarios. The results indicate that, for some scenarios, respondents primed with the Latin America culture were more tolerant of unethical business practices than the subjects primed with the northern European culture.

Keywords Cross-cultural business ethics · Priming · Europe · Latin America

Introduction

In the past 15 years, the wide use of fMRI (Functional Magnetic Resonance Imaging) has led to a revolution in our understanding of the human brain and its functions. In the forefront of this revolution, the social psychologist Bargh introduced the concept of priming by arguing that: “processes and behaviors thought to be under our control and caused by intentional volition are actually the result of the constant and automatic interpretation of and reaction to stimuli in our environment. These perceptions influence our thoughts and behavior, often without our awareness” (Bargh 1982).

According to Bargh our perception, actions, and emotions are distorted via stimuli in our social environment through a process called “priming.” Priming is the idea that various stimuli (subliminal, supraliminal, semantic, and visual) can influence mental representations, decision making, and ultimately the behavior of

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individuals (Bargh 2006; Higgins 1996; Bargh and Chartrand 2000; Dijksterhuis et al. 2007). Similarly, Harris et al. (2009) argues that priming demonstrates that a variety of complex social and physical behaviors can be activated by relevant external stimuli without a person's intent to behave that way or awareness of the influence.

The present study will prime individuals with images from two divergent cultures (a northern European and a native Latin American one) in order to measure the effects of cultural priming on business ethical perceptions and decision making.

Literature Review

Priming

Studies demonstrate that the effects of priming can be ongoing and reappear long after the stimulus has been absent. In a William and Bargh (2008) study, individuals who were primed with the touch of a hot drink judged target people as more caring and generous, while the opposite was true for the subjects that were primed with a cold drink. Levesque and Pelletier (2003) found that subjects that were primed with intrinsic motivation words (challenge, mastery) enjoyed the consequent task (puzzle solving) more than subjects primed with extrinsic motivation words (forced, expected). In another priming experiment, individuals who were primed with the picture of a library proceeded with speaking more quietly and softly (Aarts and Dijksterhuis 2003).

Uses of Priming in Other Fields

In addition to social psychology, research on priming has been conducted in many fields including business. In advertising, the media is a main influential source due to unconscious, subtle, and unobtrusive priming cues carried in both ads and program content (Bargh and Morsella 2008). Research by Harris et al. (2009) tested whether exposure to televised commercials leads to the consumption of products high in fat and sugar which has fueled obesity through automatic bingeing effects. As Harris et al. put it, "... these effects were not related to reported hunger or other conscious influences." (emphasis added by author).

In marketing, several studies established that consumers are influenced by marketing tactics (slogans, pricing, brand names) in subconscious ways (Wyer 2008; Laran 2010). Laran et al. (2011) found that brand names had positive priming effects while slogans seem to have negative priming effects.

Hypotheses

Based on the previous research in the priming field, the following hypotheses are proposed:

- H1: Respondents primed with the European culture will evaluate each of the five ethical scenarios as more unethical than respondents primed with the native Latin America stimuli.

The Experiment

Priming

Priming was achieved by showing the respondents a series of pictures and asked to identify where the pictures are from. One group was exposed to pictures from northern European countries while the second group was exposed to pictures depicting a native Latin American culture.

Scenarios

A plethora of research in business ethics utilizes the scenario/vignette approach. This approach presents the respondent with a short story describing an ethically questionable issue and then asks the respondent to evaluate this situation on an ethical scale. Representative studies utilizing this approach include: Schminke (1997), and Stevenson and Bodkin (1998), along with many others.

An array of business-related scenarios we considered and pretested. The five scenarios were chosen because of clarity and relevancy to the respondents.

Procedure

The data were gathered at a basic marketing class with mostly business students in the Dominican Republic. The respondents were shown a set of pictures either from several northern European countries or from several Latin American countries and asked to identify the country. Consequently, the respondents were asked to complete the five ethical scenarios presented.

In order to average out any “order effect” the order of presentation of the ten ethical scenarios was varied.

Pretesting Checks

The priming methodology was pretested using business students. Respondents reported no clear understanding, or prior knowledge, of the priming method whilst they exhibited a clear understanding of all five ethical scenarios, and the word task to be performed.

Sample

The convenience sample was gathered at a university in Santo Domingo, Dominican Republic. The percentage of males was 57.4 % and the age ranged from 18 to 81 with 54 % of the sample being between 18 and 22 years old.

Results

Priming Effect

To test for the hypothesis that priming had a significant effect on the respondents ethical perceptions, a series of T-test were performed with PRIMING as the independent variable and the ethical reactions as the dependent variable. The results are presented in Table 1.

As seen in Table 1, respondents primed with the northern European culture perceived four of the five scenarios as more unethical (lower negative score) than respondents primed with the Latin American culture. This result did not hold true for the Advertising scenario. So, hypothesis H1 is confirmed for four of the five ethical scenarios. A possible explanation for the nonsignificance of the Advertising scenario is that the majority of the respondents evaluated the situation in this scenario as ethical.

Table 1 T-test comparisons between the mean scores for the two primings

Scenario	MEANS		P-VALUE
	European	Latin American	
1. Bribe	-4.25	-2.55	0.00
2. Guarantee	-4.55	-3.24	0.00
3. Union	-4.20	-1.64	0.00
4. Hire	-3.51	-1.95	0.00
5. Advertising	1.16	0.74	0.12

Table 2 T-test comparisons between the mean scores for gender—European prime

Scenario	MEANS		P-VALUE
	Male	Female	
1. Bribe	-4.44	-4.12	0.17
2. Guarantee	-4.59	-4.52	0.68
3. Union	-4.13	-4.25	0.57
4. Hire	-3.32	-3.64	0.20
5. Advertising	1.70	0.81	0.04

Table 3 T-test comparisons between the mean scores for gender—Latin America prime

Scenario	MEANS		P-VALUE
	Male	Female	
1. Bribe	-2.85	-2.25	0.04
2. Guarantee	-2.88	-3.60	0.00
3. Union	-1.53	-1.75	0.42
4. Hire	-1.58	-2.31	0.01
5. Advertising	0.43	1.06	0.04

Demographic Influences

The effects of gender on priming are presented in Tables 2 and 3. Among the respondents primed by the European culture, only the Advertising scenario shows a significant difference, with the males perceiving it as more ethical.

Among the respondents primed by the Latin American culture, only the Union scenario did not show any significant difference. The other four scenarios show mixed results with the Bribe and the Advertising scenarios being perceived as more unethical by the males, while the Guarantee and Hire scenarios being perceived as more unethical by the females.

Overall, these findings do not present a clear relationship between gender and ethical evaluations.

A correlation analysis between the ethical evaluations and the age of the respondents did not show any consistent significant results also.

Conclusion

According to Bargh and Williams (2006), priming could lead to negative outcomes “without the person’s awareness and despite his or her good intentions.” The present study reinforces this concern that our ethical decision making is not guided solely by our moral fiber but is readily influenced by environmental cues such as the cultural environment we operate in.

The present study emphasizes the unconscious nature of business ethical decision making. Unethical behavior by business can lead to a loss of business, image deterioration, and ultimately decreased profitability. This research could make business people more aware of the cultural influences of their ethical behavior.

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Part IV

2nd Marketing Communication in SMEs

Organized by: Petra Koudelková

Charles University in Prague, Faculty of Social Science, Department of Marketing Communication and PR, Czech Republic

Description:

Strategy of marketing and marketing communication is not the privilege of big companies; on the contrary, it is also spread in small- and medium-sized enterprises (SMEs). SMEs are the engine of national economy and this is the reason why we need to focus on finding methods leading to their support. The goal of this workshop is to determine such kinds of marketing and marketing communication, which help SMEs to survive on market, hold market share, or get new customers.

Understanding Journalists on Twitter: The Czech Case

David Klimeš

Abstract This article aims to show that journalists in different countries have different approaches to the use of Twitter. After looking at American and German research, it is fair to say that journalists generally perceive their posts on Twitter in relation to their profession. They do not consider Twitter only to be the private sphere. It is therefore important to understand them not only in the public sphere as a whole, but in large companies as well as in small and medium-sized enterprises (SMEs) too. The article examines six of the most popular Czech journalists' Twitter accounts. The following content analysis supports the conclusions of surveys from elsewhere. The article seeks to demonstrate that Czech journalists perceive Twitter more as a medium to support private conversations with other users than as a medium to promote the content of his or her publisher.

Keywords Media · Twitter · Marketing

Introduction

The basic characteristic of Twitter, a microblogging network founded in 2006, is posts comprising between 140 and 160 characters, of which 20 characters are reserved for the user's name (Weller et al. 2014: x). Research about the service and its impact on society has already become an established field of academic research (for example, Van Dijck 2011; Parmelee and Bichard 2014; Gulyas 2013; Murthy 2013; Hermida 2013; Weller et al. 2014). In commercial, governmental, public, or nongovernmental organizations, understanding the social media is more and more essential to decision-making and communication planning. The development of communication on social media is important for small and medium-sized enterprises (SMEs) as well. Moreover, "small and medium-sized enterprises, especially

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in the Czech Republic, have big shortcomings in strategy making and planning” (Koudelková and Urban 2013). Richard Rogers has usefully divided the growth of Twitter and its position in society into several periods. From its inception in 2006 to November 2009, we can talk about the period of adaptation to users and the building of the basic features of the service. In 2009, the question in the status of the field has changed from “What are you doing?” to “What’s happening?” which demonstrates that the medium for the reporting of personal things has become more a medium with a wider scope (Weller et al. 2014: xvi). The growing importance of Twitter in societies can mainly be seen in various revolts around the world, where participants can communicate their messages by means of SMS to Twitter (Weller et al. 2014: xvii).

Twitter has not, however, been studied only in emergency situations.

We should understand it in the broadest sense of social media (Standage 2013) and the other new media of mass communication (Lister 2009). Theorizing accurately about the relationship between the 288 million Twitter users worldwide (Twitter 2015) and about the 200,000 users in the Czech Republic and the public sphere is not easy. Are published tweets private or public? Communications on Twitter have features of both. Jak-Hinrik Schmidt has therefore proposed specific communicative spaces, that he calls “private publics” (Weller et al. 2014: 4). The information in private publics are characterized by three elements: (1) being selected and displayed according to criteria of personal relevance; (2) being addressed to an audience which consists of network ties made explicit; and (3) being conducted mainly in a conversational mode (Weller et al. 2014: 4). All these characteristics are inconsistent with those associated with “traditional” mass media.

Twitter use has also been researched by Christoph Neuberger, Hanna Jo vom Hofe, and Christian Nuernbergk in German newsrooms (Weller et al. 2014: 345–57). Most journalists said that they had developed appropriate Twitter use by “learning by doing” and in informal conversations with colleagues (Weller et al. 2014: 354). The researchers defined five basic areas in which journalists can profitably use Twitter:

- (1) When journalists promote their own websites. Tweets refer to website content and provide links to them.
- (2) When journalists conduct real-time coverage from the scene of current news events. They provide live reports via Twitter, directly from where the events are taking place.
- (3) When journalist interact with members of the public on Twitter.
- (4) When journalists monitor audience reactions and follow-up communication to their reports.
- (5) Finally, when they investigate stories and conduct research using Twitter (Weller et al. 2014: 357).

In the private–public environment on Twitter journalists often express personal opinions more freely and deviate from the norm of objectivity (Murthy 2013: 54–55, Lasorsa et al. 2012: 19). Moreover, personality differences can affect journalists’ writing on Twitter. Journalists can usefully be classified as “skeptical shunners,” “pragmatic conformists,” and “enthusiastic activists” (Hedman, Djerf-Pierre 2013: 365). The regulatory bodies for the mass media, or the mass media themselves, are therefore trying to regulate journalists by providing written or unwritten rules for the use of social networks. The Agence France-Presse (AFP), for example, has sophisticated written rules on how to use social-networking sites (AFP 2013). By contrast, The New York Times relies partly on experienced colleagues to influence its younger journalists. A second approach used by that newspaper is explained in its leaked “Innovation Report”: “The Times made a smart decision when it decided not to establish rules for using social media, preferring instead to trust reporters and editors to exercise their judgment. We gave people the room to experiment and adapt to developing mediums. There are no rules, but no real guidance, either” (Mashable 2014).

Czech journalists’ behavior on Twitter (or generally on social networks), though not widely researched, has been considered by some scholars (for example, Peterová 2014). A distinctive feature of the behavior of Czech journalists on the Internet is attacking rival media by means of posts on social networks. Moreover, many journalists admit that personal attacks made on social networks have also been transferred into real relationships in the Czech media.

Research Methodology

The aim of research in this article is to show what most Czech journalists use Twitter for. The research was inspired by the categories of journalists’ activity on Twitter as described by the researchers Neuberger, vom Hofe, and Nuernbergk. Chosen method of research is quantitative content analysis. The period of the research was 1 month, because a pilot survey revealed that such a period is sufficient to show how users’ access to Twitter varies. The investigated period was from February 1, 2015 to February 28, 2015..

In a sample, I analyzed the content of Twitter users who met the following requirements:

1. They have more than 50,000 followers.
2. The regular creation of media content is their main job.

My aim was to limit the sample to popular accounts of Czech journalists. The researched accounts appeal to more than quarter of the users of Czech Twitter.

It also aimed to exclude from the list people who do journalism only as a secondary activity (for example, public figures who occasionally debate on radio or television).

After these limitations, it was possible to assemble a group of six Twitter accounts¹:

Jaromír Bosák, a sports commentator on Czech Television. <https://twitter.com/jaromirbosak>, with 93,800 followers. Introduction: ‘As Vančura wrote: Time gives dignity even to the monsters. It’s all about hope for my future tweeting. Tweets do not reflect the opinions of CT.’

Robert Záruba. Sports commentator on Czech Television.: <https://twitter.com/robertzaruba>. Followers: 90,800.

Miloš Čermák. Journalist, Editor-in-Chief of the website ihned.cz. Twitter account at <https://twitter.com/cermak>, with 75,700 followers.

Martin Veselovský. Moderator of the website [TV DVTV.cz](http://TV.DVTV.cz). Twitter account: <https://twitter.com/veselovskyma>, with 74,300 followers.

Jindřich Šídlo. Journalist, chief of domestic politics and opinion sections in *Hospodářské noviny*. Twitter account: <https://twitter.com/jindrichsidlo>, with 70,500 followers.

Erik Tabery. Journalist, Editor-in-Chief of the *Respekt* weekly. Twitter account: <https://twitter.com/etabery>, with 64,700 followers.

My research questions are based on the examples of Czech journalists’ behavior on the Internet we have just been looking at:

RQ1: Do Czech journalists use Twitter to promote their texts or their media texts primarily?

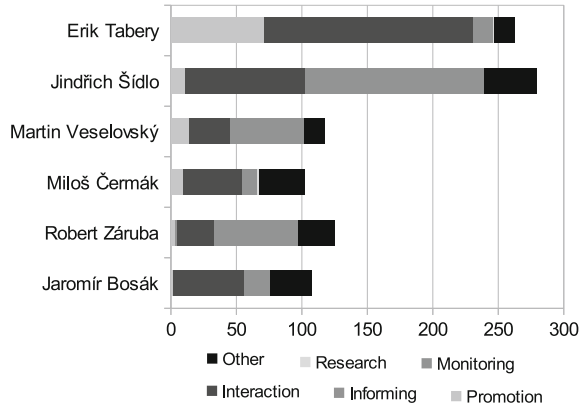
RQ2: Do Czech journalists react mainly to posts from other users or to their own on Twitter?

The research consists of the codebook, where I set categories based on the activities defined by Neuberger, vom Hofe, and Nuernbergk.

1. Posts to promote their own media with a link to the media or with clear identification of the media, or it is a retweet promoting the media by their own media staff.
2. Informing on newsworthy events from a real place and in real time.
3. Interaction with audiences on Twitter (a retweet, a reply to a communication begun by another person).
4. Monitoring reactions and the developing of communication (response to a communication begun by the journalist).
5. Using Twitter for researching and other work purposes.
6. Other.

¹Data from 21 March 2015.

Fig. 1 Posts of selected journalists on Twitter (N = 995)



Research Results

Different approaches to the Twitter are reflected in the coding of posts (Fig. 1).

RQ1: Do Czech journalists use Twitter to promote their texts or their media texts primarily?

The most popular Czech journalists on Twitter do not use the service primarily to promote their media. In all the accounts I investigated, audience interaction is the prevailing feature. Most journalists, especially Tabery, use Twitter as a promotional medium. In this category, I counted 71 posts—promotional articles by the author or his or her own media with a web link or a clear description of the medium, but I counted retweets by media staff were as well.

To promote his media, Tabery retweets posts about the Respekt weekly written by other users, but they are ranked in the category of interaction with audience members on Twitter to differentiate acts of media staff and conversations with a wider audience on Twitter.

None of the other journalists promote their medium so massively. Veselovský has fourteen promotional messages with links or a clear description of the medium. Šídlo has eleven posts,² Miloš Čermák has nine posts, Robert Záruba three, and Jaromir Bosak two posts.

It is reasonable to conclude that Czech journalists do not use Twitter primarily to promote their articles and their other media content.

RQ2: Do Czech journalists react mainly to posts from other users or to their own posts on Twitter?

Journalists use Twitter mainly to converse with their readers or audience. This may be in the form of retweet or reply to an initial communication from another person. The second possibility is monitoring reactions and the developing of communication begun by the journalist.

²Including links to Aktualne.cz, the sister website of Ilned.cz.

Bosák, Čermák, Šídlo, and Tabery mainly react to the activity of other Twitter users, Záruba and Veselovský develop communication begun by themselves.

In the category of reporting on newsworthy events from a real place in real time, we can count only two posts in our researched sample. One was written by the sports commentator Záruba from training sessions of the Czech national hockey team.

In the category using Twitter for researching and work purposes, we also count only two posts. One is by Tabery, written when he asked for a printed version of an American newspaper. The second one is by Čermák, who asks his audience to participate in a *Hospodářské noviny* survey.

In the sample, we see a larger proportion of the interacting category (with 410 posts) than of the monitoring category (with 304 posts). But, it is reasonable to conclude that both approaches are used when journalists want to get the attention of their private public.

Discussion

This exchange demonstrates that the behavior norms of Czech journalists on Twitter are still being developed. One source of new standards is the debate about editorial codes of conduct on social sites. After a few controversial cases, it is evident that it will be hard to find possible consensus. The second source of standards of conduct on Twitter is journalists' own behavior when using the service, together with voluntarily imposed limits on themselves and the cultivation of their rhetoric. For this article, I observed six popular accounts of journalists who have the potential to reach more than a quarter of all Czech Twitter users. After examining their posts in the course of 1 month, I have come to the following conclusions: selected journalists in the Czech Republic did not primarily perceive Twitter as a promotional tool for presenting their own media content or that of others. They focused more on conversation with other Twitter users. Twitter as a tool for live coverage of an event or as a search tool was almost completely omitted.

Journalists on Twitter tended to use it for personal, nonwork-related relationships, and conversations.

My research can only open the debate on standards observed by Czech journalists on Twitter. Based only on six accounts, the research does not offer a large enough sample to assess the behavior of the hundreds of other Czech journalists on Twitter. The relationships between journalists and their private publics needs to be the subject of further research, because without this information it is impossible to determine whether editorial codes of conduct are required for Czech journalists on social networks or not. The results should be important not only for media, but for communication departments in commercial, governmental, public, or nongovernmental organizations as well.

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The Relation of Knowledge Management and Marketing Communication of Small and Medium-Sized Producers in the Segment of Outdoor Clothing in the Czech Republic

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Abstract The article is involved in the relation between knowledge management and marketing communication of small and medium-sized producers of outdoor clothing in the Czech Republic. Correct management of knowledge is the key factor with regard to high concentration of the Czech outdoor producers. The objective is an optimal communication with customers within the framework of the use of outdoor brand. Small and medium-sized producers, within the competitive struggle, are forced to find savings and to transfer their manufacturing plants outside the territory of the Czech Republic. Awareness of these Czech outdoor brands is frequently rather poor in the Czech market. Consequently, the application of knowledge management, respectively change in style of management towards the complex use of knowledge can be strength for such producers. The article works with the outputs from own research in the field of knowledge management and area of marketing communication of outdoor clothing producers. The subject has focused on organized use of knowledge in marketing activities of producers, where the authors highlight key factors of knowledge management.

Keywords Knowledge · Knowledge management · Marketing communication · Outdoor clothing · SMEs

Introduction

Nowadays the customers are more demanding and thanks to the huge offer of products they have a big possibility of comparison. The offer comparison of individual producers comes after only when the customers learn about the product.

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This is realized by almost all the producers and sellers and that is why the customers are (marketing communication receivers) surfeited by marketing communication. The receiver is ‘bombed’ from all sides by advertisements, both the classic form and by contemporary marketing communication tools. For a successful addressing, the advertising producers try by an original and fresh way to ‘get out of the row’ and use the knowledge of aimed segment for its correct striking (or more precisely, that anyone could learn about the concrete marks and producers). At a high number of customers the demands are high and except the product quality itself they also want to hear, who, where, and from which material is the product made from.

Experimental

For information finding, a questionnaire survey took place. The aim of this survey was, beside other things, to find out which information the respondents perceive and are important for them at outdoor clothing shopping. The aim also was the finding out if the respondents are influenced by the knowledge of the country of the clothing origin. At the survey was also verified the reaction on the question of the mark remembering, which is recalled in the mind of a Czech respondent in the case of saying ‘outdoor clothing’.

The questionnaire took place by e-form. The questionnaire spreading was ensured by releasing on websites of some sellers, by a special outdoor portal and on Facebook profiles of participating outdoor equipment sellers. The questionnaire contained 20 questions, where some of them were dividend into subquestions. 335 respondents filled the questionnaire totally. After ensuring sample representativeness, 41 questionnaires were cancelled, which were filled by respondents under 20 and over 34 years. This range was set on the basis of secondary information. Utilizable questionnaire were from 294 respondents—136 women (46.3 %) and 158 men (53.7 %). The average age of respondents was 23, 2 years old and the median then 22 years.

For the questionnaire survey was set the hypothesis H1: The customers perceive the country origin as a quality supposition.

Hypothesis H1 Verification

Hypothesis H1 sounds: The customers perceive the country origin as a quality supposition.

Hypothesis H1 Was Confirmed Below

Has been conveyed a supposition, that the customers perceive the country origin of outdoor clothing as a quality guarantee. For the verification of this supposition, data from questionnaire were used, on its basis were gained information/counts about noticing the brand of used material by customers.

Regarding gained counts was possible to formulate the conveyed supposition so that, if there were no significant difference among the found counts, the customers do not perceive the country origin of outdoor clothing as a quality guarantee. On the contrary, if there were a significant difference among counts, the outdoor clothes shopping customers perceive the country origin as a quality guarantee. Whereas, at this part of research was emitted from the selected customer files, we performed the verification of the supposition by the help of statistic test. Regarding the fact that it was necessary to verify the significancy of differences among the found counts χ^2 test was used. Zero hypothesis said that there does not exist statistical significant difference (the customers do not notice the brand of used materials as a supposition of their quality). Against this hypothesis we pose an alternative hypothesis, which says, that the difference among counts is statistically significant (the customers notice the brand of used materials as a supposition of their quality). Information gained from the questionnaire inquiries and the theoretical counts (counts at which do not exist any significant differences among particular sorts), are visible in the following table (Table 1).

Consequently, the test criteria was counted 87, which was counted as a difference among the counts found on the basis of questionnaire inquiries and theoretical counts (the same counts for every type of shop). For the prestige level, 0.05 as a critical value was defined (fractile of Pearson dividing) 7,815. By the reason that the test criteria value is higher than the critical value, the zero hypothesis is rejected and the alternative hypothesis accepted, whereas you can mistake in 5 % of cases. **So it is confirmed**, that there exists statistically significant difference among the counts (i.e. the customers perceive the country origin as a quality guarantee).

From the large number of answers is apparent that in the most cases (174, i.e. 59.2 %) the respondents perceive the mark of used materials as a guarantee of their quality. It can be claimed, that the material knowledge is very important.

Table 1 Theoretical and gained counts for hypothesis H1 verification source: own processing from questionnaire inquiry

	Certainly yes	Rather yes	Rather not	Certainly not
Practical counts	39	135	83	37
Theoretical counts	73.5	73.5	73.5	73.5
Test criteria 87				
Critical value 7,815				
Prestige level 0.05				

The other part of the survey had to clear the question, if and how are the respondents influenced, from which part of their 'world' the outdoor clothing comes from. The producer countries of outdoor clothing which were chosen are the following: The Czech Republic, Scandinavian countries, Alpine countries, East Europe, Asia.

In the case, that the producer is from the Czech Republic, 217 respondents were influenced positively (73.8 %). 12 respondents perceive rather negatively, the producers from the Czech Republic (4.1 %). At Scandinavia, producers dominate the positive influence of respondents. 240 respondents (81.6 %) expressed the influence by a fact, that the producer is a Scandinavian origin. Only at 2 respondents (0.7 %) was shown the negative influence. The most expressive influence of respondents is really obvious in the case, when the producer is from an Alpine country. This positive influence marked 252 respondents (85.8 %). At Asian producers the positive influence was recorded at four respondents (1.4 %). The fact that the producer from Asia does not influence at all 103 respondents (35 %) and 185 respondents influences negatively (62.9 %).

The above-mentioned results obviously confirm also that the customers perceive the country of origin as a condition of quality. The most advantageous for the producer himself can be, if they are from an Alpine or Scandinavian country, this fact influences the customers positively.

At the survey and research of marketing, communication of some Czech outdoor clothing producers was found out that these producers in their communication show the statements, from which country they are, or, if they use Swiss or German technology/material, or that their products are tested by mountains or by a rough Scandinavian nature. They try to transmit this information to their customers, so the knowledge of producer, material origin locality and technology or only the places and the use of testing, know how to bring the customer to this product and its purchase.

Theory

Knowledge Management

The knowledge management could be described as a collective organization knowledge. It includes the knowledge, which is set in the company, also as the knowledge, which are selected and gained from an external source. Knowledge management is more than only information gathering and putting in computer databases or websites. The correct knowledge control ensures that the persons of all organization levels have the approach to the information, which they need to fulfil their tasks, and at the same time helps to fulfil the aims of all the organization (Shockley 2000).

Knowledge

Special literature features some possible author's sights for knowledge delimitation. Truneček (2003) defines the knowledge as a set of created experience, values, belief, related information, and expert sights providing the frame for evaluation and integrating the new experience and information appearing applied in the people's mind. According to Wiig (1993), the knowledge contains the truth and conviction, perspective and conception, judgement and expectations, methodology and known how. The knowledge is a set of aspects, experience and procedures which were considered right and true and which govern the thoughts, behaviour, and the communication among people (Wiig et al. 1997). Verhaegen (2005) adds that the knowledge supports informatively the decision authority and innovate the controllability of risk.

The knowledge is classified according to different criteria and by individual authors understood from some sights. It is about a complete definition, which is attractive to many scientists from different branches (Greiner et al. 2007).

Marketing Communication

Marketing communication is one of the parts of marketing mix (4P) and also of conception 4C, where the communication is instead of publicity (Kotler and Keller 2012). It is a part, which wholly focuses on communication, thanks to which the wide surrounding including the customers can get to know about the company, product, services, etc. According to Jakubíková (2008) the knowledge marketing is a component of business communication, which concentrates on sale stimulation and which must be in harmony with the business communication aims in interest of the unified image creation.

According to Bearden et al. (1995), the main aims of knowledge management is to inform, persuade and remind. The knowledge management's task is to ensure the communication of producer, seller or product provider with the customers and with the other key markets, to increase the product significancy, to help the customers to orient on the market and evaluate the total offer of the products (Vidová and Vida 2007; Bearden et al. 1995).

Results and Discussion

The results refer end to the fact, that the customers perceive the product knowledge as the details for their next decision. Every customer has a sort of knowledge about the product itself even before meeting the producer communication. This knowledge can be transferred from the surrounding (from friends, from different reviews,

previous experience, etc.). The previous experience can be big so that it exceeds any marketing knowledge of producers. It also happens that if the customer does not meet the marketing knowledge of producer, he does not know anything about the product. In the case that the producer uses the knowledge of what the customers want to hear, it helps to readjust the perception of separate factors of customer influence.

The influence size on the basis of used knowledge is depending on many factors, which are not always directly influenced by a producer. That is why it is necessary all the time to deepen the knowledge about the customers and to apply this knowledge into offer and marketing knowledge.

If the producer knows, that the knowledge of some facts is necessary for the customer it is needed to put it in the communication for the better customer influence.

Conclusions

The article has dealt with a relation of knowledge management and marketing communication of small-sized and medium producers of outdoor clothing in the Czech Republic. The article used outputs of own researches in the area of knowledge management and the area of marketing communication. It is necessary to get the transfer and receiving of knowledge communication of separate factors influence the perception and behaviour of customers. The article shows the right choice of communication mission built on the knowledge of perception of the final customer.

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Reverse Logistics in Marketing Campaigns

František Milichovský

Abstract Reverse logistics has become more important than ever before because of the requirement for nature protection from all over the world. Adequate activities of reverse logistics should be the basis for SMEs to be competitive and successful. The paper provides an overview of current trends of using reverse logistics activities in marketing communication especially in large enterprises and their influence for SMEs. Theoretical background from the area of reverse logistics supports this approach with data from primary research collected by the author. Adequate marketing campaigns could create acceptable background for effective marketing. The objective of this research is to verify intensity dependence of reverse logistics activities in connection with gender of the customer and identify possible trend of marketing campaigns. The research was aimed at random chosen group of young people in the Czech Republic. The result of the research can be used for the companies that operate in the Czech or Central European market.

Keywords Marketing communication • Reverse logistics • Pearson chi-square test

Introduction

At present, technology production (as part of supply chains) needs to get into new markets or catch business trend in current locations as response to several today's approaches, such globalization, using outsourcing instead of own sources or lean philosophy application (Cardoso et al. 2015). Many customers choose possible products according to additional services within purchased product. Unfortunately, customers usually do not look for addition services such packaging taking-back, recycling, or recharge products. Because of the market globalization, companies have to improve all processes, entering into production, as the way of creating

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competitiveness. Globalization process brings necessity of logistics activities, especially for old products and packaging material (Altuntas and Tuna 2013). According to Zich (2010), it is important to define which stakeholder group must be satisfied on the way to reach market success.

Theoretical Background

Logistics itself has become a process by which a product is distributed from producer to final customer. From point of view of used material, this process started within raw material. That could be called as typical logistics chain (or supply chain). Main problem in logistics chains is, what to do with waste in production process, used packaging of new products and old products (Govindan et al. 2015). According to Ferrer and Whybark (2000), there is a necessity to use garbage as the way of gaining material sources instead of their stocking or burning (impact on nature environment). Waste problems could be solved by reverse logistics (RL) which requires adequate skills, capabilities, market awareness, and staff with experiences (Giuntini and Gaudette 2003). Reverse logistics (RL) has become important part of marketing activities from logistic point of view. It is usually located in the end of whole marketing loop where after-sale phase is defined. RL itself is difficult to describe because of applying individual activities in all phases. RL is a process of moving products from place of typical usage for recapturing value or any other disposal (Genchev 2009; Daugherty et al. 2005).

It is difficult to define exact list of RL activities. Abdulah and Yaakub (2014) mention main groups of activities which are considered in RL. These groups are: (1) product returns, (2) disposition, (3) green manufacturing, (4) recycle, (5) refurbishing, (6) landfill, (7) salvage, (8) remanufacturing. Similar groups of RL activities are described by Nikolaidis (2013). However, he defines only seven groups in different way: (1) landfilling, (2) recycling, (3) cannibalization, (4) remanufacturing, (5) refurbishing, (6) repairing, (7) direct reuse or resale. Appropriate connection of logistics and marketing should be crucial for company.

Final consumers begin to look forward, the products with correct production such as bioproduction or green labeling (Tomek and Vávrová 2011). According to requirements of green supply-chain management, Hervani et al. (2005) define as the most significant RL activities (1) reuse, (2) remanufacturing, (3) recycling. Green corporate activities (e.g., production, marketing) are very important from the point of view of sustainability. Green marketing as part of RL is focused on bioproducts, low-operational costs, and products of biodegradable waste (Holanda and Francisco 2013).

Using information of technology development in marketing campaigns, sellers want to increase own income (especially for electronic products). These products have high influence of innovation cycle (Lebreton and Tuma 2006; Hsueh 2011). Customers still require new products to replace old ones, and they are more interesting in alternative of landfilling. Almost all products need more natural

resources and energy to make new ones. Electronic devices have become distinguished because of the low life cycle and non-friendly wastes (Gan et al. 2015).

RL itself has become part of sustainable industrial marketing because of the necessity of destroying of packaging and the rest of used materials. Main problem could be how these materials would be collected from the customers to applying RL activities. Therefore both economic and ecological aspects of possible processing are compared (El Korchi and Miller 2011; Lee and Lam 2012).

As way of building competitiveness, companies must focus on long-time period from marketing perspective. Complex manufacturing process need to be innovated in various ways—improving or changing technology of production, changing used material and others. They need to do production strategy in cooperation marketing strategy (O’Leary-Kelly and Flores 2002). Present trend for consumer products is in Eco-friendly categorization, which means that the products are dissoluble in nature by common ways. Perception of marketing campaigns includes many differences, especially from demographic point of view. The reason for this difference could come out mainly from demographic variables (Toppinen et al. 2013): (1) female consumers are more interested in both expressive and functional aspects than males; (2) people with higher income pay more attention to functionalities, ease of use, and quality; (3) people with higher education put less significance to symbolic aspects in purchasing. One of the most important perspectives is gender on which many campaigns focus on (Costa et al. 2001; Rahmani and Lavasani 2012; He and Wong 2011; Dolinská and Ambrozová 2015). All demographic factors impact corporate marketing activities, mainly in connection with launching new products, for which have become defined basic market segments with possible high income.

Methodology

The main objective of the paper is to identify which activities of reverse logistics are accepted by final customers in Czech market with connection to gender. Main hypothesis is that there is dependence in perception of reverse logistics activities in connection to gender. Gender differences are received as kind of social signals on base of comprehension of content. Effects of gender have been ignored. Nowadays, there are approaches to observe perception in social and mental fields to find out possible impacts on communication (Barkley and Gabriel 2007; Pavlova 2009).

The first part of the paper presents main secondary information, which was processed by many scientific articles and literature. The main part of the paper introduces research data that was obtained from the primary research focused on perception of RL activities of Czech customers. The data were processed using the statistical program IBM SPSS Statistics 22, which subsequently analyzed the dependency between the two nominal variables by of contingency tables and Pearson’s chi-squared test. The sample population was created by 183 respondents that were chosen from university students of Brno University of Technology. Basic

population was designed by the students who attended various logistic courses, provided by author in spring 2015. Total amount of basic population was 273 students.

Results

Results of the questionnaire survey used basic types of descriptive statistics on the selected data set. Descriptive statistics of reverse logistics activities (Table 1) show that customers use product until its “dead”. On the other hand, they do not use collecting yard. Individual respondent had possibility to answer on question “What do you do with product after its life cycle” by following choices: definitely no, rather yes, definitely yes.

In that fields there is possible to predict the high effective impact on customers’ perception (according mean—best value should be 3.00). Due the aim of the paper, an analysis of dependency of variables was carried out only between gender and chosen reverse logistics’ activity. The results of the dependency test are provided in Table 2 which examines the dependency between gender and impact of marketing campaigns. The results of the dependency examination in individual variable categories are depicted in the following results of Pearson’s chi-square test.

Descriptive statistics in Table 1 show that there are two variables of RL which could be put under next examination. The reason for this is due Variance coefficient, which must be under 0.4. For both variables and in order to establish the dependency test, statistical testing using chi-square test was used. From analyses of Pearson chi-square tests of dependence between gender and chosen activities of RL was evaluated only one—recycling.

The value 0.050 of Pearson chi-square test is smaller than 0.05, which represents 5 % error of bad decisions (95 % confidence level). Therefore, it could be assumed that there is dependence between individual variables, i.e., recycling activities

Table 1 Basic descriptive statistics of RL activities application

	Mean	Median	Variance	Std. dev.	Variance coefficient
Perception of reverse activities	2.46	2	2.173	1.474	0.5992
Recycling	2.15	2	0.659	0.812	0.3777
Return to seller	0.63	0	0.567	0.753	1.1952
Collecting yard	1.88	2	0.689	0.830	0.4415
Return to seller with new purchase	0.71	1	0.668	0.818	1.1521
Municipal waste	1.49	2	0.896	0.947	0.6356
Using for whole “product life”	2.24	2	0.579	0.761	0.3397

Table 2 Pearson's test of the relationships

		Value	Asymp. Sig. (2-sided)
Gender and recycling	Pearson chi-square	7.759	0.050
	Contingency coefficient	0.202	–
Gender and using for whole "product life"	Pearson chi-square	4.263	0.234
	Contingency coefficient	0.152	–

depended on the gender of customers. From point of view of the second variable, there is value of Pearson chi-square test at 0.202 which means that this combination is totally independent (Table 2).

Maintaining the % reliability of the test, the established value was compared with 0.05 which represents a 5 % reliability level. The established values are for the variable recycling $\alpha = 0.050$ and for the variable using for whole product life cycle $\alpha = 0.202$. At first case, value is less than 0.05, which brings the conclusion that an alternative hypothesis applies—there are dependency between recycling and gender. For second case, there was no observed dependence between gender and using for whole product life cycle.

Discussion

Gained results give up that there is relationship between recycling and gender. Value of Pearson's chi-square test is 0.05 which confirm limit of 5 % error. The second pair was not verified, because the Pearson's chi-square value is 0.202. Subsequently, the degree of such dependency was examined.

The intensity of dependency ranges between $<0; 1>$. That means that the higher the absolute value, the greater the intensity of dependency. For dependence of recycling and gender, the value is 0.202 which means that the intensity inclines to be quite low. Contingency coefficient of pair recycling and gender is 0.202 which means rather low value. Another objective was to find which RL activity has become the most important for customer during decision-making purchase process. Individual respondents could answer the question in 1–10 scale. According to received results there was found, that 87 % of respondents look forward repairing purchased products. The second service is return/change product at selling place (Table 3).

Table 3 Descriptive statistics of RL activities

	Mean	Std. deviation	Variance
Return/change	7.86	2.128	4.528
Old product return	4.03	2.346	5.502
Reverse packaging taking	3.19	2.124	4.510
Products repair	8.70	1.638	2.682

Conclusions

Marketing communication is one of the key fields which company must realize. Main objective of each corporate communication is to move all customers into two highest customer's levels (partner, advocate) because of their creation of the biggest added value. Marketing communication campaigns need to focus on customers' feelings to influence their purchase decisions. There is growing trend of customers, who are interested in possible reusing of products or material. Another reason for this trend could be increasing amount of garbage, produced by households worldwide, which leads to higher significance of RL activities that companies must offer (Ferrer and Whybark 2000). The main aim of this article is to identify which RL activity is connected with marketing campaigns that could impact customer's decision-making process. Mentioned influence was connected with the data, obtained from primary research. According the results of Pearson's chi-square test, there is a conclusion that shows dependence between gender and recycling (value 0.050). Intensity of this dependence is 0.202 which mean that the intensity inclines to be medium rather low. Consumers' perception of realized marketing campaigns should be impacted by gender, possible location, or individual habits.

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Part V

2nd Marketing in Entrepreneurship

Organized by: Teresa Tiago
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Description:

The aim and scope of this session is to discuss recent theoretical developments in this field and seek a consensus definition of the entrepreneurial marketing phenomenon. We have to consider that more theoretical frameworks and empirical studies are needed to increase our understanding of entrepreneurial marketing activities and to provide robust evidence of new ventures creation and the role of marketing in these developments.

Competitive Strategies and Managers' Perceptions in Greek Food Manufacturing Firms

Ourania Notta and Aspasia Vlachvei

Abstract The objective of this study is to investigate the perceptions of Greek managers towards competitive advantages in case of Greek food manufacturing industry. According Porter: “there are many sources of competitive advantage: making the highest-quality product, providing superior customer service, achieving lower costs than rivals, having a more convenient geographic location, designing a product that performs better than competing brands, making a more reliable and longer-lasting product, and providing buyers more value for the money. To succeed in building a competitive advantage, a firm must try to provide what buyers will perceive as “superior value”—either a good product at a low price or a “better” product that is worth paying more for”. In order to achieve the above research aims, we administered a survey to 161 Greek managers of Greek food manufacturing firms, during the period January–September 2014. According to our results making the highest-quality product, designing new products and creating unique value for customers, having a more convenient geographic location and having advantage of production specialization are the main sources of Greek food and beverage firms’ competitive advantage. Implications for research and practice are discussed.

Keywords Competitive advantage · Greek food firms · Business strategies

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Introduction

Competitive strategy consists of all the moves a firm has taken and the long-term action plan that is devised to try to knock the socks off rival companies and gain competitive advantage. Porter (1980) defines competitive strategy consists of all the moves and approaches a firm has taken and is taking to attract buyers, withstand competitive pressures, and improve its market position. Thompson and Strickland (1989) defines competition as the act of striving against another force for the purpose of achieving dominance or attaining a reward or goal. Competitive advantage can be defined as the significant advantage that an organization has over its competitors, which allow the organization to add more value than competitors in the same market (Thompson and Strickland 1989). In other words, a competitive strategy enables a company to build a competitive advantage, which is the essence of competition and the main determinant of performance, in that it helps a company to strengthen its position in the operating environment. Porter (1980) proposes that firms can resort to cost leadership, differentiation, or focus strategies to gain competitive advantage. Porter's framework is still extensively used in academic research and especially in strategic management literature (e.g., Parnell 2011; Ramakrishnan 2010; Slater et al. 2010) and according to the practical experiences of the authors and several empirical studies, is well known by many executives (Dess and Davis 1984; Jennings and Lumpkin 1992; Kotha and Vadlamani 1995; Pertusa-Ortega et al. 2007; Robinson and Pearce 1988). Porter's concept of generic competitive strategies (Porter 1980/2004) probably represents the most influential taxonomy used to analyse firms' strategic behaviour. The two essential strategies in Michael E. Porter's concept of generic competitive strategies are overall, i.e., industry-wide, cost leadership and overall differentiation strategy.

Cost leadership strategies are based on low cost which enables a firm to charge lower prices than those of competitors (Ogutu and Nyatichi 2012). Of course, the product quality must be comparable if not better than that of competitors. Otherwise, the strategy will be short lived in its effectiveness. A firm intent on being a low cost producer has to scrutinize each cost creating activity and identify what drives the cost of the activity. Companies can achieve dramatic cost advantages from restructuring the cost-chain and eliminating unnecessary cost-producing activities. The secret for achieving an industry-wide lowest cost level is to capture a high market share and thus produce large quantities and spreading fixed costs among a large number of products.

The alternative to cost leadership strategy is the differentiation strategy (Porter 1980). A firm that pursues a differentiation strategy seeks to create a perception in the minds of customers that their products or services possess superior characteristics that are unique from those of its competitors in terms of image and reputation, reliability, design features and quality (Dean and Evans 1994; Sashi and Stern 1995). Achieving uniqueness in these ways will cost a firm more, and hence price will be higher than that of competitors. If the product is really perceived as unique

or special, the high price will not deter customers, but will even enhance the perception of the product as being special. Pursuit of a differentiation strategy helps the firm to avoid high price competition because it creates brand and customer loyalty (Porter 1980). Differentiation strategies include high product quality (quality leadership), high innovation intensity (technology leadership), low time-to-market (time leadership) or a special image (image leadership). Differentiation strategy, in contrast to cost leadership, is thus not a homogeneous strategy but a bundle of different strategy types (Peters and Zelewski 2013).

The third strategy in Porter's concept of competitive strategies is focus (Porter 1980/2004) or niche strategy (Shrivastava 1995). This is concerned with the target market a firm pursues. A company may focus on a geographic market, a custom group or a product group in order to better serve this niche market. Porter (1985) further argues that firms combine focus strategy with either cost leadership or differentiation strategy to gain competitive advantage.

The purpose of this article focuses to investigate the perceptions of Greek managers towards competitive advantages in the case of Greek food manufacturing industry.

Empirical Research

Industry of Focus

We chose Greek food and beverage industry in order to carry out our investigation on the perceptions of Greek managers towards competitive advantages because the sector is a competitive and outgoing industry and is consistently one of the major parts of the secondary sector of Greek economy and one of the main motors of Greek manufacturing. The sector has trade activity not only in Greece but also in Balkan and throughout Europe, and its margins growth are even larger and can play an important role in stimulating development of the Greek economy in this difficult period spent. The sector is the first among the other branches of manufacturing production in value terms (20.4 %) and gross value added (19.7 %) and second largest in terms of turnover (20.2 %, with the first carbon and refined with 22 %, IOBE 2014). The food and beverage industry employs 27.8 % (2011) of the total employees in secondary sector. Table 1 presents the number of firms for the twelve different industries that have been chosen.

Methodology

The empirical part of this study is based on a survey research that provides knowledge about the perceptions of managers towards competitive advantages in

Table 1 Number of firms for each industry

Industry	Number of firms	Sample %	Industry	Number of firms	Sample %
Dairy products	26	16	Other food products	28	17
Processing of fruit and vegetables	21	13	Brewery and alcoholic industry	12	6
Meat and sausages	20	12	Wines	19	12
Bread, pies and cakes	10	6	Water and soft drinks	7	4
Oil and fats	9	6	Grain mill products	4	3
Biscuits and chocolates	5	3	Fish and fish products	3	2

the case of Greek food manufacturing industry. The methodological tool chosen for this investigation is a structured questionnaire and the survey conducted in January–September 2014. A total number of 3540 food manufacturing firms were identified from Hellastat database (Hellastat 2014). A systematic random sample of 1018 firms was drawn. The pre-tested survey questionnaire with an introductory cover letter was mailed to the respondents, to inform them about the importance of their contribution, and they were assured of confidentiality of the results. Face-to face semi-structured interviews were conducted with managers of 161 established Greek firms involved in food industry, at their place of business, yielding a satisfactory effective response rate of 16.0 % (161/1018) (Notta and Vlachvei 2015). Companies ranged from small businesses to large global players. The majority had less than 10 employees (39 %), followed by companies with 11–50 employees (35 %) and those with over 50 employees (26 %).

The questionnaire consisted of two parts. The first part of the questionnaire included questions to collect descriptive data relating to the companies and demographic data related to the managers (age, sex, tenure of respondent in firm, etc.). The second part of the questionnaire comprised of Likert-scale questions about quality, value for customers, innovation, production cost, product specialization product and geographical location—and managers were asked to what extent and in which direction they believe that their company has implemented these strategies. Data collected was analyzed using descriptive statistics such as frequencies, percentages and mean scores. Percentages were used to determine popularity in terms of strategies used by food and beverage firms and mean scores were used in analyzing the extent to which a competitive strategy was adopted. The SPSS tool of analysis was used.

Findings

According to the descriptive data relating to the companies 31 % of the companies are operated between 11 and 20 years, 18 % are young firms (are operated less than 10 years) and only 23 % are operated more than 40 years. According to the managers' demographics, 73 % were male and only 27 % were female and 34 % are within the age group of 45–55 years. The majority are CEO and managers of the firm. To verify the appropriateness of the key informants, responders asked about their tenure and expertise (Kumar et al. 1993). Overall, 79 % of the participants in the final dataset had been with their current firm for six years or longer.

Table 2 shows the descriptive statistics (mean score and standard deviation) for perceptions of managers towards competitive advantages in the case of Greek food and beverage manufacturing industry. From the table, it is evident that differentiation strategies are the most popular and are greatly used by Greek food firms in Greece to remain competitive. The greatly used advantages are differentiation leadership involving achieving “high quality products” (mean of 4.48) and creating “unique value for customers” (4.26). The next greatly used strategies were those of focus differentiation advantage involving “specialization of production” (3.94) and “innovation” (3.64). Cost leadership was not as greatly used as differentiation advantage perhaps due to the deep recession for sixth consecutive year that the Greek economy remains. According to the results of Lemonakis et al. (2013), the

Table 2 Descriptive statistics

	Scale range	Mean score	Std dev.
Differentiation leadership advantage			
Do you believe that your company's products are characterized as “high quality products”?	1–5	4.48	0.69
Do you believe that your company's products “create unique value for customers”?	1–5	4.26	0.74
Focus differentiation advantage			
Do you believe that your company's products (in comparison with the products of other Greek companies) are more innovative or utilize higher technology?	1–5	3.64	0.94
Do you believe that your business (in comparison to other Greek firms) has advantage production specialization?	1–5	3.94	0.86
Cost leadership advantage			
Do you believe that your business (in comparison to other Greek firms) has advantage of lower production costs?	1–5	3.12	1.12
Other potential incumbent advantages			
Do you believe that your business has geographical location advantage?	1–5	3.45	1.03
Do you believe that your business is “tied” to the place that is located?	1–5	4.12	0.95

majority of Greek exporting firms were widely influenced by the economic crisis and the lack of sufficient liquidity and financing. These are factors that make cost leadership not a viable competitive advantage for Greek food manufacturing firms. Finally, although only the half of the managers (52 %) believe that their business has geographical location advantage, the majority of them (with mean score 4.12) declares that their business is “tied” to the place that is located in terms of raw materials, labour force, the origin of the owners and the networking with local businesses.

Conclusions

The present study aims to provide an insight to Porter’s concept of generic competitive strategies. Focusing on the Greek food and beverage sector, the study investigated managers’ perceptions towards competitive strategies. More specifically, the investigation focuses on differentiation leadership advantage, focus differentiation advantage, cost leadership advantage and other potential incumbent advantages. The results of the statistical analysis showed that differentiation strategies are the most popular and are greatly used by Greek food firms in Greece to remain competitive. The current study did not examine the possible correlation between the demographical characteristics of managers as age, education level, etc., and their perceptions towards the chosen competitive strategies. Also, the current study did not investigate how competitive strategies impact on the performance. A study in these respects would be quite useful.

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The Perception of Warning Signs at Different Cultures

Yener Giriskan, E. Eser Telci, Esra Arikan and Efstathios Kefallonitis

Abstract An identical warning sign may lead to different effects on the individuals from different cultures. This study aims to reveal the differences between the effects of warning signs on the cigarette packages on UK and Turkish consumers. If the warning signs can be optimized in accordance with the perceptions of different consumers in different cultures, they may become more influential and more discouraging. In order to understand the participants' perceptions, not only their replies on the surveys but also their reaction time to each variable were analyzed.

Keywords Culture · Advertising · Decision-making · Decision science · Experimental design

Introduction

Each year many people die as a result of tobacco-related diseases which shows that tobacco is one of the leading causes of preventable deaths. In order to prevent such global deaths, many countries have taken precautions such as increasing the taxes of tobacco products or laying down legislations regarding the packages and labels of these products. However, although many smokers are aware of the dangers that smoking and tobacco products cause, they still tend to underestimate the potential

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risks associated with smoking and they continue to claim that they can quit smoking whenever they want, since it is not an addiction but only a bad habit (Romer et al. 2001). In order to draw attention to the real risks of tobacco consumption and create awareness on the related health issues, health warnings placed on the cigarette packages are widely used in many countries.

Formerly, these warnings consisted of only texts but nowadays there is a tendency to combine texts with graphics to draw smokers' attention and elicit negative feelings and thoughts towards smoking. In addition, in order to address the harmful effects of smoking on nonsmokers and enhance the impact of those warnings, some countries use self- and other-oriented messages rather than only self-oriented messages (Miller et al. 2006). This study examines how the warnings on cigarette packages affect the responses against smoking. An experimental design is used to compare the reactions of smokers exposed to a health warning that is manipulated on two main dimensions: (1) text-only versus text and picture (2) self-oriented versus self- and others-oriented. The responses of the participants to these warnings and whether these warning signs have an influence on the participants' smoking behavior are measured implicitly via reaction time.

Effects of Graphic and Text-Only Warnings

As suggested by Hogben (1949), image-based messages are a stronger means of communication compared to all forms of text-based communication. Images not only lead to increased attention but also elicit greater cognitive processing (Veer and Rank 2012). A review of the related literature on cigarette packages shows that graphic warnings are more effective than text-only warnings in attracting attention and promoting health knowledge (Hammond 2011). When the negative outcomes of smoking are shown graphically, these graphics may act as a motivation to stop smoking. Kees et al. (2010) assert that graphic warnings tend to decrease consumers' perception of package attractiveness and increase the negative perceptions towards smoking.

However, in their research that they make a systematic literature review on the effects of such graphic warnings on smoking behavior, Monarrez-Espino et al. (2014), reveal that there is not a consensus in literature about the outcomes of usage of these signs on cigarette packages. Beside many studies revealing supportive evidence for the positive effects of these graphic warnings, there is another group of studies providing contrary evidence on the negative effects of these graphic warnings. Since graphic warnings are more fear-evoking compared to text-only warnings, smokers tend to develop defensive mechanism to protect themselves (Erceg-Hurn and Steed 2011). The cognitive dissonance and terror management theories may be illustrative in explaining such defensive mechanisms. The theory of cognitive dissonance (Festinger 1957) argues that when a person experiences a misfit between action and cognition, this person experiences cognitive dissonance and takes further actions to reduce this unpleasant arousal. In the case of graphic

health warnings, smokers who are threatened by fear-evoking graphic warnings experience such an unpleasant arousal and try to reduce this arousal by trying to belittle these messages, avoiding the graphics by covering them or emphasize other cognitions that support their behavior such as the relaxing effect of smoking (Glock and Kneer 2009). Similarly, the terror management theory posits that people develop various mechanisms to protect themselves from the anxiety associated with mortality. Since most of fear-evoking graphic warnings make mortality more salient, smokers tend to develop defensive mechanisms by reporting more positive attitudes towards smoking (Hansen et al. 2010).

Effects of Self-Oriented and Others-Oriented Warnings from a Cultural Perspective

Another stream of research investigates the effectiveness of self versus self- and others-oriented messages on smokers. Self-oriented warnings portray the hazardous consequences of smoking only to the smokers whereas others-oriented warnings emphasize the dangers for the others. The findings regarding the effects of these warnings are mixed. While some researchers (Pechmann et al. 2003) argue that others directed warnings are more effective, others (King and Reid 1989) argue that self-oriented warnings are equally persuasive. These mixed findings can be explained based on the national cultural context.

According to Hofstede (2001), national cultures can be studied based on individualism versus collectivism. In individualist cultures, the ties between people are loose and everyone is responsible of her/himself and her/his immediate family whereas in collectivist cultures, people share a sense of belonging and emotional dependence on strong, cohesive in-groups within a society. Prior research shows that individualism versus collectivism dimension has a significant impact on cross-national variance in consumer behavior, thus understanding responses to antismoking warnings should also be studied from a cultural perspective (Hassan and Shiu 2015).

Even if the responses to antismoking messages are not extensively studied based on national culture dimensions, there exists some supportive research that addresses the general relationship between individualism/collectivism and advertising effectiveness. For example, Han and Shavitt (1994) observe that advertisements stressing individualistic benefits are more effective in individualist cultures whereas advertisements focusing on collectivist benefits are more effective in collectivist cultures. Miller et al. (2006) also show that advertisements emphasizing the hazardous consequences of smoking to the smoker work better in individualist cultures whereas advertisements emphasizing such consequences to people other than the smoker are more effective in collectivist cultures. However, there also exist some contradictory findings. For example, Aaker and Williams (1998) state that because of their relative novelty, altruistic emotions are more persuasive than ego-centered emotions in individualist cultures, while the opposite is true for the collectivist cultures.

Data Collection and Analyses

The data has been collected from United Kingdom (UK) and Turkey; which are countries with different characteristics with respect to the Hofstede's cultural dimensions. UK is a highly individualistic country whereas Turkey is a highly collectivist country. The participants are selected among young people who are in their first three years of legal age period of legal allowance of cigarette purchasing in the given countries. 238 participants from Turkey and 249 participants from UK were effectively reached and included in the survey.

As shown in Fig. 1, four alternative signs are used in data collection. Two selected signs included only texts whereas the other two signs did include both texts and graphics. Another manipulation was on the dimension of self and self- and others orientation of these signs as two included a message that contained only self orientation whereas two others carried both self- and others orientation. Each respondent was given one data collection instrument at each time; which includes only one version of the four alternative signs shown below. After showing the stimuli, participants were asked seven questions regarding the encouragement effect of these signs on quitting smoking their trustworthiness, arousal of anxiety, perception of the damages on smokers' health, and harm on other people, addictiveness, feeling of guilt.

While the respondents were required to answer the questions, their reaction times was also recorded. Responding to a question in a longer time period, was accepted to sign allow certainty of the respondent regarding his/her answer whereas quick responses represent high certainty. Initially, the results collected from the total sample (UK and Turkey) were analyzed to see how quickly the respondents responded to text-based versus picture-based signs. As shown in Table 1, the response time for the picture-based signs is significantly longer than the text-based ones. These findings may be said to point out that concerning the responses of all participants from UK and Turkey, the pictures are more effective than the texts.



Fig. 1 Four different signs that were used in the experiment

Table 1 Mean differences for text- and picture-based signs

	Mean	t-value	Sig.
Text	5.38	-2.181	0.03
Picture	5.54		

Table 2 UK and Turkey mean differences for self- and others-oriented signs

	Mean	t-value	Sig.
Self-oriented	–	5.61	0
UK	5.08	–	–
Turkey	5.57	–	–
Self- and others-oriented	–	-0.13	0.89
UK	5.59	–	–
Turkey	5.58	–	–

Subsequently, differences between United Kingdom respondents representing the individualistic culture and Turkish respondents representing the collectivist culture were tested in terms of their response time to the self-oriented and others-oriented signs. Results shown in Table 2 prove that individuals’ reaction time to the self-oriented signs were significantly different in two cultures while there is no meaningful difference for the self- and others-oriented signs. As may be seen on Table 2, the Turkish participants representing the collectivist culture responded significantly in more certainty to the self-oriented signs.

Discussion and Conclusion

Culture obviously has significant effects on how individuals perceive the signs on the cigarette packages. However, it is still critical to measure the most influential types of signs that will make the smokers think twice regarding their smoking habit and will discourage people that do not smoke already. This study, based on Turkish and English respondents’ verbal claims and reaction times to different stimuli, reveals that advertising messages in visual forms are stronger in terms of influencing people against smoking. On the other hand, interestingly, for the respondents from Turkey—a collectivist culture—the self-oriented signs are more effective to give the message against smoking compared to respondents from UK—an individualistic culture. Regardless of the culture, the biological reactions to the warning signs are similar. In order to increase the effects of the warning signs on the cigarette packages, the location of these signs on the packages should be decided attentively (Giriskan and Bulut 2014). It is possible to increase the influence of these signs by optimizing the placement of the warnings.

One of the limitations of the study is that the picture that was chosen to represent self- and others-orientation consisted of a blond mom and her baby. It may have negatively affect the Turkish respondents’ reaction time since these figures may not

be regarded as native Turkish. If people cannot internalize the stimuli, it may be harder for them to perceive the message transferred through the usage of this stimulus. In addition, it is critical to increase the sample size in the future research to analyze the data for each gender since men and women may have different reactions to each stimulus especially if there is a visual sign of a baby and his mom on the cigarette package.

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Humour—The Strongest Emotional Appeal in Advertising

Pavel Horňák

Abstract Humour, along with erotic, sex and fear belongs to the strongest emotional appeals in advertising. Inconsistency—departure from the standard, moments of surprise, in connection with kindness (perhaps even the satirical form), with intellectual humour, but in the first place in the connection with necessary creativity and originality, I consider to be the fundamental characteristics of humour. It is necessary to use humour in advertising in the context with objective and focus group of advertising.

Keywords Advertising · Emotional appeal · Humour · Erotic · Fear

Introduction

Humour belongs to the strongest but also to the most popular emotional appeals in advertising. Our sketch hints that except for humour there are also other constants that can be used in various combinations when creating effective promoting tool. First, they are popular actors in advertisements, effective forms of adaptation, but also the strongest emotional appeals, that are not only humour, but also love, erotic, sex and fear. The efficiency of our communicative influence will be decided not only by their mutual combination but also appropriately chosen subject, target and target group of the campaign. However, the creativity and originality of the authors are still most important. And it is exactly the humour that, with connection to the mentioned appeals, is instantly related to creativity and originality. The purpose of the study is the characteristics of the humour phenomenon, its types and subsequently the possibility to use them in advertising. On the bases of professional literature and also by studying resources and by research probe, we try to verify given hypothesis. The secondary goal (only in chronological meaning of the word)

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is to contribute by the final synthesis to the more efficient usage of humour in our advertising practice.

The research probe verifies the efficiency of basic emotional appeals more complex, but part of the questions was deliberately focused on the position of humour in advertising. As a sample, more than two hundred Slovak and Czech students of marketing communication were addressed. The basic hypothesis is the assumption that humour is the most efficient and also the most popular emotional argument in advertising.

Basic Characteristics of Humour and Its Constant

Encyclopaedia Britannica states that humour is: “inner ability of human to kindly reflect on the contradictions of life and to express this reflecting by the means of speaking, writing or other form of art.” (britannica [online]).

Already in my first monolingual dictionary of advertising twenty years ago, I have characterised humour as ability to arouse laughter, cheerfulness (Horňák 1997). But now we are getting to the types, or more precisely genres able to arouse laughter. Pranks, anecdotes or jokes which are often in practice mingled (and are also often used as synonyms) are very old and time-proven forms of evoking good mood, cheerfulness, laughter But if we understand anecdote as a short story with funny point, a prank is more like a funny statement which is called also a joke. However, as a joke we should understand also wittiness, ability of apt sense whose goal should not be only to make somebody laugh but also engage interest, catch attention or solve situation by a mind operation.

There are forms of humour that arouse mockery or ridicule (light mockery—irony, sharp mockery—satire or reckless mockery—sarcasm). This dimension of humour has been proven already by Platon, who states that laughter comes from watching the misfortune of others. In humour, we can find mingled goodwill arousing laughter with mockery which is the opposite of goodwill. And here another dimension of humour shows—contradictoriness. It is evident that its bases are goodwill and contradictoriness.

Contradictoriness can be interpreted with the help of the most competent authors and their characteristics of humour. Humour is—reflecting the ending and endless (Jean Paul)—confrontation of real and unreal (Karel Polacek). The expert on advertising—Gerard J Tellis characterises contradictoriness as a nonproblematic oppositeness (Tellis 2000). The ending and the infinity are the expression of oppositeness, as well as the reality and unreality, but why Tellis mentions the contradictoriness is nonproblematic, it is worth the thought... The evident conflict, in this case determined as misunderstanding, we can feel also it Jan Werichs’ writings. “Humour lives from the misunderstandings because it helps to understand it and bear it. Humour helps us not to go crazy from it.” (Horňák 2014).

The oppositeness is to some extent a synonym for contradictoriness and in a way it is also connected with surprise. Because it is particularly surprise that is the attribute of something new, original and creative. And this is valid not only with humour or advertising.

We understand the basic characteristics and constants of humour mostly as: the usage of opposites, contradiction—deviation from the rule, surprise in connection with goodwill (or more precisely form of mockery) connected to a mind joke, but most often in connection with inevitable creativity and originality.

Forms of Humour

On the bases of mentioned characteristics, we can also try to divide the types of humour (it is often division identical for jokes, or more precisely anecdotes): according to the way of presenting: drawn, written, verbal; according to character: humour warm-hearted, sentimental, mocking (irony, satire, sarcasm, parody, black humour); according to object: erotic, sexual humour, political satire; according to the field: (this is specific type according to object)—sport humour, childish humour, about animals, policemen, blondes, member of some nations or nationalities, for instance British humour, Jewish, Czech, and so on; according to the mind level, or more precisely its intellectual quality—intelligent and primitive. We consider it the most important attribute from all the division. It is an expression of creativity and originality level of their creators, and the result is the mind joke.

Several of the above-mentioned divisions can complete, or more precisely overlap each other—for example, black humour about Scotch people can be drawn. But intelligent mind joke should be present in any kind or form of humour. The joke has reasonable dimension of artefact as a product of a keen sense and emphasises the thought and ingenuity presenting itself in particular form or genre.

Humour in Advertising

Humour in advertising causes pleasant feelings, good mood but also connects recipients. Tellis claims that humour loosens the audience, keeps the attention, reduces potential aversion to the main message, creates useful intellectual riddle and prefers mainly intelligent humour. However, he warns us about situations, when humour could be harmful (for example, sad atmosphere) (Tellis 2000).

Vysekalova states that attention to advertisements can be best drawn to by humour, it can support the brand name and increase interest, keep advertisements in minds of people, support the bridge from one brand to another (Vysekaloová and Komárková 2002). However, it does not support the process of persuading, it can harm the brand in general and it is inappropriate in combination with sensitive goods or services. Humour has its positive role also when creating positive attitude

towards advertisements, which is especially important these days. A joke with originality and inventiveness is welcome in advertisements by a significant part of the public, according to the research. However, humour does not have to be fully understandable for the target public (Vysekalová and Komárková 2002). It remains to add—understandability and does not have to mean primitive...

Pelsmacker has even more particular attitude to the usage of humour in advertising. He shows that in the scheme, which expresses the multidimensional aspect of using the humour in advertising. Humour (and its particular type) is, in his opinion, appropriate mostly if it is connected to the products and it is not general. If there is also particular relationship between a product and humour, if it is known, well-established product, not a novelty on the market—here it can more likely be harmful. It is necessary to understand the history of brand development and the acceptance among recipients. Here, we should also add the context with character of previous well-known campaigns of particular company, or more precisely brand. Humour is divided into cognitive, sentimental, satirical and sexual.

Clow and Baack talk about paying attention to humorous advertisements, about breaking through and remembering advertisements. According to them, the success of humour is based on three pillars. The spectators are: 1. *watching it*, 2. *laughing about it* and most importantly, 3. *remember it*. But it has to be connected to the benefits of the product. Clow and Baack also present the dangerous so-called vampire effect, where we remember the joke, but not the product or the brand. According to the authors, humour should be related to the characteristics of a product, benefits or personal values of the respondent. Sarcasm is working only with young people (Clow and Baack 2008).

Humour Versus Other Emotional Arguments

At the beginning, we have stated that the strongest emotional appeals in advertising apart from humour are also fear, sex and erotic. The researches confirm that humour in advertising is accepted by most of the respondents. Our research probe has also confirmed that humour in advertising is well-liked among future and current idea-makers from the marketing communication students in Zlin and Bratislava. The question was—*What emotional appeal do the students consider the strongest, the most impressive?* And the replies were in Table 1.

From the total of 217, 158 respondents answered that humour is the most impressive for them. The result is little distorted, as most of the respondents were women, who are more likely to be scared than men. Otherwise, the humour would reach even more convincing percentage.

Another question—how or more precisely, when would the respondents use the motive of fear, the respondents preferred social advertising field, but they did not condemn humour as well (Table 2).

Table 1 Intensity of emotional urgent appeals in-ad campaign

	Zlín (CZ)		Bratislava (SVK)	
	Men (34)	Women (83)	Men (23)	Women(77)
1. Humour	20	54	20	64
2. Fear	5	18	2	5
3. Erotic	4	7	–	3
4. Sex	3	1	–	1
5. Other	2	3	1	4

Table 2 Preference of selected emotional appeals in social advertising

1. Containing humour	6	12	9	19
2. In social advert	27	60	9	49
3. Would not use	1	7	3	7
4. Other	–	4	2	2

The context of fear and humour is also evident, because humour is able to moderate the emotional drive of fear. Even bigger role humour plays in context with erotic adverts. It brings the possibility to “make the edges smoother” and therefore transform the advert from “unacceptable to acceptable”.

It is evident that humour is preferred more among men. The interesting part is that Czech students accept erotic symbols more often than Slovak students, although the questioned group consists of young people from the former Czechoslovakia.¹ The differences are caused by higher bigotry, or more precisely narrow-mind of Slovak audience. Considerably, bigger differences can be seen in this field obviously in European or world-wide framework, where sex and erotic are accepted mostly by Nordic nations whereas USA, Italy or Poland (not mentioning Arabic countries) are more reserved. We can meet the differences of understanding of individual cultures or nations also with acceptance of different kinds of humour. Therefore, it is useful to take into consideration the specifics of individual nations or international marketing. British people (35 %) prefer soft word humour, parody, softer and smarter humour than American people (24 %)—they like exaggeration, comparison, and assertive humour. German people (20 %) identify themselves also in humour with straight-forwardness and perfectionism. French people are characterised by the desire for effect, beauty, smoothness and sensuality.

By the final question, we would like to confirm our axiom that humour is well-liked not only by recipients but also by idea-makers. This group is represented also by our sample. Respondents in this case replied (men and women in Slovakia and Czech Republic) the same—100 % of them like watching humour. The option I, like to watch humorous advert, was chosen by all the respondents.

¹Czechoslovakia split up to two individual republics (Czech Republic and Slovak Republic) in 1993.

Conclusion

To summarise the above-mentioned fact that humour in advertising supports attracting one's attention, interest, level of remembering of the brand, promoting claim or campaign. The efficiency is increased by the fact that it makes recipients relaxed, it connects them into groups, it creates positive attitude to a product, campaign and in general it reduces their apathy towards advertising messages.

Its characteristic is connecting the opposites, which can be wittily used to connect product and humorous topic. The contradiction creating surprise and laughter is appropriate to use according to the particular type of promoting tool or other form of marketing communication. In commercial spot, it can be, for example, already at the beginning, during the spot, but especially efficient if it is at the final point. Humour is the strongest emotional argument (hypothesis confirmed) and its usage in advertising is especially appropriate mostly if it is in context with a product, campaign target, appropriate media and its target group.

If all the above-mentioned rules are kept, quality humour creates the relationship to the product, brand and it also indirectly passes it on. Juraskova states that "Creating the relationship to the brand is based on emotions" (Jurášková 2009). Quality humour in advertising plays a positive role for the image of ordering party of the advertising campaign, advertising agencies, and media, who spread this claim. Intelligent humour in advertising, which does not insult the target group, helps not only increase the sales but also the good feeling of all of us.

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The Links Among Quality, Service Recovery, Value, and Loyalty on the Internet

Emel Kursunluoglu Yarimoglu

Abstract The aim of this study was to analyze the relationships among electronic service quality, electronic service recovery, perceived value, and loyalty intentions on the Internet. The survey was applied to 291 college students, chosen by random sampling. Multiple regression analyses were used to show the links among variables. Findings showed that loyalty intentions and perceived value were affected by both electronic service quality and electronic service recovery. Besides this, it was found out that perceived value affected loyalty intentions regarding electronic services offered by websites.

Keywords E-S-QUAL · E-RecS-QUAL · e-Service quality · Website

Introduction

In services marketing literature, there are many studies that show the relations among perceived value, service quality, and loyalty (Bolton and Drew 1991; Cronin et al. 2000; Sirdeshmukh et al. 2002; Karjaluoto et al. 2012). Perceived value is affected by service quality, and it is also one of the antecedents of loyalty. E-service quality may affect value and loyalty on the Internet. This study aimed to focus on revealing the relationships among e-service quality, e-service recovery, perceived value, and loyalty on the Internet.

E-S-QUAL scale (Parasuraman et al. 2005: 230–231) developed for assessing service quality on the Internet was used in the study. The first part of the scale, used for measuring e-service quality of websites, has 22 items and four components such as efficiency, fulfillment, system availability, and privacy. The second part of the

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scale, E-RecS-QUAL, assesses the quality of recovery services provided by websites, and includes 11 items and three components such as responsiveness, compensation, and contact.

Perceived value items, which are the same in the original E-S-QUAL inquiry, were used to measure perceived value in this study (Parasuraman et al. 2005: 231). Behavioral loyalty scale developed by Zeithaml et al. (1996) was used to measure loyalty intentions. The hypotheses were developed based on the effects of electronic service quality and recovery on value and loyalty.

Methodology

The aim of the research was to show the relations among electronic service quality, service recovery, perceived value, and loyalty intentions on the Internet. Hence, the effects of electronic service quality and electronic service recovery on perceived value and loyalty intentions were measured. It also analyzed the effects of perceived value on loyalty intentions on the Internet. The hypotheses based on the literature review were as follows:

- H₁: Electronic service quality affects loyalty intentions on the Internet.
- H₂: Electronic service recovery affects loyalty intentions on the Internet
- H₃: Electronic service quality affects perceived value on the Internet.
- H₄: Electronic service recovery affects perceived value on the Internet.
- H₅: Perceived value affects loyalty intentions on the Internet.

Survey, as one of the quantitative research methods, was implemented in the research. The field study was conducted with the students in the Faculty of Economics and Administrative Sciences of Yasar University. Total population of the faculty is 1269 students. According to the data taken from Students Affairs Dept., the numbers of students are such as prep class 269, freshmen 288, sophomores 248, juniors 190, and seniors 247. However, total 214 students did not register for the new term (2014–2015 spring) in the faculty. The population size was accepted as 1200 students, and the sample size was calculated as 291 students according to Sekaran's sampling size Table (2003). Random sampling method was used, and students were asked for filling in the survey during their courses with permissions of the lecturer. The field study was conducted in May–June, 2015 by the technique of face-to-face survey.

The survey was formed by the questions regarding website usage and visits, demographic, and scales such as E-S-QUAL, E-RecS-Qual, perceived value, and loyalty intentions (Parasuraman et al. 2005: 230–231). E-S-QUAL, as a multiple-item scale, was used for assessing electronic service quality. It has 22 items and four dimensions. E-RecS-Qual scale was used for measuring recovery services through Internet. It has 11 items and three dimensions Perceived value scale has four items and one dimension, Loyalty intentions scale has five items and

one dimension All scales were measured by using a 5-point scale. In the original inquiry, perceived value scale was measured with a 10-point scale, it was modified to a 5-point scale in this research.

Findings

Exploratory factor analysis, using principal component analysis (PCA) as the extraction method was implemented to the items in the E-S-QUAL scale. Four items, SYS1, FUL6, EFF5, and EFF6, were removed from the analysis since they had been loaded more than one factor. Kaiser-Meyer-Olkin (KMO) measure was 0.935. KMO, an indicator that shows reaching enough sample size, must be approximately 1 (Kaiser 1958). Bartlett’s Test which shows the relations among items was 0.000. It must be lower than 0.05.

Component names, items, item loadings, and communalities were shown in Table 1 above. There were 18 items and four components in the analysis.

Table 1 PCA results of the E-S-QUAL scale

Component names	Items	Components				Communalities
		1	2	3	4	
EFF	EFF2	0.767	–	–	–	0.721
	EFF1	0.737	–	–	–	0.692
	EFF3	0.685	–	–	–	0.678
	EFF8	0.640	–	–	–	0.674
	EFF7	0.606	–	–	–	0.618
	EFF4	0.598	–	–	–	0.604
FUL	FUL3	–	0.829	–	–	0.764
	FUL1	–	0.820	–	–	0.770
	FUL2	–	0.755	–	–	0.719
	FUL4	–	0.589	–	–	0.600
	FUL7	–	0.543	–	–	0.639
	FUL5	–	0.428	–	–	0.416
PRI	PRI2	–	–	0.853	–	0.840
	PRI1	–	–	0.815	–	0.785
	PRI3	–	–	0.754	–	0.767
SYS	SYS3	–	–	–	0.868	0.796
	SYS2	–	–	–	0.581	0.697
	SYS4	–	–	–	0.526	0.599

Table 2 Summary of E-S-QUAL PCA

Components	No. of items	α	Variance (%)	Cumulative variance (%)
EFF	6	0.888	49.139	49.139
FUL	6	0.878	7.986	57.125
PRI	3	0.883	6.506	63.631
SYS	3	0.704	5.134	68.765

Components names were same with the names in the original construct: Efficiency (EFF), Fulfillment (FUL), Privacy (PRI), and System availability (SYS). All components explained 68.76 % of total variance. The reliability value of all components was higher than 0.70. In the reliability analysis, the Cronbach's α value must be more than 0.70 (Cronbach 1951). The summary of analysis was shown below (Table 2).

Principal component analysis with varimax rotation method was applied to E-RecS-QUAL scale. Two items, RES5 and CON1, were removed from the analysis since the existence of cross-loadings. Kaiser-Meyer-Olkin (KMO) measure was 0.834. It showed reaching enough sample size. Bartlett's Test, which must be under 0.05, was 0.000.

Component names, items, item loadings, and communalities were shown in Table 3 above. There were nine items and three components in the analysis. Components names were same with the names in the original inquiry: Responsiveness (RES), Compensation (COM), and Contact (CON). The summary of analysis was shown below (Table 4).

Table 3 PCA results of the E-RecS-QUAL scale

Component names	Items	Components			Communalities
		1	2	3	
RES	RES1	0.840	–	–	0.728
	RES2	0.815	–	–	0.692
	RES3	0.797	–	–	0.726
	RES4	0.643	–	–	0.640
COM	COM2	–	0.819	–	0.747
	COM3	–	0.723	–	0.611
	COM1	–	0.608	–	0.637
CON	CON3	–	–	0.825	0.759
	CON2	–	–	0.801	0.743

Table 4 Summary of E-RecS-QUAL PCA

Components	No. of items	α	Variance (%)	Cumulative variance (%)
RES	4	0.839	45.555	45.555
COM	3	0.681	14.610	60.165
CON	2	0.697	9.647	69.811

Table 5 PCA results of the perceived value scale

Component name	Items	Component	Communalities
		1	
PV	PV2	0.855	0.732
	PV3	0.842	0.709
	PV1	0.795	0.631
	PV4	0.791	0.625

Table 6 PCA results of the loyalty intentions scale

Component name	Items	Component	Communalities
		1	
LY	LY4	0.832	0.693
	LY2	0.828	0.686
	LY1	0.817	0.668
	LY3	0.803	0.645
	LY5	0.766	0.586

Principal component analysis was applied to Perceived Value scale (Table 5). Kaiser-Meyer-Olkin (KMO) measure was 0.786. It showed reaching enough sample size. Bartlett’s Test, which must be under 0.05, was 0.000. It showed the existence of relations among items. In the analysis, there are four items, and one component called Perceived Value (PV). Reliability of the component was 83.9 % and it explained 67.44 % of total variance.

Principal component analysis was applied to Loyalty Intentions scale (Table 6). Kaiser-Meyer-Olkin (KMO) measure was 0.846. Bartlett’s Test was 0.000 and it showed the existence of relations among items. In the analysis, there are five items, and one component which is called Loyalty (LY). Reliability of the component was 86.8 % and it explained 65.56 % of total variance.

Multiple regression analyses were performed to test hypotheses (Table 7). As a result of p values which were equal with 0.0000, all hypotheses could be rejected.

Table 7 Regression analyses

	β	Std. error	t	Sig.
LY = f(EFF, FUL, PRI, SYS)				
EFF	0.350	0.045	7.834	0.000
FUL	0.258	0.045	5.776	0.000
PRI	0.366	0.045	8.183	0.000
SYS	0.325	0.045	7.261	0.000
$R^2 = 0.428$ Adjusted $R^2 = 0.42$ F change = 53.604 df 1 = 4 df 2 = 286 Sig. F change = 0.000				
LY = f(RES, COM, CON)				
RES	0.405	0.044	9.300	0.000
COM	0.345	0.044	7.932	0.000
CON	0.416	0.044	9.548	0.000
$R^2 = 0.456$ Adjusted $R^2 = 0.45$ F change = 80.191 df 1 = 4 df 3 = 287 Sig. F change = 0.000				
PV = f(EFF, FUL, PRI, SYS)				
EFF	0.434	0.040	10.891	0.000
FUL	0.323	0.040	8.109	0.000
PRI	0.340	0.040	8.529	0.000
SYS	0.372	0.040	9.330	0.000
$R^2 = 0.546$ Adjusted $R^2 = 0.54$ F change = 86.045 df 1 = 4 df 4 = 286 Sig. F change = 0.000				
PV = f(RES, COM, CON)				
RES	0.476	0.043	11.027	0.000
COM	0.213	0.043	4.941	0.000
CON	0.440	0.043	10.187	0.000
$R^2 = 0.465$ Adjusted $R^2 = 0.46$ F change = 83.262 df 1 = 4 df 3 = 287 Sig. F change = 0.000				
LY = f(PV)				
PV	0.745	0.039	18.974	0.000
$R^2 = 0.555$ Adjusted $R^2 = 0.55$ F change = 360.023 df 1 = 1 df 3 = 289 Sig. F change = 0.000				

Conclusion

This study showed that there are strong relationships among service quality, recovery, perceived value, and loyalty intentions (behavioral loyalty). Loyalty can be explained by e-service quality (42 %), service recovery (45 %), and perceived value (55 %). Perceived value can be explained by e-service quality (54 %) and service recovery (46 %).

As in traditional services, there are various links among quality, recovery, value, and loyalty in electronic services offered by websites. Electronic retailers should give importance to their electronic services' quality, and they should recover their e-services in order to increase value and loyalty.

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Part VI

Business Modelling

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Description:

Simulation modeling provides a powerful methodology for advancing theory and research on complex behaviors and systems. This session aims to promote the understanding of simulation methodology and to develop an appreciation of its potential contributions to management theory by describing the nature of simulations, its attractions, and its special problems, as well as some uses of computational modeling in management research.

Water Footprint Mitigation Strategies for Agrifood Products: The Application of System Dynamics in Green Marketing

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and Eleftherios Iakovou

Abstract Water scarcity (WS), which leads to multiple environmental, social and economic ramifications, has emerged as an indisputable concern for both public and private stakeholders. In this context, the water footprint (WF) concept has been introduced for assessing freshwater consumption and pollution at national, corporate or product level. In the agrifood industry, freshwater is a pivotal constituent since agricultural activities consume 70 % of the global freshwater resources, while food processing operations account for significant freshwater utilization. To that effect, environmentally aware consumers are sensitive to the total product WF generated during agrifood supply chain (SC) operations, as well as to the manner in which the related freshwater exploitation impacts regional WS. Consequently, an increasing number of companies are implementing WF management policies across their agrifood SCs for mitigating freshwater utilization and promoting water-friendly commodities in order to enhance green corporate image and business financial performance. This study proposes a policy-making system dynamics (SD) model for monitoring both the WF of agrifood products and the profitability of the related SCs in terms of net present value (NPV). The model investigates the effect of various market behaviours in the relation between green image factor (GIF) and regional WS, when WF management strategies are implemented. The SD simulation results reveal that WF mitigation policies have a considerable impact on GIF in environmentally sensitive markets, thus increasing the relevant market share and the agrifood SC stakeholders' profitability. Finally, this research provides managerial insights concerning green marketing interventions in the agrifood sector.

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Keywords Agrifood products · Green marketing · System dynamics · Water footprint

Introduction

In recent years, climate change along with increased environmental awareness has shifted consumers' purchasing decisions towards environmentally friendly or else "green" products (Elham and Nabsiah 2011; Rex and Baumann 2007). Indicatively, sales in the European organic food market grew by approximately 70 % during the period 2004–2012, reaching €24.3 billion (FiBL and IFOAM 2015; Soil Association 2014). However, prevailing marketing practices have failed to educate consumers on sustainability issues and to establish a resilient market for eco-friendly products thus far (Peano et al. 2015). Therefore, green marketing emerges as a critical factor towards promoting sales and sustaining a competitive corporate image compared to traditional marketing (Ko et al. 2013). To that end, companies have started to employ green marketing practices, such as eco-certification and eco-branding, in order to trigger consumers' interest in products with sustainable attributes, as well as to foster the profitability of all supply chain (SC) stakeholders (Chkanikova and Lehner 2015).

The concept of sustainable development has emerged as a key issue in the design and planning of food production systems throughout the entire spectrum of operations, spanning from farming to final household consumption (Tsolakis et al. 2014). The prominent role of sustainability in the agrifood industry derives from the fact that around one third of the global food supplies is wasted annually. This statistic implies that 24 % of freshwater resources, 23 % of agricultural land, 23 % of fertilizers and a significant amount of energy used during the production, processing, storage and transportation of food are wasted (Kummu et al. 2012).

Since the agricultural sector consumes and pollutes approximately 70 % of the global freshwater resources (UNESCO 2009), hence intensifying global water scarcity (WS), environmental concerns focus on the overexploitation of freshwater resources in the agrifood sector (Aivazidou et al. 2015). As a consequence, the concept of water footprint (WF) has been introduced for assessing the total direct and indirect freshwater utilization during the production of a commodity or a service (Hoekstra 2008). At the same time, WF labelling on food products could assist companies communicate with green consumers and influence their purchasing decisions, thus gaining the market competitive advantage and achieving sustainable financial performance (Sharma and Iyer 2012).

In this context, the aim of the study is to investigate the impact of consumers' environmental awareness in corporate sustainability in terms of freshwater resources' preservation and profitability enhancement. In this paper, we adopt the system dynamics (SD) methodology in order to monitor the WF and the financial

performance of an agrifood SC during different scenarios of consumer behaviours and policy interventions. In fact, SD is a simulation-based tool for analyzing the dynamic behaviour of complex systems that has been proven to be useful in strategic policy-making (Roberts 1978; Sterman 2000).

The remainder of the paper is organized as follows. In Sect. **Model Development**, we develop a SD model for investigating the impact of various market behaviours in corporate green image factor (GIF) as a function of regional WS, in case WF management strategies are employed. In Sect. **Results and Discussion**, we elaborate on the results of the agrifood system’s WF and net present value (NPV). Finally, Sect. **Conclusions** concludes with managerial insights and directions for future research with respect to green marketing strategies for the sustainable growth of the agrifood sector.

Model Development

We consider the SC of an agrifood product. The business environment is assumed to be monopolistic, which implies that all stakeholders (suppliers, single manufacturer and consumers) are located within a particular region with specific freshwater resources’ availability. The agrifood SC under study includes three echelons: (i) the farming stage, where the agricultural commodity is produced, (ii) the food processing stage, during which the raw product is transformed into a marketable food commodity and (iii) the retailing stage, where demand is defined by the consumers’ environmental sensitivity concerning regional WS.

As illustrated in Fig. 1, environmental sensitivity is modelled through the GIF concept, which represents a percentage change in consumers’ demand (Georgiadis and Vlachos 2004). Three different market behaviour scenarios are developed as follows. In the base scenario, consumers are not environmentally aware with regard to WF, resulting in zero GIF. In the linear and S-curve scenarios, GIF is expressed

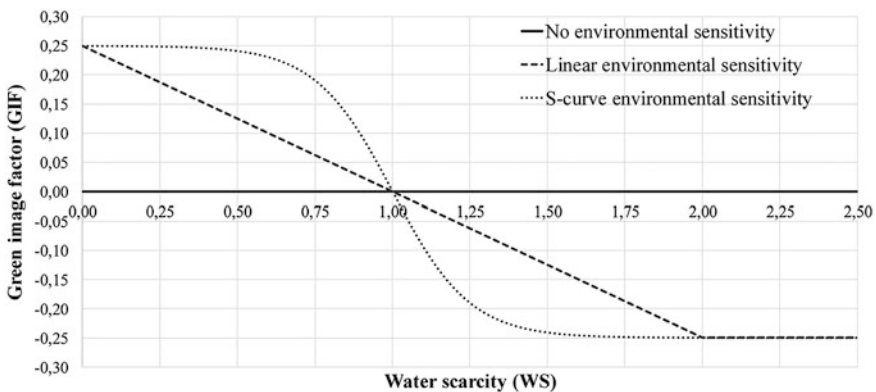


Fig. 1 Environmental behaviour scenarios

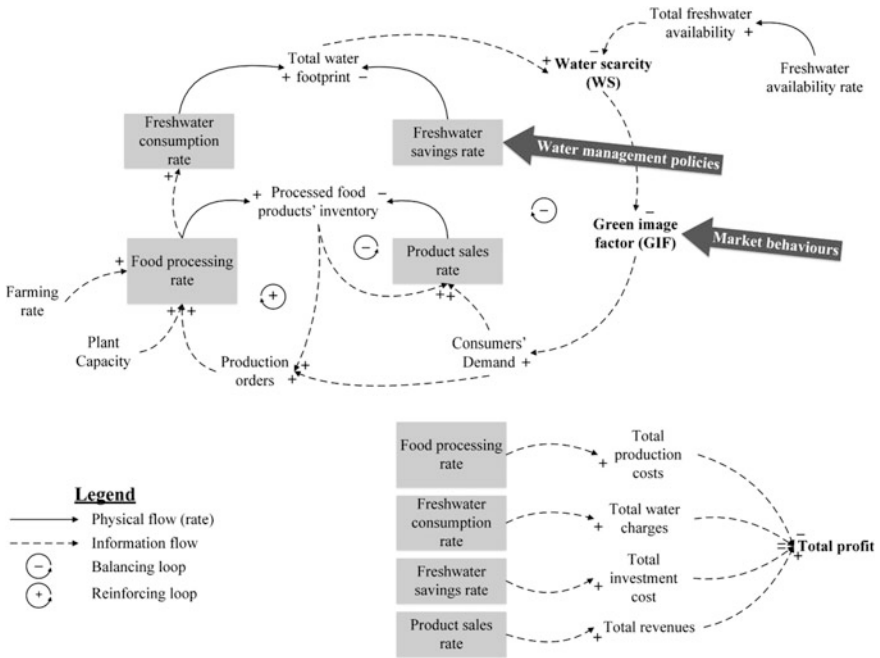


Fig. 2 Causal loop diagram

as linear and logistic functions of regional WS, respectively. In particular, WS is calculated as the ratio of WF to freshwater availability in a specific region (Hoekstra et al. 2012). In case WS is less than one, consumers' demand increases due to positive GIF values and vice versa.

Concerning the agrifood system's WF, a significant amount of freshwater resources is consumed and polluted during the farming and food manufacturing stages, thus intensifying regional WS. Considering the prospective water-related policy schemes (European Commission 2012), SC stakeholders aim at implementing effective WF mitigation policies in order to limit regional WS and promote sales of eco-friendly products. The causal loop diagram that illustrates one reinforcing (+) and two balancing (-) feedback loops of the aforementioned conceptual system is depicted in Fig. 2.

At the same time, the system's profitability is defined as the margin that is available to stakeholders when costs are deduced from revenues. The cost factors which are identified within the system include the productions costs and the water charges. In case a water-related mitigation policy is implemented, the cost of investment is also considered.

Table 1 WF and NPV results (% change)

WF/NPV	Base scenario	Linear scenario (%)	S-curve scenario (%)
No policy	-/-	-11.42/-8.54	-19.75/-19.78
Policy	-92.29/-0.20	-90.17/+10.10	-89.70/+17.22

Results and Discussion

The applicability of the proposed SD model is demonstrated through the case of wine production. To that end, realistic quantitative estimates associated with freshwater consumption across the wine SC are adopted from the literature (Herath et al. 2013). The SD model is simulated with the Powersim software. A strategic horizon of 30 years is selected in order to capture the market dynamics with regard to consumers' environmental sensitivity, while the time step is set to 1 year. Moreover, the SD model's validity is verified through indirect structure tests, including extreme condition tests, behaviour sensitivity tests and variable units' consistency.

Thereafter, we estimate the total WF and the NPV of the annual profits, including investment costs in case of WF mitigation policies employment, during the 30-year strategic horizon. Table 1 summarizes the observed percentile changes in the WF and the NPV for the different market behaviour scenarios and for each of the two policy options under consideration. The base scenario, where no policy intervention is performed, is used as a benchmark for the calculations.

The simulation results indicate that the implementation of freshwater mitigation practices in environmentally sensitive markets could: (i) significantly reduce the total WF, and (ii) increase the NPV of the overall profits due to the consumer sales growth. In case of no policy intervention, although the total WF and the NPV are reduced in both the linear and S-curve scenarios, the latter case exhibits a higher decrease since environmental sensitivity to WS is more intense. These reductions stem from the decline in sales due to the lower consumers' demand.

On the contrary, if a WF management strategy is applied, a considerable reduction in the total WF in all three scenarios is observed. As regards profitability, the NPV is slightly decreased due to high investment costs in the base scenario, where there is a lack of environmental sensitivity. Nevertheless, in the linear and S-curve scenarios, the reduced freshwater consumption leads to low regional WS, thus increasing the GIF which in turn boosts consumer sales and increases the NPV.

Conclusions

In this manuscript, we propose a SD model for monitoring the WF of agrifood products and the profitability of the related SCs. Specifically, our modelling approach investigates the manner in which various market behaviours affect corporate GIF

according to regional WS, in case WF mitigation strategies are implemented. The numerical example documents that freshwater management policies in environmentally sensitive markets could promote eco-friendly agrifood products and increase market share, thus enhancing business financial performance.

As regards future research, focus should be placed on the stimulating role of green marketing techniques upon consumers' environmental sensitivity. In order to exploit the proposed SD simulation tool, it is suggested that marketing specialists should further study the application of WF labelling and branding in agrifood commodities for guiding consumers towards green purchasing decisions.

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The Role of Perceived Risk in Online Information Search and Pre-purchase Alternative Evaluation of Products with Significant Experiential Attributes

Gabriela Balladares, Francesc Miralles and Chris Kennett

Abstract While it has been pointed out that search and prepurchase alternative evaluation phases have changed due to consumers' use of online media, the factors that determine these changes have not been explained. In addition, although it is accepted that perceived risk leads to further information search; this relationship is not clear in online environments. This research explores the manner in which perceived risk affects information search and alternative evaluation of products with significant experiential attributes when online media is used as a source of information. The findings highlight new insights on the effect of perceived risk in information search and alternative evaluation in online environments.

Keywords Online search behavior · Perceived risk · Buying decision-making process

Introduction

The advances in the information and communication technologies have influenced consumer behavior in the way they take purchase decisions (Darley et al. 2010; Edelman 2010; Grant et al. 2007).

While in traditional settings the understanding of the consumer buying decision-making process was clear, authors have suggested that due to the explosion of e-commerce and the increasing number of consumers who use interactive media for pre-purchase information search and online shopping, the way they take

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shopping decisions when using both online and offline channels in their buying processes seems to have changed.

The literature in marketing evidences that online media allow vendors to create retail interfaces with highly interactive features such as the exchange of information, availability of information on demand, response contingency, customization of content, and real-time feedback (Haubl and Trifts 2000). However, although the characteristics of the online environment in terms of consumers online experiences, such as convenience and interactivity have been analyzed, the changes in consumer's search behavior and the implications of online search in consumers buying decision-making processes remains unclear.

An emergent stream of the literature asserts that the use of online media as a source of information has changed the buying decision-making process in the search and alternative evaluation stages (Grant et al. 2007; Edelman 2010).

Prior research on consumer search behavior has put the focus on the value consumers find in the information obtained from the different sources during their buying processes. In this sense, it has been found that consumers have distinct preference for online sources for "objective" information for instance search attributes (e.g., price, product specifications) and a distinct preference for offline information sources when dealing with "subjective" information types (e.g., wine taste, shoes comfort) (Grant et al. 2007; Ratchford et al. 2003). What is more, it has been suggested that a possible reason for using offline sources for "subjective" information may be probably due to the higher perceptions of risk attached to online information sources and thus limiting the value derived from such online sources (Grant et al. 2007).

Therefore, focusing on consumer's risk perception we have found that *Risk aversion* has been pointed out as the fundamental reason behind information search. What is more, the literature agrees that consumer risk aversion is thought to affect the volume of consumers' information search.

Previously, Chaudhuri (2001) found that products that are important to consumers are perceived as risky in terms of performance, financial, and physical risk and these perceptions of risk lead further to information search. However, these findings were only explained in offline environments.

Thus, on the one hand, the factors that explain the changes in search and alternative evaluation stages have not been explained. On the other hand, although it has been tested that perceived risk is a determinant of information search, these findings have been only tested in offline environments. In view of that, this research aims to shed light on the role of perceived risk in consumers' search behavior and alternative evaluation of products with significant experiential attributes when using offline and online information sources.

This research uses an inductive approach with an interpretivist theoretical perspective. Data was gathered using focus groups of consumers in a buying decision-making process of clothing and footwear, a product category that is perceived as important and with experiential attributes that cannot be evaluated physically in online media.

The findings highlight the similarities and differences in the effect of perceived risk on search and alternative evaluation between offline and online environments.

Literature Review

Buying Decision-Making Process

The process through which consumers take purchase decisions is explained through a model that describes the stages that shape this process from a cognitive and psychological perspective. Engel et al. (1995) theory presents the buying decision-making process as a linear and sequential process where according to Edelman (2010) consumers move down from one stage to the other narrowing down the options in the consideration set. The model consists of six main stages; Need recognition, search, prepurchase alternative evaluation, purchase, consumption, and post-consumption evaluation.

During search stage, consumers take actions to gain knowledge and during prepurchase alternative evaluation phase, consumers analyze, and evaluates alternative solutions to make the purchase decision (Butler and Peppard 1998).

Nevertheless, with online media as a source of information, there is a call for attention in the literature to rethink the manner in which consumer's information search is explained. Darley et al. (2010) assert that research on consumer behavior identify convergence and divergence of online and traditional and the decision-making process.

A stream of research agrees that there are differences in consumer's preferences for online sources for "objective" information (search attributes) and the differences in consumers preferences for offline information sources when dealing with "subjective" (experience attributes) information type. Search products are those with features and characteristics that can be evaluated by consumers before purchase (Klein 1998). Full information of these products can be easily obtained by consumers so they can compare and make a purchase decision without trying or touching the product. In contrast with search products, experience products are those whose characteristics such as quality or price are difficult to observe in advance, but these characteristics can be ascertained upon consumption (Klein 1998).

Grant et al. (2007) claim that there is a need in understanding consumer's use and perceptions of the value role of "subjective" online information when online information does not meet their needs. In that case, there is an iterative process of switching between online and then offline information sources to achieve the information utility consumers seek (Grant et al. 2007). The pursuit of information utility becomes relevant then during search and alternative evaluation, but what determines this iterative process is not well understood.

Darley et al. (2010) work reevaluate the purchase decision-making process and adapts the Engel et al. (1995) model including the influence of the online environment. The study affirms that the rise of the internet and e-commerce has changed every aspect of daily lives affecting every process's stage.

Finally, the work of Edelman (2010) provides insights on the way consumer's buying decision-making process takes place taking into consideration the influence of e-commerce. Under this perspective the process becomes more dynamic and cyclic rather than linear consisting of "touch points" or moments where consumers are open to influence.

Perceived Risk

For decades, consumer behavior literature has associated perceived risk with consumers' information search. Perceived risk is defined as the potential for loss in a product class which is due to an overall evaluation of the consumers' prior knowledge of the rational and emotional consequences of using a product (Chaudhuri 2001). The literature claims that consumers develop ways of reducing risk by searching for information that enables them to act with a degree of confidence in situations of uncertainty.

Later on, Dowling and Staelin (1994) introduced a model where risk is a determinant of information search. More recently, Chaudhuri (2001) tested a model where perceived risk is a determinant of information search and fully mediates the effect of product importance dimension of product involvement on information search. The study concludes that products that are high in involvement are also high in perceived risk in terms of performance, financial, and physical risk.

Finally, Grant et al. (2007) affirm that consumer risk aversion has been found in the literature as the fundamental reason behind information search but has only been examined in offline situations.

Research Gap

The literature affirms that with consumers using online and offline information sources the buying decision-making process has changed in the stages of search and alternative evaluation. However, the literature exploring the factors that explain these changes has been scarce. An emergent stream of the literature suggests that perceived risk is behind the changes in online consumer behavior. What is more, it has been widely accepted that perceived risk is a determinant of information search; but it has been only explained in offline environments.

The insights of the literature and the characteristics of online environments give rise to suggest that there are new insights in the manner that perceived risk affect information search and alternative evaluation of products with significant experiential attributes when consumers use online and offline information sources.

Thus, the factors that explain the changes in search and alternative evaluation phases and the role of perceived risk in consumers search and alternative evaluation of products with significant experiential attributes when using online information sources, remain unclear and constitutes a research gap. Accordingly, our research question ask:

RQ: During search and alternative evaluation of products with significant experiential attributes:

What are the differences between offline environments and online environments in terms of the effect of perceived risk on search and alternative evaluation?

Method and Data

An in-depth analysis of the philosophy of science and social sciences has been done. An interpretivist approach is taken with reality seen as multiple and subjective and highly dependable of the researcher interpretations. A homogeneous focus group was conducted in order to explore the risks perceived during search and alternative evaluation stages and the effect of perceived risk in their search and evaluation patterns. The unit of analysis is the consumer, and the sample consisted of eight individuals, digital natives, (those born after 1980 (Prensky 2001)), searching, and evaluating apparel and footwear in online and offline information sources.

Results

The data collected in the focus group was recorded and then transcribed. The data analysis followed a hermeneutic approach. Table 1 presents the main results that show that there are similarities between online media and offline media in terms of the effects of perceived risk on information search. However, the effects on information search in the form of reading more, or purchasing around were not found in our results with the presence of online media.

In addition, the results suggest new insights of the effect of perceived risk on search and alternative evaluation when using online information sources (Table 2).

Table 1 Effects of perceived risk on search and evaluation online

Risk D	Characteristic	Selected verbatims	Contribution (online sources)
Performance financial physical	Search for more information before purchase	<i>“My last purchase was one week ago, I wanted shoes and first I searched them on the internet and then I chose those that I liked the most in that store and then the next day I went to the store, I knew that I wanted them and given that the size was correct I bought them” (participant 2)</i>	There is perception of performance risk from online sources. Perceived risk cause further information search offline. There is a combination of use of, first online and then offline information sources
	Ask the opinion of others about the product	<i>“If not, my friends... I send them a picture... saying I have these three... I send the picture in my mobile directly, I send it through WhatsApp y thats it” (participant 8)</i>	A social type of risk, lead to information search from online sources

Table 2 New insights on the effects of perceived risk on search and evaluation online

Risk D	Characteristic	Selected verbatims	Contribution (online sources)
Performance financial physical	Performance risk as “risk of returning items”	<i>“I feel lazy to go to the mail again and take the article there, and wait in the line...” (Participant 1)</i>	A new type of risk is involved in additional information search
	Going directly to the offline store	<i>“Yes, I fear more if I don’t know the company” “I would go to the store, and then maybe I would buy on the internet... it depends” (participant 8)”</i>	Perceived risk in unfamiliar brands does not increase the amount of information searched Risk perception is higher in online sources than offline sources for unfamiliar brands

Discussion

Similar to offline settings, in online environments information search increased as a function of risk perception. Consumers need more information in situations of uncertainty, for instance about size or appearance. In this case, consumers used online information sources due to the convenience of this media; but, for clothing and footwear, online information was not enough to overcome risk perception. In the end, consumers supplemented online information with offline information, increasing in this way the total amount search. Asking the opinion of others was

also found as a way to deal with risk perception, but in this case, the channel used was exclusively online and also resulted in more information search. New insights suggest a new risk type “risk of returning items” that leads to further information search. Finally, it was found that when consumers evaluate unfamiliar brands, the amount of information they search and evaluate do not increase. This can be explained by the use of a single offline channel, instead of adding both channels.

Conclusion

Similarities and differences were found between offline and online environments in terms of the effect of perceived risk on search and alternative evaluation. While perceived risk leads to further information search for unfamiliar brands there is no evidence of an increase of the information search and alternative evaluation activities when using both online and offline information sources.

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Electricity Pricing Mechanism in a Sustainable Environment: A Review and a System Dynamics Modeling Approach

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Abstract Electricity is an undisputed factor supporting human development, while further supporting social wellbeing and fostering economic growth of modern societies. Therefore, the electricity market provides a vivid policy-making arena for the EU regulators, where on-going structural reforms are promoted with the aim to encapsulate and accommodate sustainability aspects. Notably, the EU Member States have adopted the strategic roadmap “Europe 2020” toward reducing greenhouse gas emissions and energy consumption by 20 %, and generating 20 % of energy from renewable sources. However, our research highlights that strategies trying to balance sustainable electricity supply with demand often neglect the societal pricing acceptability of the electricity provided to consumers. Thus far, existing literature focuses on electricity pricing policies that fail to capture the dynamics that have to govern realistic pricing schema in the electricity sector. To that end, this study elaborates the system dynamics (SD) methodological approach to embrace the potential dominant factors within a sustainable electricity system. The proposed SD framework could assist public and private stakeholders in determining a rational electricity pricing policy within a sustainability context. Finally, policy-making interventions are discussed in order to provide managerial insights for the decision-makers.

Keywords Electricity pricing mechanism · Sustainability · System dynamics

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Introduction

Economic development of nations and prosperity are associated with a commensurate growth in energy consumption and even specifically in electricity. Indicatively, for the specific case of the Association of Southeast Asian Nations (ASEAN), the growth rate of electricity consumption during the period 2000–2009 was 6.6 % while the corresponding world average was only 3.1 % (GDP growth of 5.2 and 3.5 %, respectively) (Chang and Li 2015). However, environmental concerns and health risks necessitate energy conservation and reductions in the CO₂ emissions related to the use of fossil fuels for generating electricity (Lising 2012).

To that end, regulatory reforms and technological advancements have fueled the global exploitation of renewable energy sources for power generation, i.e., wind, solar, and hydro power (Milstein and Tishler 2015). For example, the European Union established as a strategic goal that by 2050 will have developed a competitive low-carbon economy followed by reductions in the emitted Greenhouse Gas (GHG) emissions by 80–95 % (EC 2011a). The projected share of renewable energy consumption in 2050 is thus estimated to range between 55 and 75 % of gross final energy (EC 2011b).

Nevertheless, the significant costs associated with the exploitation of renewable energy sources fail to incentivize the adoption of renewable energy (Hartmann and Apaolaza-Ibáñez 2012), while further dictate the need for investments and appropriate pricing strategies (Ritter et al. 2015). In short, pricing is a significant variable that impacts the effective promotion of clean and sustainable energy (Iskin et al. 2012). However, existing pricing strategies trying to balance sustainable electricity supply with demand often neglect the societal pricing acceptability of the electricity provided to consumers (Sheth et al. 2011).

To this effect, the present manuscript provides a brief review of the electricity pricing mechanisms with a specific focus on electricity generated by renewable energy sources, and further proposes a system dynamics (SD) framework that could assist public and private stakeholders in determining a rational electricity pricing policy within a social acceptability context. The rest of the paper is organized as follows: In section [Literature Review](#) we present a review of electricity pricing mechanisms and we further identify critical factors that influence electricity prices. In section [System Dynamics Methodological Approach](#) we develop our SD methodological approach that embraces the social acceptability pattern that shapes consumer prices within a sustainable electricity system. Finally, we wrap-up in section [Modeling Framework](#) with conclusions and future research steps.

Literature Review

The liberalization of electricity markets provides a promising ground for research activities related to energy pricing mechanisms and forecasting (Füss et al. 2015; Borenstein 2012). Main energy pricing mechanisms include statistical modeling

(e.g., Glover and Enz 1996), linear programming (e.g., Aki et al. 2000), stochastic approaches (e.g., Kian and Keyhani 2001), neural networks (Anders and Rodriguez 2005), Markov models (Haghi and Tafreshi 2007), and decision tree approaches (Filho et al. 2009).

Generally, the pricing criteria elaborated by the aforesaid pricing mechanisms can be clustered in the following five categories depending on their properties and areas they associate (Kocaoglu et al. 2011): (i) economic, (ii) technological, (iii) social, (iv) political, and (v) obstacles. Remarkably, other studies focus on the factors that affect renewable energy investments and further highlight their significance from the perspective of a developed or developing country (Iskin et al. 2012).

System Dynamics Methodological Approach

The SD methodology is grounded in the theories of linear/nonlinear dynamics and feedback control loops and is well documented as an approach for studying the dynamic behavior of complex systems. The theory of SD methodology was developed during the 1950s and 1960s by Jay W. Forrester as a policy design tool for complex management business problems (Forrester 1961). Despite traditional discrete event simulation-based approaches, the SD methodology provides an understanding of changes focusing on the interaction between physical flows, information flows, delays, and policies that create the dynamics of the variables of interest and thereafter searches for policies to improve system performance. Through analyzing the processes of information feedback, the SD methodological approach reveals the interaction between physical flows, information flows, delays, and policies that create the dynamics of the variables of interest and thereafter searches for policies to improve system performance.

The structure of a system in SD methodology is based on causal loop diagrams. The causal loop (influence) diagrams capture the major feedback mechanisms. These mechanisms have either a negative (balancing loop) or positive (reinforcing loop) effect. The direction of the influence lines (causal links) displays the direction of the effect. The sign (+) or (-) at the upper end of the influence lines shows the sign of the effect. When the sign is (+), the variables change in the same direction, having positive or negative influence (Sterman 2000). Through the causal analysis, the dominant feedback loops (balancing and/or reinforcing) will be exhibited, as mechanisms governing the mode of the dynamic behavior of the system.

Modeling Framework

The general approach in energy systems is that supply corresponds to the articulated demand through a pricing mechanism as depicted in Fig. 1. Therefore, our aim is to propose a conceptual system for monitoring the sustainability of an energy system

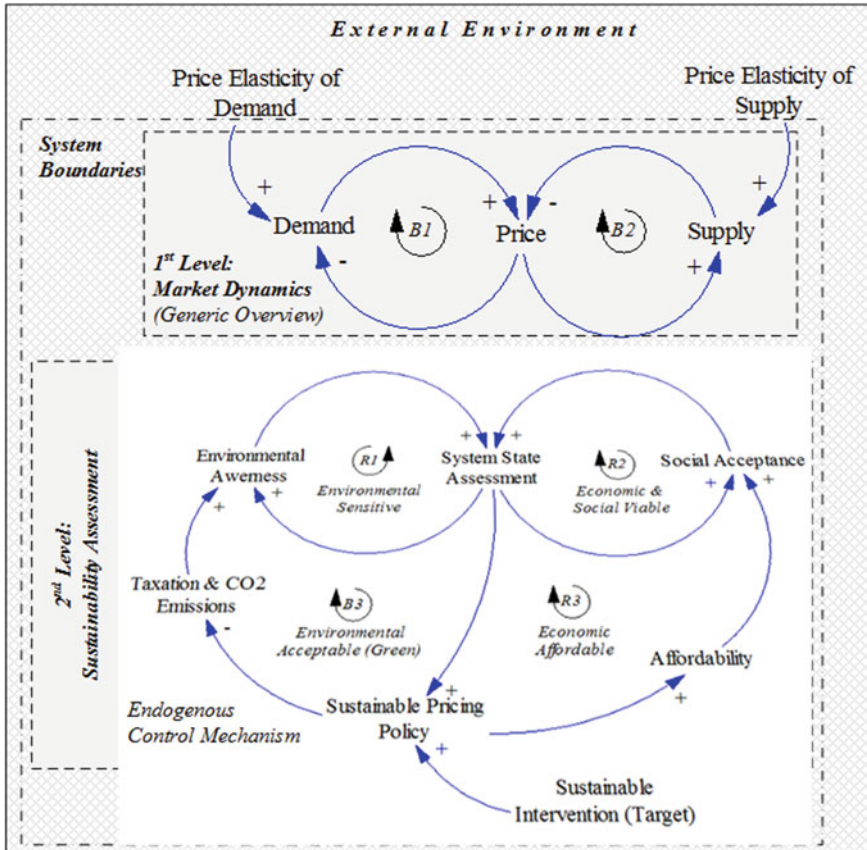


Fig. 1 Causal Loop Diagram of the system under study: introducing the endogenous control mechanism

through embracing the endogenous control mechanism trying to balance four (4) dynamics including: (i) environmental sensitivity, (ii) economic and social viability, (iii) economic affordability, and (iv) environmental acceptability.

At first, we identify two levels of analysis. The first level of analysis focuses on the generic overview of the electricity market dynamics. The price formation can thus be attributed to an adaptive process aiming at balancing the effects of the demand and supply as demonstrated by the balancing causal loops B1 and B2. At a second level of analysis, we identify three reinforcing and one balancing loops that affect the electricity system state (see Fig. 1). The decision-maker has to determine a sustainable target; hence, the system sustainability is the divergence between the current system state and the strategic sustainability target. Thereafter, affordability is a function of sustainability and social acceptance, while taxation is a function of sustainability and environmental awareness. The overall system objective is to

reach an equilibrium between the installed conventional production capacity and sustainable electricity production.

Research Results

Focusing on the social acceptability of electricity price, we investigate the role of consumers' environmental awareness and affordability toward the formulation of a social acceptable pricing policy in a time horizon of 10 years. Our analysis follows the goal seek approach and proves that the social acceptance of electricity price toward articulated environmental and economic sustainability targets follows an S-shaped curve (see Fig. 2). Following, Fig. 3 depicts the trend of electricity price taxation and affordability as a result of the implementation of a policy intervention.

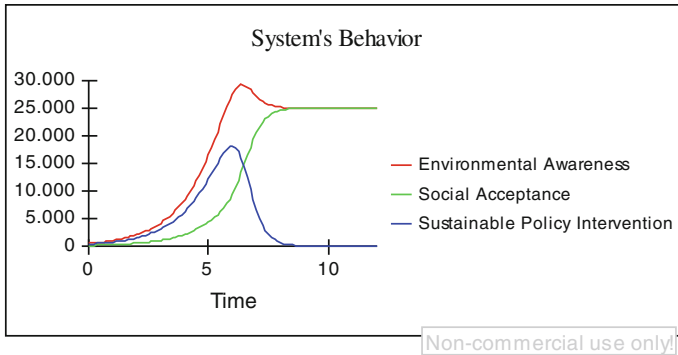
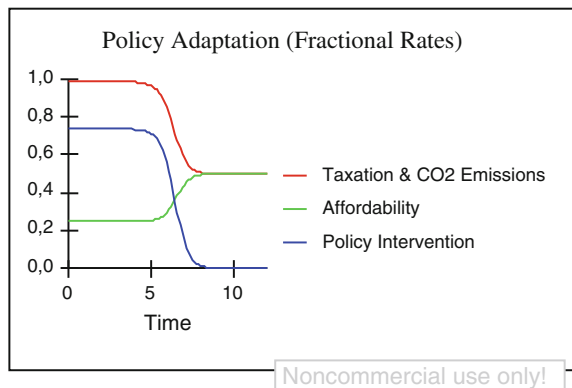


Fig. 2 Behavioral representation of the system under study

Fig. 3 Representation of policy adoption rates



Concluding Remarks

Electricity pricing mechanisms and sustainability dimensions are often neglected by the scientific research and are rather regarded as separate components of the respective systems. To this effect, our proposed model is a first-effort generic approach toward holistically embracing the social dynamics affecting electricity price mechanism.

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Strategic Communication Process for Sustainable Entrepreneurial Environment in Nonprofit Organizations

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Abstract This research process is focused on the analysis of three axes which are Fair Treatment, Team Effectiveness, and Job Satisfaction of employees and decision-makers who are occupied in Nonprofit Organizations. Nowadays, the reduced financial flexibility imposes a careful delimitation of strategic communication that is implemented by Nonprofit Organizations. The aim is to examine a strategic communication process for a sustainable entrepreneurial environment. More specifically, this research attempts to find a possible correlation between the personal perception of each employee regarding the level he treated fairly in the working environment (Fair Treatment) and the existence of an effective team into which the employee feels he is a part of (Team Effectiveness). The purpose is to draw conclusions on how these two factors impact on the Job Satisfaction of the employee or decision-maker. The possibility to have correlations among the above axes can be operated as a feedback to highlight strengths and weaknesses of Nonprofit Organizations to their decision-makers.

Keywords Strategic communication • Leadership in nonprofit organizations • B2B communication • Job satisfaction • Team effectiveness • Fair treatment

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Introduction

The vicious global competition, the growing market complexity plus the rapid technological evolution create a dynamic changing environment in contemporary business world (Weldy 2009; Sakas et al. 2014). Managers have to face many new challenges, including the development in communications and information technology, increasing competition due to globalization, the importance of the strategic management perspective, the emergence of sustainability, and the ever-increasing importance of human resources management (Trivellas and Reklitis 2014). For the construction of a sustainable economic environment, organizations need to create the appropriate communication strategy process to their employees. Several research approaches have analyzed the issue of strategic communication in non-profit organizations (Liu 2012; Patterson and Redtke 2009).

Setting measurement quantitative tools which enrich three concepts, Fair Treatment, Team Effectiveness, and Job Satisfaction of each individual, is possible to encapsulate the overall performance of a group. These factors posing employees and decision-makers in the center of attention, creating a positive performance for the organization. The degree to which an organization can meet its goals and objectives depends on its decision-makers and the leadership styles these managers utilize to their employees (Alsughayir 2014). We investigate the possible relationship among these three axes, creating a strategic communication feedback process for the construction of a sustainable entrepreneurial environment in Nonprofit Organizations.

Fair Treatment

The personal perception of each employee about the way he is treated by management in the working environment constitutes a rich field of research. Perceptions of fairness are fundamental appraisals within work settings or strategic planning (Folger and Cropanzano 2001; Colquitt et al. 2001). Individual's personal perception of fair treatment and justice are critical predictors of organizations' performance and job satisfaction (Cropanzano and Greenberg 1997).

The existence of fair and ethical treatment motivates employees to feel that they have a respected and a dignified position within the organization (Kickul 2001). On the other hand, low levels of fairness are related with counterproductive behaviors and turnover intentions (Holtz and Harold 2013; Nadiri and Tanova 2010). In that light, leaders are proposed to have a central role in the empowerment of self-esteem process of their employees (Randolph and Kemery 2011). Employees' high satisfaction constitutes the barometer for a successful management approach, contributing actively in the improvement of all management levels in organizations.

The level of appreciation which each employee or decision-maker believes that receive from his associates, and the attention given by the rest of the staff when he speaks are a few points which affect the fairness of individuals within the group. In addition, particular attention will be given to the level of trust that exists among the individuals of a group. A climate of trust and motivational tools are being provided by employers lead to a positive impact in creating job satisfaction (Yoon et al. 2001). The level of confidence and fairness between employees is a point that may affect not only the overall performance of the group, but also the level of job satisfaction of each individual. Several studies have shown that fair treatment is relevant to employer inducement, job satisfaction, and overall organizations' commitment (Aryee et al. 2002; Colquitt et al. 2001).

Team Effectiveness

Another object of research in this study is the dynamic of teamwork as a major part of an organization. More specifically, the attempt to create working groups that contribute not only to the Job Satisfaction of employees through their work, but also in the general creation of a viable and productive business environment. The role of communication in the team becomes a prelude to the job satisfaction of the member and the success of the team (De Dreu and Weingart 2003). According to Parker and Wall (1998), effective management of teams can increase individual's job satisfaction, leading to a better collaborative performance.

In the modern world, we observe how work environments are becoming increasingly more complex, fast moving, and dynamic (Thornton et al. 2009). This fact requires a shift from vertical decision-making activities to a more horizontal partnership and from individual jobs to the creation of a more functionalized structure on cross-functional working groups, incorporated in highly complex and dynamic workflow systems (Ramezan 2011). According to Adriana (2012), the strong sense of belonging in a group and feel strongly intertwined with it, reduces the tendency of willing to leave the team and increases the commitment not only with every member individually, but also the team as a whole. Within the framework of the team, an ideal plan is to create feelings of trust and equality in order to ensure a dynamic teamwork.

According to Berg and Karlsen (2014), special emphasis should be given to positive emotions caused in teamwork, due to the beneficial results they can bring to the Team Effectiveness. Some of these are the improving relations that the members create with each other, the reduction of stress, the development and configuration of clear roles and goals, and the overall satisfaction in the workplace. Following Brodbeck (2003), who also deals with groups and how they can increase their effectiveness in terms of the climate inside them, he sums up the main features which are: (a) the existence of empathy, cooperativeness, support, and common

understanding among the members, transferring a mutual trust atmosphere, (b) regular contact and communication between its members, (c) a common line with clear, realistic, and achievable goals and objectives that have to be achieved (d) the existence equality among its members, (e) members perceiving a kind of personal development and a general support in the fulfillment of their plans as long as the group enhances their creativity.

The substance discussed above fulfill the necessary preconditions for the existence of an effective team into which the employee feels that they are equally capable of acting both in team and individually. These elements have as goal to lead to an overall picture of Job Satisfaction.

Job Satisfaction

Job satisfaction is a subject that certainly can be defined in many and different ways. According to Locke (1976), job satisfaction has been characterized as “a pleasurable or positive emotional state resulting from the self-appraisal of one’s job or job experiences.” A few more essential criteria of job satisfaction include work, recognition, superiors, colleagues, and management. Satisfied individuals who feel stronger bindings to their organization, are highly motivated to work harder and finally, tend to achieve superior performance (Rigopoulou et al. 2011; Lee et al. 2010).

Hirschfeld (2000) indicates that the various aspects of job satisfaction can be separated into two categories: internal and external. The first category includes the inner feeling that the employee has on issues related to his overall personal job satisfaction. Respectively, the second category relates more with issues resulting from the working environment. One of the principal is the collaborators and the overall efficiencies of the team the employee is a part of. According to this, Campion et al. (1993) found a positive relationship between individual’s satisfaction and the level of communication and cooperation within the team. Significant empirical evidence showed that procedural fair treatment of employees’ and job satisfaction constitutes a strong correlation with individual performance (Zimmerman and Todd 2009; Cobb and Frey 1996; Konovsky and Cropanzano 1991). The above-mentioned theories perceived the correlation of factors (Fair treatment—Team Effectiveness—Job Satisfaction) as they already mentioned and the question arises of what the research results show by associating these three axes.

The research in the literature review gives a sensible reason to investigate a possible correlation among the above-mentioned axes. Therefore, the research hypotheses are the following:

- H1: Fair Treatment has a positive correlation with Teamwork Effectiveness
- H2: Fair Treatment has a positive correlation with Job Satisfaction
- H3: Teamwork Effectiveness has a positive correlation with Job Satisfaction.

Methodology

The questionnaire was sent via email to 450 employees and managers in more than ten countries. All of them are members with different positions in Nonprofit Organizations. Survey's content validity was established via pretesting process in ten "pretest" participants to make remarks regarding the items (Chatzoglou et al. 2009). After one reminder, 132 participants agreed to complete the questionnaire (response rate 29.3 %). Further attempt was made for participants to answer as honestly as possible (Podsakoff et al. 2003) in a seven Likert Scale, minimizing the proclivity to respond in a socially desirable way. Moreover, the anonymity and the confidentiality of participants' answers became clear.

The survey was divided into three major sections, Fair Treatment FT of each individual (9 items), Teamwork Effectiveness TE (7 items), and Job Satisfaction JS (6 items). Variables such as Gender, Education, Job Experience, Position, Current Occupation, and Self-Estimated Technological Experience were used to capture basic demographic information of the participants.

Data Analysis and Results

Principal Component Analysis (PCA) with a normalized varimax rotation was confirmed in order to testify the possible positive correlation among the FT, TE, and JS factors. Four items, two from FT factor, one from TE, and one from JS were excluded from the analysis due to statistically insignificant loadings. The Bartlett sphericity testing the degree of correlation between the variables ($p < 0.01$) and the Kaiser–Meyer–Olkin (KMO) indicator verified the adequacy of the sample (KMO coefficients ranged from 0.744 to 0.839). Cronbach's alpha coefficients ranged from 0.883 to 0.899 (Table 1).

Stepwise Pearson correlation analysis was performed to test the hypotheses (Table 2). For the first hypothesis, Fair treatment has a positive correlation with Team Effectiveness. The correlation between FT and TE is highly statistically proved with a significant 0.627 ($p < 0.01$) factor loading since 62.2 % total variance is explained. This loading constitutes the highest rate among all the correlations of JS, TE, and FT.

Similarly, FT has a positive correlation with JS (second hypothesis). The factor loading 0.458 ($p < 0.01$) is related with a strong statistical significance with JS since JS has a 68.32 % total variance explanation. The third hypothesis found a statistical significance correlation 0.518 ($p < 0.01$) between TE and JS with a 66.65 % total variance explanation of TE component.

Table 1 Respondents profile

Gender	Male: 35.6 % Female: 64.4 %
Education	39.4 % Undergraduate Studies
	38.6 % Postgraduate Studies
	22 % Ph.D.
Job experience	25.75 %: 1–5 years
	24.25 %: 6–10 years
	32.6 %: 11–20 years
	17.4 %: 21 years or more
Position	65.9 %: Employees
	9.2 % Technical Support
	18.1 %: Managers
	6.8 % Senior Managers
Current occupation	78.8 %: Full Time
	21.2 %: Part Time
Self estimated technological experience	^a Mean: 5.41 Std: 1.077

^aLikert Scale from 1: Very Low Experience to 7: Extremely High Experience. *N* = 132

Table 2 Pearson correlation Sig. (2-tailed) *N* = 132

	Job satisfaction	Team effectiveness	Fair treatment
Job satisfaction		0.518**	0.458**
Team effectiveness	0.518**		0.627**
Fair treatment	0.458**	0.627**	

Cronbach's alpha: JS: **0.883** TE: **0.827** FT: **0.896**

KMO coefficients: JS: **0.744** TE: **0.827** FT:**0.839**

Total variance explained: JS: **68.323** TE: **66.651** FT: **62.205**

Total means of factor loadings: JS: **0.83(5 Items)** TE: **0.815(6 Items)** FT: **0.784(7 Items)**

Source Analysis of Survey data

**Correlation is Statistically Significant at the 99 % level 2-tailed (i.e., $p \leq 0.01$)

Discussion and Future Research

The results of this research provided the opportunity to interpret and evaluate the correlation of the three factors outlined above. Fair Treatment, Team Effectiveness, and Job Satisfaction had been the subject of examination for the purpose of drawing conclusions that may lead to the overall piece of Strategic Communication Process in subsequent studies.

More specifically, the positive correlation in which this research resulted in and which meet the three hypotheses that took place previously, come to strengthen previous theories that have been made. Some of them have to do with the correlations that Fair Treatment and Job Satisfaction have with the overall individual performance an employee has (Zimmerman and Todd 2009; Cobb and Frey 1996;

Konovsky and Cropanzano 1991). In addition, according to theories of Aryee et al. (2002) and Colquitt et al. (2001) several studies have demonstrated that Fair Treatment is relevant to Job Satisfaction and the overall commitment that the employee has with the organization and, consequently, the Team (H1, H2, H3). Furthermore, the high statistically significant correlation between Team Effectiveness and Fair Treatment 0.627 (p -value < 0.01) is remarkable. The existence of this correlation can strengthen a weakened team group which has low rates of fairness and consequently low levels of collaboration and team effectiveness.

The positive correlation of these three factors, that one affects the other, constitute the findings of this research activity which comes to complement and enhance this field of science. These findings can be used as a decision-making and consultative tool in order to evaluate the overall team satisfaction. This usage is aimed primarily to decision-makers who identify inflection points in the overall fairness of employees which are subsequently related to the efficient fall that can be caused in the entire team. Moreover as a Feedback for the implementation of a successful strategic communication process in nonprofit organizations.

The present study attempts to provide additional support to prior research works, reporting that job satisfaction is a key factor for the overall operation of the Organization for the purpose of building an integrated leadership strategy. This research approach tried to distribute a cross-cultural survey in nonprofit organizations from different countries such as France, Italy, Spain, India, USA, and others. However, a potential limitation of this study is related to the sample size (response rate 29.3 %). Larger population of quantitative results could provide more concrete information about factors' relations.

Furthermore, future research approach could take place on how employees evaluate themselves in relation to the self-evaluation of decision-makers, among these three factors. A comparison between both of these independent samples would provide a more profound idea of how to increase low levels of individuals overall satisfaction. A successful communication strategy relies, in a great extent, on the level of trustworthiness between individuals. This level of trust is associated with positive fairness and effective cooperation, axioms that can bring the anticipated job satisfaction to the overall group.

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Corporate Competitiveness Based on Sustainability and CSR Values: Case Studies of Spanish MNCs

Lopez Belen and Villagra Nuria

Abstract This paper analyses why and how multinational companies are integrating sustainability and CSR values in the corporate strategy. Second, the paper investigates how companies communicate sustainable and CSR activities and finally we explore the impacts of its communication. The analysis is based on case studies with data collected through nine in-depth interviews with senior managers of the most relevant Spanish MNCs. The results show that management and communication of CSR values contribute to the competitiveness of global companies considering the global demands of stakeholders in accordance with instrumental theories of CSR. The results tend to indicate that the communication of CSR has some risks but also some opportunities. When the communication strategy based on CSR values is effective, the relationship with the stakeholders become stronger and the reputation and perception of the firm increase with internal and external stakeholders.

Keywords Corporate sustainability · Corporate social responsibility · Corporate communication · CSR values

Introduction

Sustainability is a new paradigm to define the society in the beginning of twenty-first century and based on how companies contribute to a better future. When sustainable development is incorporated by the organization, it is called

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corporate sustainability and it contains three pillars that interact in the strategy: economic, ecological and social (Ebner and Baumgartner 2006).

In addition, global companies positioning based on sustainable values include CSR values into the corporate identity. Companies communicate these values to the stakeholders to explain how sustainable values are integrated in different activities (Villagra and Lopez 2013). Using different tools to communicate values, the consequence is that these companies increase their reputation, the credibility and commitment with stakeholders when corporations communicate these values in an effective way, i.e. including information about the responsibility of the company.

This article makes some contributions. First, it makes an analysis of the academic literature and the context in which multinational companies introduce CSR to be sustainable. Second, the article presents an analysis of the most sustainable Spanish MNC's to explain their global strategy, values and communication. Third, the analysis of this paper is a contribution in the academic area of CSR and communication to understand how companies understand the concept of sustainability, how the companies communicate these values and the effects of this communication on the stakeholders.

The paper is structured as follows. A review of the literature containing the main conceptual framework follows this section. The methodology and objectives section describes the objectives, the sample used and the research method followed for the analysis of data. Third, the authors present the analysis of results and finally the paper concludes with some conclusions.

Literature Review

There is a need for a debate on CSR and sustainability and how companies integrate them on their strategy. Corporate sustainability includes several activities through the Corporate Social Responsibility strategy that impacts in a positive manner on the society in the long term (Baumgartner and Ebner 2010). Then, there is a relationship between the activities of companies and society through sustainability and how companies are responsible with the stakeholders (Rudnicki 2000; Carroll & Buchholtz 2015). So, recent literature on CSR includes transparent business practices that are based on ethical values and respect for the employees, communities and the environment. It is designed to deliver sustainable value to society at large, as well as to the shareholders (Baumgartner and Ebner 2010). Now, companies need to measure the impact of its activities (EC 2011) and communicate results to the stakeholders. As a result, companies that incorporate sustainable values provide differentiation and competitiveness and better results in economic performance (Garriga and Melé 2004) and business opportunities (Grayson and Hodges 2004; Porter and Kramer 2006, 2011). In this sense, instrumental theories explain why companies include CSR in their business (Garriga and Melé 2004; Lopez and Fornes 2015). However, to understand the motivations of CSR there is a need to integrate a multilevel CSR perspective: institutional, organizational and

individual level (Aguinis and Glavas 2012) and then evaluate the impact considering the different stakeholders.

In addition, CSR is part of the corporate brand strategy contributing to the corporate brand competitiveness. As Balmer and Grey (2003) emphasize, corporate brand provides significant competitive advantages and differentiation (Harris and de Chernatony 2001; Hatch and Schultzt 2008). In fact, responsible brands (Kujala et al. 2011), sustainable brands or ethical brands refers to those brands positioned in an ethical differentiation.

Furthermore, to strengthen the corporate brand differentiation, companies communicate their values, and specifically ethical values (Palazzo and Basu 2007; Van de Ven 2008) as part of CSR strategy (Sen and Bhattacharya 2001; Morsing and Schultz 2006) and sustainable strategies of brands.

The company has evolved from reactive strategies to proactive strategies of communication (Arvidsson 2010; Schlegelmich and Pollach 2005). But benefits may vary depending on the communication process used (Bhattacharya 2010; Villagra and Lopez 2013). Communication strategies based on CSR values contribute to increase the differentiation of the firms. When companies define and create clear messages using a variety of channels to explain sustainable activities the result is that companies are perceived as responsible and ethical companies.

Methodology and Objectives

The research is based on case studies (Yin 1994). This methodology was chosen to get a better understanding of the strategy of multinational firms operating in several contexts and their fit with existing theories (Eisenhardt and Graebner 2007), which are the main objectives of this study. This methodology is also better suited to examining subjective features such as motivations, measures of performance, the impact on reputation, etc. (Creswell 2003). Companies of the sample are nine of the largest Spanish multinational companies included in the IBEX 35. These companies operate in the following industries: BBVA (bank), FCC, construction, Telefónica (telecommunications), Acciona (renewable energy, water and infrastructure, Iberdrola (energy), Red Eléctrica de España (energy), Repsol (oil and gas), Meliá Hotels (Tourism) and La Caixa (bank).

The main objectives of this research are: analyse if the objectives of MNCs to pursue CSR and sustainability initiatives are integrated in the core business. If yes, why and how companies define these values, i.e. the place in the organizational structure (departments, committees, etc.), the impact and effects of CSR strategy on stakeholders and the specific information about the sustainable strategies of these companies and competitors in Spain. Finally, how companies communicate values to create value and differentiation in a competitive global market.

The data were collected through in-depth interviews with senior managers and secondary data from the companies (website, documents provided by seniors, etc.) The interviews, based on the review of the literature, contained the following variables: CSR values in the company, how the company integrate and measure CSR activities, indicators of CSR including: dialogue with stakeholders, responsible innovation in products and services, social activities, Corporate Governance, etc. And finally, how the company communicates CSR values considering specific communication tools.

These elements in the methodology provide the validity to support the findings of this research.

Results and Conclusions

After analysing the content of the interviews and secondary data, the global results of this research are: Companies in the sample have integrated CSR and sustainability in their vision, mission, including ethical values in the core business; senior managers (communication directors) explain that brand, CSR and communication of values are integrated in the company strategy. Furthermore, these companies communicate the CSR results on the sustainability report including their CSR activities, measurement and impacts. These companies are becoming more sustainable in the recent years to obtain legitimacy, reduce risks and increase the competitiveness. The leading companies today are ethical companies.

On the other side, the communication of values contributes to the differentiation of the companies in the global context of sustainability. Companies develop a communication strategy based on values using different channels and platforms but corporations need to create differentiation through the communication messages. Finally, CSR and communication strategy should be integrated because the communication of values provokes scepticism in the stakeholders: corporations need to minimize this effect to obtain credibility.

The conclusion is that the communication should be focus on specific activities and its impacts to know how companies integrate CSR in their business. The messages should be associated with issues such as the company's commitment in different areas, the impacts and if it is congruent with the company values (Villagra and Lopez 2013; Sahinidis and Kavoura 2014). The role of stakeholders is to evaluate if companies are sustainable and/or they need to be more responsible to improve the society considering sustainable development.

Some criteria to design a communication strategy based on sustainable values are the following recommendations. Considering the CSR strategy of these multinational companies, they can include global, local and glocal values. Furthermore, the Communication Department can integrate the sustainable strategy and objectives of the company through the communication strategy with the aim of increased credibility and transparency. These messages should be based on the identity and the purpose of the company including sustainable results. Finally, the consequence

is to increase the competitiveness of the firm and strengthen the reputation creating an engagement with the stakeholders. In other words, these actions increase the positive impact of global companies towards society (Kavoura and Sahinidis 2015).

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Motivations for Participation and e-WOM Among Supporters of Crowdfunding Campaigns

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Abstract In the crowdfunding model, a campaign succeeds by collecting the funds required over a predefined duration. This study examines the motivations that encourage supporter participation. The results of an empirical study validate the effect of economic, philanthropic, networking, and social utility motivations on the campaign's success. However, economic sensitivity and gender are important moderators of participation. The results also show that the feeling of social utility encourages electronic word of mouth (e-WOM) and helps develop the social capital of the project creators.

Keywords Crowdfunding · Motivations · Online communities · Electronic word of mouth

Introduction

The practice of collecting project funding from private individuals is significantly on the rise (+63 % between 2009 and 2012, according to the World Bank), and crowdfunding looks set to occupy a significant place as a source of finance for both individuals and associations. The principle of crowdfunding (CF) is that the project creator appeals to individuals for financial support (Belleflamme et al. 2014). The project creator posts details of the appeal on a CF platform such as Kickstarter, IndieGoGo or Ulule, stating the minimum amount of funding required and the duration of the fundraising campaign, as well as the scale of compensation, or rewards, for the amount given. At the end of the campaign duration, if the minimum amount requested has been reached, the project creator has his funding and the individual contributors receive their rewards.

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Studies show that the project is supported successively by three types of population (Ordanini et al. 2011): the project creator's direct network (friends and acquaintances), the supporters from the "crowd" who have no direct connections with the project creator, and the opportunists, who only select campaigns with a high likelihood of succeeding. The success of a CF campaign depends both on the capacity to attract members of the online communities concerned, and on the community members' involvement in online word-of-mouth recommendations (Kraut et al. 2011, p. 77). Understanding the motivation driving these supporters is a major issue, and may lead to adjustments being made to the project, its communication or the rewards offered to users of the online platforms. Current theories on CF do not explain the determinants of participation. The research object here is thus to measure supporters' motivations, and connect them to key behaviours that have a direct impact (intent to participate) or indirect impact (intent to issue e-WOM) on the campaign's success.

The rest of this paper is structured as follows: in the first section we present the conceptual framework. The second section presents the data from the study and the methodologies used. Robustness tests are then applied to our models and the results are discussed in detail, while the final section discusses theoretical and managerial implications, limitations and avenues for further research.

Conceptual Framework

The literature positions CF as a branch of crowdsourcing. The principle of crowdsourcing is to outsource an activity to a large number of individuals (Bloodgood 2013). The CF model studied is the reward-based model (this model involves some reward). This is the most common model (Onnée and Renault 2014).

Although a link has been established in the literature between motivation and membership of an online community (Kraut et al. 2011), few studies examine the motivations of CF supporters. Studies focus mainly on social phenomena. The imitation effect created by the earliest subscribers determines the participation of the next subscribers (Mollick 2014). These studies explain how successive populations join the project, but they do not bring out individual contributors' motivations. Although there is no integrating theoretical framework, the motivations-based approach studies what causes and drives behaviour towards a certain goal.

In a qualitative study of funders, Gerber et al. identify four motivations: an economic motivation, a networking motivation, a philanthropic motivation and a social utility motivation (2013). The quantitative study presented here is thus based on the results of this qualitative exploration, to assess the effect of individual subscribers' motivations on the intent to participate in the campaign and the intent to issue e-WOM. The philanthropic motivations are found in altruistic individuals who feel happy when they respond to charitable initiatives (Strahilevitz and Myers 1998). A large number of CF appeals concern charitable or solidarity projects. The desire to help others can thus explain contributor involvement in CF. This leads to

the hypothesis that “The philanthropic motivation positively influences intent to participate” (H1). Reward-based CF platforms offer an economic benefit in return for the supporter’s contribution, on a reward scale defined by the project creator. Based on the amount of funding provided, the contributor may receive a special offer. This is the basis for the next hypothesis: “The economic motivation positively influences intent to participate” (H2).

There is a strong relationship between the project creators and contributors, or peer-to-peer relationships between contributors. A networking benefit can thus be the driver behind participation: “The networking motivation positively influences intent to participate” (H3). The theory of financial giving postulates that donors are driven by a desire to reinforce their social identity, reduce feelings of guilt or feel useful through their action (Grau and Folse 2007). Contributors want to feel useful: “The social utility motivation positively influences intent to participate” (H4).

CF platform users form online communities that interact with each other and help to spread news of the projects. Internet users relay information about projects through electronic word of mouth (e-WOM), which is defined as “a critical tool for facilitating information diffusion throughout online communities” (Goyette et al. 2010). Research into e-WOM shows that intrinsic motivations are more important predictors of e-WOM than extrinsic motivations. The philanthropic and social utility motivations should be the key factors in the intent to issue e-WOM. The intent to issue e-WOM is positively influenced by the philanthropic motivation (H5) and the social utility motivation (H6).

Various factors can moderate the connections between motivations and intent to participate in a CF project. By definition, the philanthropic motivation cannot therefore be combined with an economic motivation (Zheng et al. 2014). The economic factor moderates the association between the philanthropic motivation and the intent to participate on the following hypothesis: “When the economic motivation is high, the link between the philanthropic motivation and the intent to participate is lower” (H7a). The literature on donations stresses the existence of gender-based differences in behaviour: “Women have a higher philanthropic motivation than men regarding the intent to participate” (H7b).

Empirical Study

Data were collected through an online survey from a convenience sample consisting of French Internet users, regardless of whether they have already contributed to a CF project. The sample size is $n = 108$ (41 % men). The measures concern the intent to participate, the intent to issue e-WOM, motivations for participation and socio-demographic variables. The intent to participate in a CF project is measured by a qualitative variable (modalities: Probably/Probably not). The projects proposed correspond to various categories, from for-profit activities (launching a new product) to cultural projects (music, events, etc.) via social and personal activities (humanitarian aid). To avoid overrepresentation of certain motivations relating

specifically to one category, the project remains general in nature. The intent to issue e-WOM is measured using the scale developed by Goyette et al. (2010). Items are presented on a 7-point Likert scale (sample item is: “I would recommend this project to other people”). Confirmatory factor analysis indicates satisfactory reliability and validity (Joreskog’s $Rho \geq 0.88$). A measurement scale for motivations to participate was developed based on the recommendations of the literature. Motivations are measured using 7-point Likert scales. The economic motivation designates the reasons that drive individuals to contribute in return for a monetary reward (“I feel that I’m paying a lower price for the product”); the philanthropic motivation relates to generosity and mutual assistance (“I feel that I’ve made a donation”); the networking motivation concerns reasons to belong to an online community (“I want to chat with the other members”); and finally, the social utility motivation measures the feeling of pride a person may derive from participation (“I feel I’ve made a small contribution to something bigger”).

Exploratory and confirmatory factor analyses confirm respect of the standard thresholds for the criteria of reliability, convergent validity, discriminant validity and invariance. The goodness of fit for the data collected is assessed by simultaneously examining several absolute indexes (RMSEA < 0.08 , GFI ≥ 0.90) and incremental indexes (NFI, NNFI; CFI ≥ 0.90) (Hu and Bentler 1995). The overall model is a satisfactory fit for the data collected ($\chi^2 = 153.977$; $\chi^2/dl = 1.273$; NNFI = 0.97; NFI = 0.90; CFI = 0.98; GFI = 0.87; RMSEA = 0.05). Although the GFI is lower than recommended in the literature, it is acceptable given the size of the sample (Cheung and Rensvold 2002). The intent to participate in the project is 58.3 % and the intent to issue e-WOM is 58.1 %.

Results

The influence of motivations on the dependent variables is estimated in a maximum likelihood logistic regression model for the intent to participate (model 1 in Table 1) and in a regression for the intent to issue e-WOM (model 2). The independent variables are the four motivations, with possible interaction effects, and one control variable (gender) in interaction with the philanthropic motivation.

Overall goodness of fit is satisfactory for model 1 (Nagelkerke $R^2 = 0.43$). In line with the hypotheses, the economic motivation (H1 validated), networking motivation (H3 validated) and social utility motivation (H4 validated) positively influence participation by supporters. Philanthropic motivation is significant but only by its interaction with gender (H2 and H7b validated). The probability of intent to participate is twice as high for women (2.01) as for men as already observed in the literature (Lee and Chang 2007). Johnson and Neyman (J-N) technique is used to study moderating effect. The interaction effect (philanthropic with economic motivation) is significant (H7a validated), with a negative effect (−0.35). The moderation effect is observable on individuals with an economic motivation score above 4.05 (for the risk $\alpha = 5\%$).

Table 1 Effects of motivations on intent to participate in a CF project (logistic regression)

Hypotheses		Coefficient	S.E.	Wald	Exp(B)	Result
H1	Economic	1.82	0.88	4.3*	6.19	Validated
H2	Philanthropic	0.65	0.50	1.70	1.92	Rejected
H3	Networking	0.98	0.24	17.30***	2.66	Validated
H4	Social utility	1.51	0.42	12.90***	4.53	Validated
H7a	Philanth. X Economic	-0.35	0.16	4.50*	0.70	Validated
H7b	Philanth. X Gender [Female (1)]	0.70	0.30	5.40*	2.01	Validated
	Constant	-7.02	3.20	4.80*	0.001	

Note *** p-value < 0.001; ** p-value < 0.01; * p-value < 0.05

For model 2, the goodness of fit is acceptable (adj. $R^2 = 0.37$). While the social utility motivation positively affects e-WOM (H6 validated: $\beta = 0.53$; $p < 0.01$), the philanthropic motivation has no effect (H5 rejected).

Discussion

Contrary to past studies that treat “the crowd” as a homogeneous whole, this study shows that individual factors also explained participation in a CF project. Several contributions to the research can be identified. First, this study extends existing research on the approach to social phenomena. CF participation is influenced by self-reinforcement mechanisms such as the number of early supporters or the platform’s internal social capital (Colombo et al. 2015) and individual motivations (Gerber and Hui 2013). The results support the existence of these main motivations and show their influences on the success of a CF campaign. According to CF supporters, reference to the economic, philanthropic, networking and social utility motivation in a CF campaign may increase participation. People support a campaign to receive a monetary reward. The amounts requested and the associated rewards can be used to stimulate participation. Supporters are driven by the social utility and the networking motivation in the online community.

Assessment of these four motivations has significant implications, because it highlights different reasons for supporter participation and could lead to an adjustment of the project or an adaptation of the communication of social responsibility of the organization (Sahinidis and Kavoura 2014). In line with past studies, our results also show that CF is different from donating (Kuppuswamy and Bayus 2014). Projects with a solely philanthropic aim are well advised to prefer a donation-type CF model. Second, e-WOM is a determinant of CF success. E-WOM helps to spread news of the project from one population to another, in a phenomenon that is well known but relatively underexplained (Ordanini et al. 2011). The recommendations issued by supporters have a persuasive effect on individuals

with both low and high motivation to process information (Gupta and Harris 2010). E-WOM recommendations influence the attitude and behaviour of possible contributors by reinforcing the feeling of trust (Gauri et al. 2008). The study shows that e-WOM is encouraged by contributors' social utility motivation. In the light of the positive effects generated, it would be in the project creator's interest to use the social utility motivation to encourage contributors to issue e-WOM.

At the managerial level, the conclusions of this research have two implications. For project creators, improving the effectiveness of CF campaigns requires consideration of these differences in the intent to participate. The heterogeneity of supporters means more funding will be forthcoming if the project is able to specifically address these motivations. For CF platforms, they can use our conclusions to increase their campaigns' success rate and cut the time necessary to collect funds. There are several limitations to this study, suggesting areas for further research. First, the sample is not representative of the population of CF supporters. It is difficult to determine the exact characteristics of this population. Second, the replication of the scale would make it possible to ensure stability in the structure. Finally, differences may exist, depending on the project category. Future research could thus be conducted for a specific project.

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Changes in the Legal System of the Non-governmental Organizations in the Czech Republic and the Possibilities for Innovation of Communication Policy in the Non-profit Sector

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Abstract The oversaturation of the consumer market and the increasing customers' resistance toward growing attack of diverse marketing tools forms is a typical attribute of today. It is not only the commercial sphere which is affected by the condition, but there is a still more significant need to "fight" for customers, however, also for the non-commercial entities, and thus earn their position in the market. In continuity with this fact, the increasing need to be able to efficiently address the existing as well as potential customers becomes more prominent. And it is here where innovative marketing plays a significant role in the form of identifying new ways and introducing new methods in promotion and medialization of products and services, i.e. in the communication policy. The study points to the current changes in the legal system of non-governmental organizations in the Czech Republic and outlines a possible path based on collaboration between the academic sphere and non-governmental organizations.

Keywords Non-governmental non-profit organizations · Promotion and marketing · Innovation · Communication policy

Introduction

Innovation, a concept that is becoming more and more used in almost every area of our lives. Despite having encountered this concept before especially in the economic sphere, now we may state with certainty that it represents an integral part of human living as well as human development. Innovations thus became an inseparable part of the society built on the development of entrepreneurship, creativity, and imagination with the will to risk (Rýdl 2003). The economic contribution to

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innovation itself, however, significantly differs and depends mainly on their successful implementation. It is no coincidence that the implementation of innovations into business is put to the forefront more often in continuity with marketing, thus representing a major rival in the competitive battlefield, in both the profit sector as well as more prominently in the non-profit sector. Current economic situation predetermines a change in employing individual communication tools (Juříková 2014, p. 73).

Theoretical Background

Non-governmental non-profit organizations (NGOs) represent those organizations that are not established by the state, nor are they state-dependent. They are set up to facilitate community activities (for the public) or to provide non-profit activities for their private benefits—recreational and hobby activities (Rektořík 2001). “They are a natural part of the community based on freedom and solidarity of citizens. On the civil society. ... Their right to organize is the basic human right and in the democratic society it is never questioned. ... They are organizations that fill the space between the market, state and family” (Čepelka 2003, p. 15). Formally, by January 1st 2014, the NGOs had represented civic associations’ foundations and endowment funds, community interest societies, and church equipment.

However, on January 1st 2014 a large recodification of the private law came into force, which also includes the New Civil Code. The changes associated with this recodification directly affect also NGOs themselves. Among the most significant ones there are:

- a. ***Transformation of civic associations into associations***—the emergence of a new legal form—*registered association (r.a.)* with the emphasis on social activities and membership nature of clubs with a fixed period of 3 years for the coordination of the basic documents as well as ways of functioning with the new legislation, or for the transformation into new forms, e.g.—*institutes* or *social cooperatives*.
- b. ***More recent adaptation of foundations and endowment funds***—these currently represent a subset of so-called *foundation*, i.e. association of property used for specifically defined purpose, the benefit is mainly in the implementation of broader activities.
- c. ***The emergence of a new legal form: institute***—the title of a legal entity established for the purposes of operating a certain socially beneficial activity operating more on the employment principle and suitable especially for the provision of various types of community service.
- d. ***Changes in community interest societies***—the existing legislation was replaced with a new amendment of institutes that does not directly impose the transformation of existing OPS societies (into an institute as well as social cooperative), however, at the same time does not allow establishing of new ones.

- e. **The emergence of a new legal form: social cooperatives**—cooperatives operate on non-profit principles (there are e.g. no deposit appreciation), and their priority is to serve especially to social and occupational integration of disadvantaged persons (Commercial Corporation Act).
- f. **Changes in registered legal entities (church non-profit organizations) are not executed**—registered legal entities remain the subject to Act no. 3/2002 Sb. on churches and religious societies (O neziskovém sektoru 2014).

Currently, the following are registered under NGOs: associations (2014/86.956, 2015/87.698), branch associations (2014/26.118, 2015/26.225), community interest societies (2014/2.926, 2015/2.912), institutes (2014/123, 2015/206), funds and endowment funds (2014/508, 2015/495), religious organizations (2014/4.158, 2015/4.156) (Statistika počtu NNO 2014–2015 2015).

Problem Formulation

Although in recent years NGO activities in the area of so needed communication have become more professional, we can still encounter an inefficient form of the communication policy implementation which now more than ever (in continuity with the introduced changes in legislative) brings up the question of the necessity to engage marketing specialists into NGOs activities. That would broaden the options for communication policy innovations in the area of the non-profit sector. But it enhanced also their much afflicted transparency and credibility. It is not only the implementation of the mission, but especially the ability to communicate effectively, which opens the door for NGO professionals and the public. It is not only the acquisition of members and finances, the lack of which is perceived by NGOs as the biggest problem, but it is (and should be) about gaining volunteers and supporters, improving of provided services and above all about spreading awareness of the activities of the organization.

Problem Solution

The lack of marketing specialists was also proved by the survey carried out in 2012 within the project called *Cooperation of Higher Education, Public Administration, Business And Nonprofit Sector for the Socio-economical Development of the Region* in which beside the representatives of the academics (Tomas Bata University—TBU) and the non-profit sector (the Association of the non-governmental non-profit organizations—ANNO) also representatives of other entities participated, i.e. the representatives of the Zlín Region (ZR), the town of Zlín, the Chamber of Commerce and the Labour Office. The results supported thus established innovative way in forming the curriculum of the Faculty of Multimedia

Communications at TBU (FMC TBU) corresponding to the so-called curricular reform whose aim is to reform the existing educational system.

The priority concerning the development of the key competences (knowledge, skills, attitudes and values with the awareness of responsibility for one's own actions) thus led to the restriction of purposeless memorizing and forced the innovation of educational methods stemming from the requirements of the practice, which left the space for greater individualization of teaching as well as for greater potential to motivate—should we mention e.g. internships in enterprises (public institutions), direct participation of experts from the practice in various real projects while comprehensively mastering the knowledge of project management methods (Strategie vzdělávací politiky ČR do roku 2020 2014). Especially the last mentioned form represents the real space for implementing innovations not only from the educational process perspective, but also from the perspective of the non-profit sector.

The primary objective of the study was to analyze the NGOs ZR in terms of needs, and tools for communication. The results of the survey were used not only for more effective coordination of relations between the project partners, to strengthen the region's development, but they also revealed that the needs of NGOs ZR in marketing and promotion, as well as forms and communication tools that are most commonly applied, whether towards educational institutions or commercial entities, together outlined the possibilities for innovation in cooperation with the academia. In 2015 another investigation was aimed at establishing the current status of NGOs in response to the legislative changes applicable from January 1st 2014. Also this time it the database of NGOs was used in the number of 987 functional contacts as well as an electronic questionnaire in combination with email addressing letter or telephone conversations. Although in 2012 436 questionnaires were completed by 404 respondents (80 % of civic associations, 8 % of religious organizations, 5 % community interest societies, 1 % of foundations and endowment funds and 6 % of not specified) for their particular operation. In 2015, however, only 175 NGOs ZR (78 % of associations/out of which 1 % r.a., 9 % of religious organizations, 10 % community interest societies, 1 % of foundations and endowment funds and 2 % of not specified), institutes have not been yet specified.

In view of the problem being solved, the most fundamental part of the survey particularly the area of (marketing and) promotion may be regarded reflecting in the possibility to cooperate with the university. Even though the base was lowered by more than a half, the resulting values pointed to the current unsatisfactory condition. A special marketing and promotion section was confirmed even by one and only organization (less than a %; 2012/2 %) NGOs!!! Although 20 % (2012/18 %) NGOs already reported that they cope with the promotion of the organization on a professional level, for 54 % (2012/49 %) NGOs marketing and promotion is dealt with by the person who has time for it. If we add 15 more (2012/32) NGOs who do not deal with promotion at all, it makes 63 % (2012/56 %) organizations who do not benefit from the work of a marketing specialist. Other NGOs reported another way or they did not report any reply. The results of both the surveys proved that the cause of the unsatisfactory condition the NGOs see in the lack of finances in the first place,

then it is the absence of the need (they have “skilled people of their own”) to consult marketing specialists, and the third place is taken by the lack of human resources.

Another positive finding is that in cooperation with the University in 2015, 61 % (2012/47 %) NGOs were interested compared to 39 % (2012/38 %) NGOs who do not favor the cooperation, while in 2012 14 % more NGOs did not respond to the problem at all. The most commonly cited reasons for the lack of interesting cooperation included, as well as the use of marketing professionals, in particular the statement that: “we have no reason, need,” “we are a small organization,” “we have our own people to do promotion.” As a positive fact we can consider that an absolute majority of NGOs considers cooperation with the University as relevant.

Finding beneficial for the university is, what form of coordination NGOs are interested, what form they prefer. At the same time also in what extent the requirements of organizations meet the current offer (possibilities) of the university. What is positive is that in 2015 the percentage of NGOs interested in assistance with promotion while preparing and implementing projects submitted by organizations increased to 62 % (2012/58 %) NGOs, which may correspond to the increasing number of students in continuity with implementations of growing number of projects directing to the area of the non-profit sector within educational programs at the FMC TBU. On the contrary, a more significant decrease was recorded in the area of submitting necessary analyses through bachelor’s and diploma theses with 11 % (2012/23 %) NGOs, which may be the response to the decision to publicize students’ theses including sensitive data of the submitting organizations, as well as to the legislative changes. For other options, suggestions e.g. for internships, new impulses, assistance in addressing target groups, seasonal help, surveys, graphic manuals, posters drafts, promotional contests, recruiting volunteers, fundraisers, etc., which also corresponds to the current curricula of the university (Göttlichová 2012, 2015).

As showed by the survey, one of the preferred requirements of the NGOs ZR is the help of students with promotion in preparing and conducting projects stemming on one hand from the needs and requirements of the organizations themselves, and on the other hand from the creative approach of the students in effort to help with their own projects where these are needed. A seminar called Projects of Non-profit Organizations, which, despite having been realized at the FMC TBU for 13 years now, has flexibly responded to the current NGOs ZR requirements and at the same time it fulfills one of the main priorities of the Europe 2000 strategies, i.e. “intelligent growth”, which stands for strengthening knowledge and innovations as stimuli of the growth in continuity with the necessary requirements to enhance the quality of education. The aim of the strategy is the implementation of the actual cooperation among the participants of “knowledge triangle” represented by universities, research institutions and innovative industries, whereas not only commercial entities but also non-commercial bodies have their place in this triangle (Evropa 2020 2010).

The course offers students an option to fully meet the nature of the curriculum based on the application of the key skills within the educational process, at the same time responding to the requirements of the practice and reflecting into the innovation of education with restriction of purposeless memorizing. We thus speak about a

course purely practice-oriented which allows the students to encounter with working activities of the regional NGOs, their structure and communication strategies in practice and not only through theory. We enable students to apply gained theoretical knowledge in real environment of an NGOs, to present and conduct their own projects with the aim to support the non-profit sector (Göttlichová 2014).

Conclusion

As well as innovations represent an inseparable part of human living, today it becomes unthinkable to develop civil society without activities of NGOs. It has become evident that NGOs themselves regard the fact that they ought to pay their attention to searching new ways and methods to enhance their competitiveness in the market as an absolute necessity. The non-profit sector development and the impact of the legislative changes affecting NGOs significantly force the NGOs not to be afraid to prove new methods of providing services and to develop other contingencies of their activities (including the communication policy). Responsibility of placing one's organization in the market to ensure its constant success becomes an increasingly important aspect also in this area.

Results of the survey, however, reaffirmed that in the Czech environment we do not usually meet with NGOs with the existence of the marketing department (or at least with marketing specialists) and vice versa, we see that so far more than half of the organizations' marketing and communications are "solved by the one who has time for it." The majority of NGOs sees the main problem in the lack of financial and human resources. A positive aspect, however, is a growing interest on the part of NGOs in cooperation with the academia, as well as the preference of the forms of cooperation. Marketing communication of non-profit organizations can be effectively controlled by using more innovative methods, which are based on creative project management (Šviráková and Soukalová 2015). And as shown by the current situation, it is the cooperation in the field of higher education in the Zlín Region which brings NGOs ZK the significant potential in volunteering, employment of graduates, interns assisting with various activities or with promotion in preparing and implementing organizations' projects for which the NGOs does not have sufficient funds and manpower.

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Environmental Reporting as a Part of a Marketing Communication

Marie PavlÁková Dočekalová and Jana Hornungová

Abstract The paper aims to examine the role of environmental reporting as the part of marketing communication of a company. This corporate activity can play the important role towards company's various stakeholders, especially to customers and suppliers. They can evaluate the impact of such marketing information on a company's corporate reputation and brand image. The research is focused on small and medium-sized enterprises operating in the manufacturing industry. Data applied in the paper has been tested through chi-square test. Research presented in this paper has proved that environmental reporting positively influences concluding of new contracts. Environmental communication and labelling is an important source of information for environmentally conscious consumers and it has the potential to influence their decision-making.

Keywords Reporting · Marketing communication · SMEs · Chi-square test

Introduction

At the present time each company management must focus on all aspects of its activities, which subsequently conveys complex view on the company. Further to this fact companies systematically develop their environmental policies, evaluate their internal processes influencing environment, identify their objectives, monitor progress and undergo managerial audit (Arimura et al. 2011). Integration of quality and environmental management systems have created new opportunities, such as reduced consumption of resources, improved relations with stakeholders, including local communities, authorities, etc. (Kocmanová et al. 2010). Introduction of cleaner technologies, optimization of technologies reducing quantities of inputs necessary for transformation process as well as quantity of generated wastes, environmental management systems (EMS) such as ČSN EN ISO 14 001, EMAS

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and other voluntary tools lead to improved image of companies. Such proactive approach is valuable especially in the fields with no regulatory measures imposed by the state intervention (Montiel and Husted 2009). Information about environmental profile of products and services should be integrated into the marketing communication in order to make environmental activities of companies' visible attributes of products and services. Only then the environmental efficiency can be utilized to gain competitive advantage. Miles and Covin (2000) suggest that good environmental steward helps create a reputational advantage that leads to enhanced marketing and financial performance.

Environmental Information Tools

The primary function of environmental communication is the informational function with the aim to differentiate product and gain competitive advantage. A company uses informational tools either to collect or provide information about its influences on the environment (Remtová 2005). Furthermore, environmental communication is established based on moral, ethical and preventive reasons. In principle, environmental communication is a process, which—as refers Hřebíček (2004)—takes into account the Deming's cycle. The process includes following steps: analysis, planning, implementation, realization, evaluation and improvement. Environmental communication can follow the standard ISO 14063, derived from the series ISO 14001. This standard offers principles, policy, strategy, methods and practical examples of external and internal environmental communication. The standard is applicable to all organizations irrespective of their size, type, location, structure and products or services.

An environmental reporting, publishing the file of information about influence of a particular company on its environment, can be primarily ranked among the tools of communication oriented to stakeholders. Moreover, environmental symbols and declarations can be included (according to the standards ISO 14021, ISO 14024, ISO 14025) that is, environmental reporting can be considered as the marketing tool (Cerin 2002; Sakas and Giannakopoulos 2010).

Moreover, environmental communication in the form of environmental reporting is also an effective tool for reduction of impacts of companies on their environment as the communication facilitates continuous improvement to be constantly monitored by stakeholders. Thus, environmental communication can indirectly influence product, production processes, management and strategy. Environmental reporting has developed into the so-called sustainable reporting over the course of the time (corporate sustainability reporting), integrating environmental, social and economic information in a single report.

In spite of the fact that particularly large companies use environmental and sustainable reporting because of its high level of demand, the statistics Global Reporting Initiative demonstrates increasing share of reports published by SMEs, see Fig. 1.

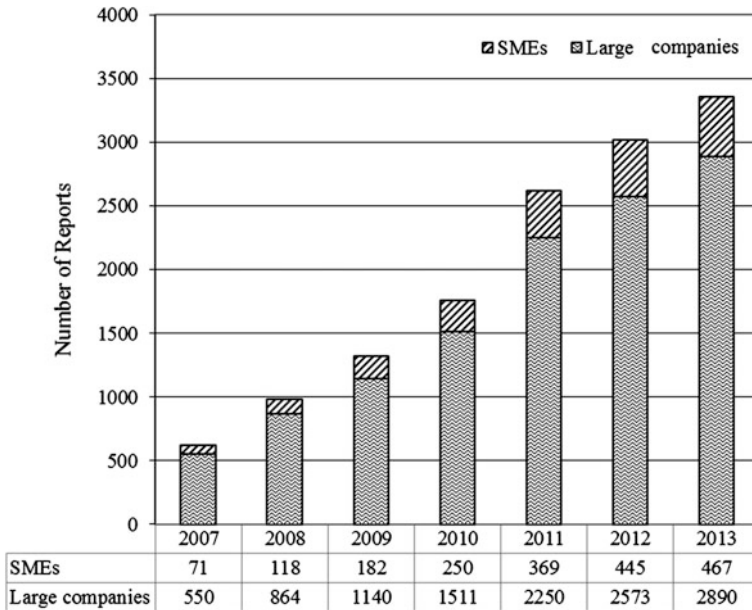


Fig. 1 Share of small and medium-sized companies in total number of reports (own elaboration on the basis of the statistics “Global Reporting Initiative”)

Materials and Methods

The paper focuses on the environmental communication of small and medium-sized companies. The sector of small and medium-size business (SME) is the key sector of the Czech economy and important factor of social stability and economic development of regions. The share of small and medium-sized companies in the total number of active business subjects amounted to 99.83 % in the year 2013. The total number of employees working in the SMEs amounted to 1,782,000 in the year 2013, i.e., constituting 60 % of the total number of employees working in the business sector of the Czech Republic. The share of added value of the SMEs in the total value of the Czech Republic formed 54.8 % (Ministry of Industry and Trade of the Czech Republic 2014).

The relationship between environmental communication and its impact on consumers and their purchasing decision-making has been tested on the real corporate data of the Czech manufacturing companies (C according to CZ-NACE). The reason for selecting this industry has been the fact that manufacturing companies exert a significant impact on the environment and society. For the paper data from 71 companies have been gathered.

All calculations have been analyzed by the statistical program IBM SPSS Statistics 20, using the combination of different statistical methods.

Statistical nonparametric method chi-square test has been used for the analysis of the data. This test is used to determine whether a demonstrable relationship exists between two characters. The basic principle of the chi-square test consists of the comparison of the observed and expected frequencies. In calculating the expected frequency is based on the premise that the null hypothesis applies. In the test of independence, the null hypothesis assumes that no dependence exists between two qualitative variables.

If we denote the relative frequency such $\pi_{ij,0}$ (their point estimates are frequencies p_{ij}), then the null hypothesis we write in the form:

$$H_0 : \pi_{ij} = \pi_{ij,0},$$

where, $\pi_{ij,0}$ the relative frequency expected in the case of independence, computed according to equation:

$$\pi_{ij,0} = p_i + p_{+j}$$

The null hypothesis is tested to hypothesis H_1 : H_0 does not apply (Řezanková 2010).

Results and Discussion

Heightened interest in the environmental issues over the past couple of years has led to labelling in effort to allow consumers to differentiate between more or less sustainable options. Such actions assume that if consumers are presented with appropriate label information, their purchases will change and more sustainable purchasing will result (Horne 2009). Notwithstanding this welcome development, it is argued if through product price premium is a consumer willing to pay more for green and socially conscious products (Grote et al. 2007). With the growing knowledge and trend of “going green” companies are trying to get into the niche market of environmentally friendly production and increase their competitive positions within the “green” marketplace segment (Barnard and Mitra 2010). However, as the Eurobarometer survey shows, European small and medium-sized companies (SMEs) mostly have not adopted a “green” strategy, as only 26 % of SMEs, seated in the EU, offer ecological products or services, 7 % of SMEs plan to do so in next two years. Nonetheless, most of SMEs (59 %) do not provide any green products or services, and do not plan to do so (European Commission 2013).

We have tested a statistical hypothesis to find out whether environmental communication, resp. environmental marketing, influences and supports decision-making of customers:

Publication of environmental reporting has resulted in awarding of contracts, not previously achievable.

Table 1 Calculation of χ^2 test of independence

	Test criterion	α'
Chi-square	11.244	0.004
Likelihood ratio	14.444	0.001

The null hypothesis H_0 that the random variables are independent versus the alternative hypothesis H_1 has been tested to verify statistical correlation.

H_0 : No correlation exists between environmental reporting, published by companies, and awarding of new contracts.

H_1 : Correlation exists between environmental reporting, published by companies, and awarding of new contracts.

In this case, the dependence is upon two nominal variables (contingency). The basis for the detection of this dependence is the chi-square test of independence, the result of which is shown in Table 1.

The resulting value of the minimum level of significance has been tested at 5 % significance level ($\alpha = 0.05$). If the resulting value is less than or equal to $\alpha = 0.05$, H_0 is rejected. Based on the calculation, it has been found that the value of the Pearson chi-square statistics has been 0.004. This result is less than the chosen significance level ($0.004 < 0.05$). In this case, therefore, H_0 is rejected at the 5 % significance level, while H_1 is not rejected.

Statistical hypothesis has been confirmed.

Conclusions

The chapter has been involved in the environmental reporting of companies as one of the forms of marketing communication. The results of empirical research have indicated that companies have been awarded new projects, previously unreachable, on the basis of their publication of environmental reporting. In this case the marketing communication is associated with positive effect. These research conclusions comply with the statements of the authors Kirchhoff (2000), Feddersen and Gilligan (2001), Fisman et al. (2008), who mention that companies gain economic benefits through the use of brands and advertising, informing about sustainability of products, thus supporting product differentiation and competitive profiling. Other advantages, offered by marketing communication, include: cost reduction in the area of communication, strengthening of close relation between company and its employees and improvement in their motivation (Přikrylová and Jahodová 2010). At the moment it is important to persuade both external and internal stakeholders of a particular company, namely in the area of strengthening of credibility, reliability and its reputation. Therefore, it is advisable to support all activities contributing to the fulfilment of these areas. Despite its contributions, our study has two limitations: the study was conducted in the Czech Republic and the sample size. Future studies should increase the sample size to obtain stronger results and the research should cover also other regions.

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Corporate Social Responsibility and Financial Performance Within the Business Sector in Greece

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Abstract The present study investigated the association between corporate social responsibility (CSR) and financial performance. The study sample was composed of 124 listed companies in the Athens Stock Exchange during the period 2006–2012. Firm financial performance was measured by return on assets (ROA), return on equity (ROE), return on sales (ROS) and earnings per share (EPS). Information was extracted from the balance sheets of the companies. We used repeated measurement analysis to analyze the data. A linear mixed model was run to determine whether the CSR had an effect on financial performance and whether this effect was dependent on the *Wider Section* that companies were classified. The analysis showed that there is significant evidence for concluding association between CSR and financial performance.

Keywords Corporate social responsibility · Athens stock exchange · Financial performance

Introduction

A great number of studies have been conducted around the world, their main focus is to examine the relationship between corporate social responsibility (CSR) and financial performance of the enterprises that have adopted CSR. Their research question is whether a positive or negative correlation exists between CSR and financial performance.

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The research of Ji-ming et al. (2009) of 32 listed companies in the Shanghai Stock Exchange, showed that CSR depends on performance (using ROE ratio to assess the performance) and that there is a positive correlation between CSR and financial performance. On the other hand, Balabanis et al. (1998) took a sample of 56 top listed companies in the UK Stock Exchange and evaluated their measures of CSR performance and disclosure as well as their financial performance using ratios: return on capital employed (ROCE), return on equity (ROE), gross profit ratio, excess market valuation (EMV), whereas beta was used as a measure of companies' systematic risk. Although they proved that a relationship exists between the two and between performance and CSR practices disclosure, statistical tests failed to establish that there is a strong correlation revealing that it does not apply equally to all corporations that adopt CSR practices.

The research of López et al. (2007) took place from 1998 until 2004. They sought to find whether there are significant differences in performance indicators among equal size European firms with the first group listed in the Dow Jones Sustainability Index and the second group listed in the Dow Jones Global Index. The ratios selected to measure performance were return on equity (ROE), revenues (REV), return on assets (ROA). Their findings did not establish that there is a positive correlation between financial performance of corporations and CSR. Along these lines, Yi-Ling (2011) studied the separate relationship that each corporate social responsibility ratio has against business performance using a sample of 156 companies listed in the Shanghai Stock Exchange. More specifically, she used the ROA ratio to measure performance. Research showed that corporate social responsibility associated with human resources and the government (CSR for government) had a significant positive correlation with corporate performance. In addition, corporate accountability to the investors and the community has a positive correlation, yet the correlation coefficient is not significant. Finally, this research revealed that the more profits a company makes, the smaller is the proportion of its profits allocated to the environment.

Equally important yet distinct from previous researches Blomgren (2011) research attempts to prove that CSR is linked to corporate profit margin by conducting a series of interviews with senior executives of the 15 of the largest textile companies in Norway. The findings of his research conclude that CSR does not help in achieving profits above industry average; it rather helps them achieve average profit margins. Samy et al. (2010) also conducted a research which set out to prove the hypothesis that CSR maximises profits. In their study applied to 20 UK companies, they set as prerequisites for the selected companies to meet all or some CSR criteria. In order to draw reliable conclusions, they examined the trends of earnings per share (EPS) of the selected companies during the period 2002–2006. Their findings revealed that the hypothesis was confirmed, namely, that CSR has a very weak but positive relationship with EPS.

Artiach et al. (2010) research set out to correlate financial factors (yields) with High Corporate Sustainability Performance (CSP). Their study compared companies listed on the Dow Jones Sustainability Index (DJSI) against companies listed on the S&P 500 Index but not listed in the DJSI. The research proved that CSP

companies are more profitable than other companies because there was a strong positive correlation with ROA, whereas the correlation with ROE was weak. Shen and Chang (2009), also examined the effect of CSR on the financial performance of companies that have adopted it. The results demonstrated that there is indeed a correlation between CSR and financial performance largely because firms engaging in CSR practices tend to outperform in ROE and EPS compared to the Non-CSR firms. On the basis of t-test, there are, however, differences in the return on equity (ROA), in pre-tax income to net sales and in gross profit to net sales. Nevertheless, by applying other methods, the same authors proved that CSR firms also outperform in these factors compared to the Non-CSR firms emphasizing the correlation between financial performance and CSR.

Only one study that of Karagiorgos (2010) associated CSR with the financial performance of Greek firms. He attempted to explore the relationship of CSR and firms' financial performance in Greek firms listed in the Athens Stock Exchange in 2008–2009 period. The evaluation of CSR performance was held using the method of content analysis of sustainability reports according to GRI guidelines and performance indicators. Based on stakeholder theory and mainly on the theory of “good management”, he tried to find out if an improvement in CSR actions results in higher stock returns. The results showed that a Greek company which adopts CSR strategy and practices may obtain higher stock values due to the fact that stakeholders (shareholders) evaluate positively these activities. This generalization is based on the fact that the sample companies of his study were of a wide variety on market capitalization and that they represent different kinds of industry.

Most studies have focused on how well Greek firms have adopted CSR practices on the disclosure of CSR activities and on evaluating the CSR reports published by the Greek companies. Thus, the purpose of this paper is to examine the above relationship as it applies to the Greek firms listed on the Athens Stock Exchange. In this context, our research will focus on the characteristics of Greek firms that adopt CSR practices and on comparing the performances of Greek companies listed on the Athens Stock Exchange that have adopted CSR practices and those that have not.

The Business Sector and Its Impact on CSR

The empirical findings of the study of Bichta (2003) have shed light on the link between the industry and CSR characteristics in Greece. Her research reveals that a firm's environmental performance may be linked to the sector/industry that it operates in. Surely, this shows that different industries have different issues to deal with, and therefore different factors (e.g., economic efficiency, available technology, environmental legislation and government control, pressure groups, etc.) that either foster or discourage environmental behaviour in a given sector and, as a result, need to be identified. By identifying these factors/variables, this contributes to the theory's understanding of a sector's needs and of the likely response to the call for socially responsible behaviour.

According to Sweeney and Coughlan (2011), relying on a single sector to understand CSR is tricky. There are significant differences among and within six different industries as to how the CSR image is created in relation to their stakeholders. Findings generally tend to show that firms within an industry adhere to the rules set by that industry. This also underlines the importance of industry as a control variable for studies involving CSR activities of a group of enterprises.

Melo and Garrido-Mogradio (2012) provided an analysis of meaningful interactions from the aspect of industrial sectors, which revealed valuable insight on the significance of the prominent place of stakeholders in relation to CSR dimensions. The dimension of industrial relations is only significant in general industries. It is not by chance that this industry includes areas that are highly relevant to the trade union movement. Environmental issues, on the other hand, are significantly relevant to the resources industry, consisting mainly of industries related to the primary sector of mining. Furthermore, the authors anticipated a significant correlation with basic industries, on the basis of the same argument, but this correlation was not statistically significant.

The findings of Melo and Garrido-Mogradio (2012) indicate that CSR is better assessed and as a consequence better practiced when the multidimensional nature is taken into account. Furthermore they found that industrial sector determines the tendencies to good or bad reputation that each of those areas are prone to. As a result of the different CSR focus areas, production processes and customer characteristics; the prevalence of certain benefits varies among different sectors. The Community Participation/development and environmental issues are the main CSR concerns for the mining industry. Acquiring and maintaining an operating licence, the fostering of a stable business environment and the improvement of bad corporate reputation in the mining industry are the major benefits in adopting CSR practices. Attracting highly skilled workers, product safety and innovation are the most important benefits of improved environmental and labour practices in the chemical industry. Finally, in the light industry, if we take the textile industry for instance, good labour practices and fair operating practices are the most important CSR issues that lead to increased organisational employee commitment and improved reputation, market access and client satisfaction. Evidence of the positive impact of CSR on competitiveness can be found for businesses in all three industrial sectors.

Looking into the industrial sector is fundamental because many studies have found a positive correlation between the increase of value/performance of a company and CSR, with the industrial sector within which a company operates being the behaviour determinant. Although various studies have come up with different findings, what they agree on is that CSR is a complex concept when combined with the focus on different stakeholder groups involved in the industry. Thus, focusing on the group of community stakeholders as well as product issues is considered important by enterprises of all industrial sectors. Contrarily, employee and environment stakeholder groups will become important only for those companies that are considered sectorally important such as the industries with a strong trade union

movement as regards the first group and the industries of a great environmental impact as regards the second group.

Data

The study sample is composed of listed companies in the Athens Stock Exchange during the period 2006–2012. We excluded banking institutions as their balance sheets are different to those of companies of other sectors. Thus, it would be difficult to compare their financial indicators to those of other dissimilar enterprises. Eventually, a total of 124 companies remained in the sample after companies with missing financial data over the years 2006–2012 were eliminated.

We extracted information about *Sector* they operate in, *Profit/Loss before tax*, *Total Assets*, *Total Equity*, *Turnover*, *Fixed Assets*, *Current Assets*, *Short-term Liabilities*, *Long-term Liabilities* and *Earnings per Share*. We calculated the *Return on Assets (ROA)* by dividing *Profit/Loss before tax* by *Total Assets*, *Return on Equity (ROE)* by dividing *Profit/Loss before tax* by *Total Equity* and *Return on Sales (ROS)* by dividing *Turnover* by *Total Assets*. Furthermore, the listed companies were divided into two groups, defined as *CSR* binary variable; those that adopted *CSR* practices (*CSR* = 1) and those that did not (*CSR* = 0), subject to the declared *CSR* policy on their websites. We were also able to classify *Sector* into *Wider Section* using variable values from 1 to 3 (1 = Raw material sourcing, primary production coming from agriculture, fisheries, livestock farming and the manufacturing industry, 2 = Commerce, 3 = Services).

In the current study, the relationship between corporate social responsibility and financial performance during the period 2006–2012, was tested. We used repeated measurement analysis to analyze the data. Repeated measures designs can be analyzed within the mixed models framework. A linear mixed model was run to determine whether the *CSR* had an effect on financial performance and whether this effect was dependent on the *Wider Section* that companies were classified. In our study, firm financial performance was measured by *ROA*, *ROE*, *ROS* and *EPS*.

Empirical Results

We investigated how the adoption of *CSR* practices (*CSR*) by a company affects its financial performance over a 7-year period and whether there is an interaction effect between *CSR* and the *Wider Section*. To examine our research question, we use the linear mixed model which is represented in its most general fashion as $Y = X\beta + Z\gamma + \varepsilon$, where X and Z are the fixed and random design matrices, respectively, β is a vector of unknown fixed effects, γ is a vector of unknown random effects and ε is the unknown vector of random errors. We assume that the random effects are normally distributed. As fixed effects, we entered *CSR*, *Wider Section*

(with interaction term) into the model. The *YEAR* was also used a fixed effect to adjust for possible trends in the 7-year period. We estimated a random intercept model in which the intercept was allowed to vary with each company. In addition to the random effects model, *YEAR* has been specified as repeated effect.

From the estimates of covariance parameters, we see that, based on the Wald test, there is evidence against the null hypothesis that the variance of the between subjects slopes is 0, suggesting that all random models are adequate.

From the Type III tests of fixed effects, we see that *CSR* does impact *ROA* performance at the 5 % significance level ($p = 0.045$). More specifically, there is a statistically significant relationship between *ROA* and companies with $CSR = 0$ with a magnitude of -0.07 (95 % CI -0.13 to -0.028). That is, the parameter estimates of *CSR* for companies with $CSR = 0$ (companies that do not adopt *CSR* practices) indicates that they do not perform better than companies with $CSR = 1$. Based on the observed significance level of the variable *Wider Section* ($p = 0.177$), we cannot reject the null hypothesis that there is no relationship between *Wider Section* and *ROA*. Nevertheless, the individual effect of Primary Production (*Wider Section* = 1) is significantly different ($p = 0.008$, 95 % CI -0.12 to -0.02) from the *Services* sector and it is associated with less *ROA* than either of the other two sectors. Furthermore, there is not sufficient evidence ($p = 0.051$) that the interaction between the variables *CSR* and *Wider Section* is statistically significant in explaining financial performance in terms of *ROA*.

Next, based on the observed significance level of the variable *CSR*, we reject the null hypothesis that there is no relationship between *CSR* and *ROE* ($p = 0.040$). That is, a company engaging in *CSR* principles will have a predicted *ROE* improvement of 0.17 (95 % CI -0.28 to -0.07). We see from the results of Type III tests that the *CSR* by *Wider Section* is statistically significant ($p = 0.017$), while the variable *Wider Section* is not. The individual effect of Primary Production (*Wider Section* = 1) is significantly different ($p = 0.001$, 95 % CI -0.3 to -0.07) from the *Services* and it is associated with less *ROE* than either of the other two sectors. Based on the estimated marginal means, we also calculated the predicted *ROE* for each *SCR* by *Wider Section* category. In particular, regarding the *Services* and *Commerce* sections, it was revealed that companies which are socially responsible have higher average *ROE* (0.172 and 0.115, respectively), than the other companies (0.001 and 0.045, respectively). In contrast, in the *Primary Production* section, the average *ROE* is lower in the companies that adopt the *CSR* principles (0.016) than in the companies that do not (0.036).

Regarding *ROS* and *EPS*, the results show that the null hypothesis that *CSR* effect makes no difference is not rejected. The effect *Wider Section* is not significant. Furthermore, there is no significant interaction effect between the variables *CSR* and *Wider Section* in explaining financial performance in terms of *ROS* and *EPS*.

The effect *YEAR* is also significant in all models and measures of financial performance decrease with *YEAR*.

Conclusions

In our study we set out to investigate whether the financial performances of Greek companies listed on the Athens Stock Exchange that have adopted CSR practices are better than those that have not. Also we investigated whether companies engaged in CSR activities had a positive effect on financial performance and moreover whether this effect was dependent on the *Wider Section* that companies were classified. Firm financial performance was measured by *ROA*, *ROE*, *ROS* and *EPS*.

Specifically, when measuring financial performance by *ROA* and according to the findings from other researchers, such as Yi-Ling (2011) and Artiach et al. (2010), corporate social responsibility associated with human resources and the government (CSR for government) has a significant positive association with *ROA* (financial performance) and corporate sustainability performance companies are more profitable than other companies because there is a strong positive association with *ROA*, respectively. In the same frame, our findings show that it is possible according to *ROA* for companies with *CSR* = 1 (companies engaged in CSR activities) to have at least the same economic performance to companies with *CSR* = 0 (that do not engage in CSR activities) and most certainly companies with *CSR* = 0 do not perform better than companies with *CSR* = 1. However, when we come to investigate whether *ROA* (financial performance) is affected by the implication of corporate social responsible activities and *Wider Section* demands the answer is negative. Although there are other studies implying and stating quite the opposite like Sweeney and Coughlan (2011) who underline the importance of industry as a control variable for studies involving CSR activities of a group of enterprises. The empirical results of our study indicate that there is no sufficient evidence that the interaction between these variables *CSR* and *Wider Section* is statistical significant in affecting financial performance in *ROA* terms.

A number of studies that have investigated the effect of CSR to financial performance revealed that there is a statistically significant relationship either between *CSR* and *ROA* or between *CSR* and *ROE*. In particular, Shen and Chang (2009), demonstrated that there is indeed an association between *CSR* and financial performance largely because firms which apply CSR activities tend to outperform in *ROE* and *EPS* compared to firms which do not apply CSR activities but there are, however, differences in *ROA*. Moreover, research by Artiach et al. (2010) proved that CSP companies are more profitable than other companies because there was a strong positive association with *ROA*, whereas the association with *ROE* was weak. Last but not least, other researchers like López et al. (2007) when measuring performance by *ROE* and *ROA* did not establish that there is a positive association between performance of corporations with neither of the two ratios and *CSR*. In our study there is evidence that *ROA* and *ROE* are statistically significant with respect to *CSR*. Moreover, it was found that the interaction of *CSR* by *Wider Section* seem to have an effect in *ROE* but not in *ROA*. According to Bichta (2003), different industries have different issues to deal with, and therefore different factors

(e.g., economic efficiency, available technology, environmental legislation and government control, pressure groups, etc.) that either foster or discourage environmental behaviour in a given sector and, as a result, need to be identified. In addition, Melo and Garrido-Mogrodo (2012) argue that CSR is better assessed and as a consequence better practiced when the multidimensional nature is taken into account.

Furthermore, Primary Production is associated with less ROE than either of the other two sections. In particular, regarding services and commerce, it was revealed that companies which are socially responsible have higher average ROE, than the other companies. In contrast, in the Primary Production section, the average ROE is lower in the companies that adopt the CSR principles than in the companies that do not. It is clear that CSR activities undertaken by firms are related to Wider Sector demands and this interaction brings about different financial performance in different industries according to ROE and this is consistent with Sweeney and Coughlan (2011).

Moreover, our findings are not only consistent to the findings of Karagiorgos (2010) study which showed that Greek firms that disclose sustainability reports according to GRI guidelines and are listed in the Athens Stock Exchange in the years 2008–2009 have greater stock returns but they verify and expand these results. First by collecting a sample firms of 2006–2012 listed in the Athens Stock Exchange and moreover by including the majority of the company excluding only banking institutions. Nevertheless, all the companies engaged in CSR activities (both those engaged in CSR activities and those disclosing sustainability reports according to GRI guidelines) were selected. The results indicate that in a wider variety of industry sections and a larger proportion of Greek firms, financial performance is indeed associated to CSR actions according to ROA and ROE ratios.

The present study is the first based on Greek companies listed in the Athens Stock Exchange which explores whether the CSR implementation will bring a better financial performance. Overall, the empirical results indicate that CSR is a factor which contributes positively to the financial performance in terms of ROA and ROE. Moreover, as we have shown, the interaction of *Wider Section* with CSR affects financial performance in terms only of ROE.

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Part VII

Healthcare Services: Special Aspects and Challenges in an Evolving Environment

Organized by: Charalampos Platis

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Description:

This section will accommodate research papers, study of cases and thorough presentation by reviewing the literature at Health Policy field level (Health Systems) as well as more “technical” issues from everyday healthcare practice. Objectives of the module is the emergence of both, the specificity of healthcare delivery systems and from the other the close relationship with the modern trends in management such as operation research, strategic planning, target setting procedure, evaluation analysis, new technologies in management of human resources and financing management, etc.

Management of Medical Crisis Events Using ICT Tools

**Emmanouil Zoulias, Georgia Moutzouropoulou
and Charalampos Platis**

Abstract The goal of the project is to make us realize how essential the political prevention and dealing with crises as well as the emergencies in Hellenic public administration is; this will be accomplished with the help of useful means offered by technology, such as informatics. The survey of an administrative model being able to control any phenomena of crises combined with the necessity for a global modernization of Hellenic public administration through reorganizing various procedures has guided to the choice of a specific procedure of an emergency and its being considered as a model with the use of computer; so that the points which need to be improved are pointed out. More specifically, there is a presentation of the business procedure of aerial search and rescue by using the information tool, MS Project. The already existing situation is presented, followed by a suggestion of reorganizing its procedure. In addition to the above referred, the tool and the methodology of supporting the implementation of operations is presented, together with the documentation and the registration of operations for further processing. It is not easy to realize both a reorganized model as well as its evaluation with the framework of such a project; nevertheless an evaluation of the suggested changes to the procedure and its comparison to the present situation is being undertaken.

Keywords Emergencies · Crisis management · Reorganizing procedures · BPMN · MS project · Information tools

Introduction

Today the policy of managing emergencies will have to be an integral part of the contemporary administration; this role of public administration changes within a globally, changing, social environment accordingly. This environment asks for

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effectiveness and efficiency in combination with high quality services and reduction of cost and expenditures.

On the other hand creating a model of procedures is recognized as an important act of reorganizing the procedures which will help the solution of their problems (Hammer and Champy 2003). This model focuses on the systematic register, the elaboration, and description of the structure, the function, and the activities of an organization as it is based on the graphical method of the description of procedures. The graphical method of the description of procedures is suitable for the presentation of the flow of process as well as the parallel subprocess; in this way the necessary level of detail for making the overview of the procedure easier is obtained (BPMN 2014).

Reorganizing the procedures is the act of fundamental reexamining and radical redesigning of administrative procedures so that great improvement in service, quality, time, and cost of services is succeeded (Deligiorgi et al. 2014). The basic principles of reorganizing these procedures have been referred in details by the researchers and are summarized according to (Hammer and Champy 2003) as follows: 1. Manager of Business, 2. Focus on the goal, 3. covering a client's necessities and demands, 4. being concentrated of the value of business, 5. Virtual Recourses, 6. Exclusiveness of information (Hammer and Champy 2003).

Analysis

The methodology of reorganizing the procedure begins with understanding it first and then presenting it in five stages. These stages can not only be used as a sample of directions for the methodology of reorganizing a procedure of an organization, but as steps of reorganizing the very structure of the organization itself, as well.

- a. Depiction of the already existing situation
- b. Analysis and evaluation of the already existing situation (AS-IS)
- c. Definition of the situation TO-BE
- d. Draft of a transitional plan to the situation TO-BE
- e. Evaluation and maintenance of the results (Deligiorgi et al. 2014).

Business Process Modeling Notation (BPMN) (Constantinou 2008) was specified primarily by Business Process Management Initiative (BPMI) in 2004 and adopted by Object Management Group (OMG) in 2006 (White 2014). Based on the BPMN, four mainly basic categories of planning symbols are used: activities, gateways, events, and connectors or flows (Fig. 1).

Event	○
Activity	□
Gateway	◇
Flow	→

Fig. 1 Basic planning symbols BPMN (Source BPMN Basics 2014 <http://www.bpmn.org/>)

Materials and Methods

What is studied in this project is the case of the procedure of aerial search and rescue. CIVIL PROTECTION OPERATIONS CENTRE—KEPP (GSCP 2014) coordinates the whole procedure and interacts with the bodies in charge. HELLENIC POLICE is responsible for the research and the FIRE BRIGADE/199 is responsible for the rescue. The SEARCH AND RESCUE COORDINATION CENTRE—EKSED is responsible for the helicopter taking off. This act follows a written request submitted by KEPP. When the case is about an incident, which is not submitted by a state service, but still through a phone call the use of helicopter is demanded, one has to follow the steps (GSCP 2014), (Europe, Council Decision 91/396/EEC):

- A. Non state service such as citizens, volunteers, etc. calls KEPP referring that the need of using a helicopter is urgent. The coordinators on shift of KEPP write down who asks the helicopter, the time and the telephone.
- B. The coordinators on shift of KEPP call the director of KEPP for the incident.
- C. The next step for the coordinators on shift of KEPP is to inform the bodies in charge for the incident pointing out to proceed in full investigation of the incident (exact place, report for injured people, any other valuable information) and then inform KEPP if there is actually an emergency of using a helicopter or not.
- D. In case of inevitable use of helicopter, the coordinators on shift of KEPP call EKSED so that they prepare the helicopter to take off, emphasizing that a relevant document will shortly follow.
- E. The coordinators on shift of KEPP and bodies in charge for the incident keep in contact with each other and KEPP is the one responsible for the coordination of the whole operation.
- F. The coordinators on shift of KEPP prepare a document concerning the use of helicopter in operation and they send it to EKSED.
- G. The coordinators on shift of KEPP follow the evolution of the incident being in constant communication with the bodies in charge; they register the time every act happens in detail until the whole operation finishes in the daily event report.

Trying to create a model for the realization and substantiation of the pattern for research and rescue from air and land, the MS Project was chosen; this tool is very

easy to use and make the record of models of the procedures simple followed by the good use of their results so as to be useful to the organization.

To depict the procedure we started with the detailed record, step by step of the works (Task Name) according to the time of the progress of facts. In every work, its duration is planned and most specifically the maximum duration for every work has been chosen, when planning as it happens in an already existing version of research and rescue. Then the Predecessors to clarify the order of the steps of the procedure were depicted, whereas on the Resource Sheet the human resources working on the specific procedure are depicted together with the material resources which are used. On recording the situation AS–IS, the record of which was named “RESEARCH—RESCUE” 15 steps for the procedure have been recorded. The human recourses, the material recourses that were used together with their costs, have been recorded in detail on the Resource Sheet:

1. NON—STATE SERVICE: zero cost
2. COORDINATORS OF KEPP: 10 €/h
3. RESPONSIBLE BODIES: 10 €/h
4. MEDICAL SERVICES: 10 €/h
5. EKSED: 10 €/h
6. AMBULANCE: 300 €/h
7. HELICOPTER: 3.000 €/h

Depicting the situation TO–BE, the record of which has been named “REPLANING THE PROCEDURE” 12 steps of the procedure have been recorded. The human and material recourses (Europe, Council Decision [91/396/EEC](#)) which have been used, as well as their costs, have been recorded in details on the Resource Sheet (Fig. 2):

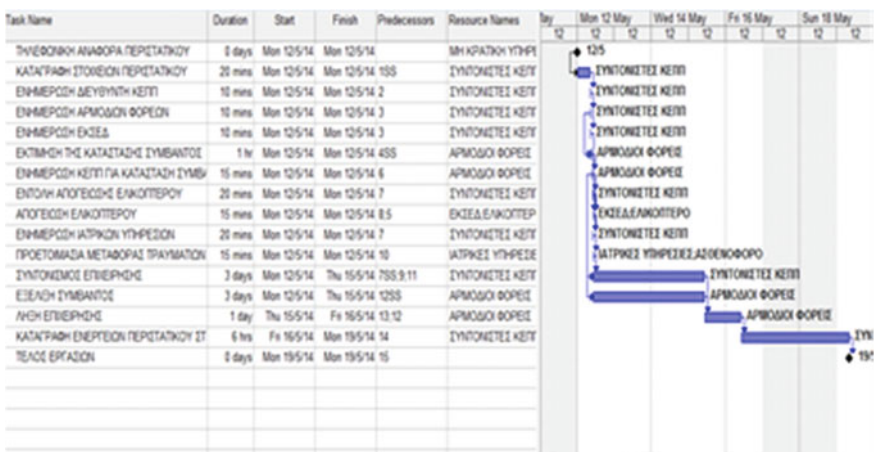


Fig. 2 AS–IS project Gantt chart

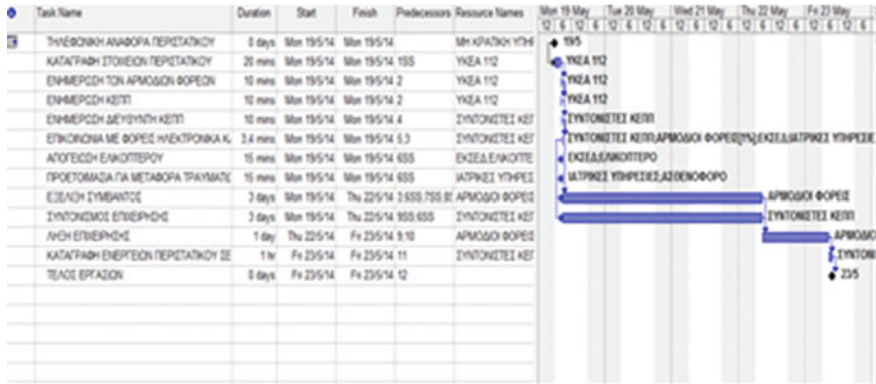


Fig. 3 TO-BE project Gantt chart

1. NON—STATE SERVICE: zero cost
2. EUROPEAN EMERGENCY CALL NUMBER 112 (EC 2012), (Motorola 2012), (TETRA 2014), (ETSI 2014), (Greek Framework Service for e-Government Interoperability and Standards 2012): 10 €/h
3. COORDINATORS OF KEPP: 10 €/h
4. RESPONSIBLE BODIES: 10 €/h
5. MEDICAL SERVICES: 10 €/h
6. EKSED: 10 €/h
7. AMBULANCE: 300 €/h
8. HELICOPTER: 3.000 €/h (Fig. 3).

Results

Using the MS Project, there has been an evaluation of the parameters of planning again, both the time and the cost; at the same time a tool to support the realization and substantiation of the rescue events.

Project Summary: From the results, as they are depicted on the Project Summary of the already existing situation and the new one, being planned again, it is obvious that both the time and the cost of the procedure have been reduced as:

1. The steps of written orders by KEPP so as to prepare the helicopter to take off by EKSED and the preparation to carry the wounded by the medical service are abolished.
2. By recording on P/C the substantiated record of all facts of every operation in the tool suggested, the hours filing into archives are reduced, fact that is depicted in the newly planned procedure.

Costs			
Scheduled:	1,477.50 €	Remaining:	1,477.50 €
Baseline:	0,00 €	Actual:	0,00 €
Variance:	1,477.50 €		

Task Status		Resource Status	
Tasks not yet started:	10	Work Resources:	0
Tasks in progress:	0	Overallocated Work Resources:	1
Tasks completed:	0	Material Resources:	0
Total Tasks:	10	Total Resources:	7

Fig. 4 AS-IS project summary

Costs			
Scheduled:	1,410.01 €	Remaining:	1,410.01 €
Baseline:	0,00 €	Actual:	0,00 €
Variance:	1,410.01 €		

Task Status		Resource Status	
Tasks not yet started:	13	Work Resources:	3
Tasks in progress:	0	Overallocated Work Resources:	0
Tasks completed:	0	Material Resources:	0
Total Tasks:	13	Total Resources:	8

Fig. 5 TO-BE project summary

Apart from what has been referred above more specifically the time to complete the operation in question before being planned again is estimated in 67.75 h costing 1477.50 €; after the suggested new plan and the better via model coordination, the time of carrying out the operation is reduced in 59 h and the cost is about 1410 € (Figs. 4 and 5).

Conclusions

Taking into consideration that the so far recording and filing of information for the events is partially done by OPS of KEPP and there is no complete substantiation and based on Greek Framework Service for e-Government Interoperability and Standards (2012), while the access is limited, a model of presenting every event is suggested and set into disposal at the same time. This model presents all steps of the procedure, substantiates specifically the time, recourses, and cost for each operation separately; it can also lead to a series of advantages and possibilities of attending the specific as well as the other rescue procedures. The model planned and offered by the MS Project, leads to the complete presentation of the procedure in an equal way, so that all information is filed according to specific steps on the basis.

Additionally, it is feasible by using more tools, which cooperate with MS Project, such as MS Project Server and Sharepoint, to share and elaborate the information via internet, so that it is available to everybody involved and not only to some specific ones, as it happens so far. In this way, it becomes clear that since the parts involved can share a common basis for information, the coordinators of the informative tool, who are suggested to be the coordinators of KEPP on shift, are in the position to inform online the bodies for the evolution of events, while the operations are in progress and this succeed better and quicker coordination.

Apart from that, in this way of recording, a complete picture for all procedures and events is presented, while the recording of acts becomes easier within the tool in question; the collection and filing of information will no more be partial, but it will contain all necessary information accessible to everyone. With the suggested model template on how to manage emergencies in MS Project are equally recorded both the cases and the bodies involved; so that in this way they are able to elaborate the facts with modern methods of producing knowledge so that conclusion with substantial elements are formulated for possible changes, improvements, interventions in the procedures, in the means of rescue, the decisions and the whole spectrum of acts.

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Long-Term Cancer Patient Care: “New Insight on Training Needs for Health Professionals in Today’s Greece”

George Pierrakos, G. Tzamalouks, D. Latsou, A. Goula, J. Pateras, S. Asonitou and C. Platis

Abstract Objective: To explore the views of Healthcare professionals (HPs) on their educational needs so they can eventually improve the care provided to their oncology patients as well as their cooperation with the carers and/or families of these patients. Method: This qualitative study used semi-structured interviews and thematic analysis. In two oncology hospitals of Athens—Greece (Metaxa—Ag. Anargyroi), 17 HPs from the corresponding medical/nursing staff dedicated to oncology patients were recruited during July–August 2011. The transcripts were analyzed thematically. Results: All HPs confirmed their need for further education in all areas such as new drugs and technologies, communication techniques for psychosocial support to patients, issues concerning the quality of life of oncology patients. The HPs underlined their need for information training, required particularly by younger HPs and for emotionally through group meetings. Some specific conclusions were related to learning grief management skills and health economics. A common request was for training in the operation of a well-organized interdisciplinary team. Conclusion: Further and better targeted education has been recognized as essential in order to achieve quality home nursing care and this has been a common requirement expressed by both HPs and oncology patients, who are the intended recipients of home nursing care.

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Keywords Cancer • Health professionals • Palliative care • Interdisciplinary team • Home healthcare services

Introduction

HPs in primary health care, aim at helping the suffering individual enhance its own ability for self-care. HPs intervene in the lives of patients in order to help them come to terms with the consequences of their illness. In Greece, home nursing care has never been systematically organized but instead it was rather developed thanks to the fragmented efforts of brave and dedicated individual entities. In the framework of the NHS, home nursing care is provided by hospitals through brief—stay units, home care and pain clinics.

Despite major advantages in cancer treatment over recent decades, neoplastic diseases remain the leading cause of mortality in developed countries, accounting for approximately 13 % of all deaths each year (Lozano 2012). Globally, there is a growing concern for care of the dying, and similarly a rapid growth in the number of hospices and specialist palliative-care HPs, as well as development of specialized hospital units (Gomes and Higginson 2008). In order for community nurses to be able to provide optimum palliative care, they need easier access to available community resources, and better interdisciplinary coordination and cooperation (Tomison and McDowel 2011). There is a necessity of smooth interdisciplinary cooperation, mainly among general practitioners and nurses in palliative home care (Goldchmidt et al. 2005).

Therefore the purpose of our study was to explore the views of HPs on their educational needs so they can eventually improve the care provided to their oncology patients as well as their cooperation with the carers and/or families of these patients.

Methods

This study used a qualitative research approach in which semi-structured interviews were used. For data analysis, we used the qualitative content analysis method based on open questions in the form of semi-structured interviews referred to (a) socio-demographic information (b) necessary additional knowledge, (c) educational needs focusing on psychological, emotional and social support as well as on ethical issues for patients, caregivers and HPs, (d) skills in electronics and IT for better electronic communication with other services and units as well as skills in statistics (e) familiarization with technological aids and appliances (Sandelowski 1995).

The target groups were selected in cooperation with the Laboratory of Community Health Nursing—National University of Athens (E.K.II.A). The sample came from two large oncology hospitals located in the region of Attiki:

Metaxas Hospital and the Agioi Anargyroi Hospital. The data were collected in July and August 2011. During the pilot phase of the study, 17 interviews with HPs were carried out. HPs were selected from a professional network of HPs for oncology patients using the snowball method.

Personal meetings and individual interviews were carried out. The semi-structured interviews, which lasted from 12 min (the shortest) up to 33 min (the longest), were carried out and recorded by the qualitative researchers. The two sides (researchers and HPs) were not acquainted prior to the research. The interviews took place at the premises of these hospitals, in the offices of the HPs.

Qualitative research analysis was achieved using the constant comparative method. The interviews were transcribed into texts with the utmost precision, and detailed summaries were created for each interview covering the main points of every answer (Braun and Clark 2006). After interview transcription, a qualitative thematic analysis was carried out. Where conceptual similarities were observed, they were grouped by categories, and the themes from each group were identified as potential thematic units.

The reliability of the analysis was reinforced by 10 selected interviews, which were encoded by the second researcher (T.P). The degree of agreement between the two researchers after the first attempt of categorization was 80 %. This increased in the second stage where the coordinator—researcher (T.P) explained to the second researcher (G.T) concepts and terminology used in the research. Participants were identified by codes indicating Nurse (N), Oncologist (O), Psychologist (Psg), Social worker (SW) and all interviews (I). For example, [I.1N] refers to the first interviewed nurse, where I. = interview and 1N = 1Interview Nurse and the answer(s) are quoted by "...".

Results

Sample Characteristics

A total of eleven HPs from Metaxas hospital and six HPs from the Agioi Anargyroi hospital participated in the study. The majority of the sample was female (68.8 %). The mean age was 43.7-years old and the work experience was 15.8 years. 70.5 % of respondents had university degree. The sample consisted of 8 nurses, 3 oncologists, 2 psychologists and 4 social workers.

Necessary Additional Knowledge (Need for Continuous Education)

In the early stages of the disease or right after, there is an immediate and ongoing need for information and teaching on resources for community support, symptom

management, practical care, psychological support and encouragement and enhancement of self-care abilities. A common request from HPs was to get practical as well as theoretical training, specifically to receive continuous information on their subject area.

The workplace must definitely train you when you arrive, I studied a lot on my own but I wish I had a little more systematic, theoretical guidance from the House [I1N]

Educational Needs Focusing on Psychological, Emotional and Social Support as Well as on Ethical Issues for Patients, Caregivers, and HPs

HPs need the interdisciplinary cooperation of all other HPs as well, for patient's and carers' emotional and crisis management. HPs also talked about patient and family support techniques addressing both patients and family members and helping everybody deal with the upcoming death.

It is possible that the patient is all alone or that sometimes the carer appears to be in a worse state of mind than the patient himself. so I cannot cope with his relatives, explain the gravity of the situation to them. I mean, I tell them that his situation is really serious... and they reply: so when is he going to be o.k again? Therefore we need a trained health professional to help the patient psychologically and offer his family a systemic support which is of major importance [I12N].

Skills in Electronics and IT for Better Electronic Communication with Other Services and Units as Well as Skills in Statistics

At the same time HPs requested regular updating and training on new data machines and closer cooperation with other units and highlighted difficulties due to personnel shortage and lack of time. Consequently HPs requested an electronic patient record.

Here we are treating an average of 75 people per day and there are usually only 3 or 4 of us. Imagine 3-4 persons performing venipunctures, administering drugs, carrying out blood transfusions and treating whatever emergency may occur... too few nurses and too many patients. We also asked for more staff but they did not send us any so nothing changed.... We still have printed files and we hand-write everything on them, patient's medical history, the visits we made, what we did...I guess budget is tight [I 13 S.W, I1N].

Familiarization with Technological Aids and Appliances

All HPs interviewed expressed the need to acquire extra theoretical knowledge on hospital technological aids and appliances. More specifically, nurses would like to be familiarized with new ventilators, pumps, ostomies, butterflies, catheters, electronic thermometers, blood pressure monitors, oxygen therapy, wheel chairs and lifts and general knowledge of psychosomatic issues.

Well, anyhow nursing is always developing. New material, gadgets, red lamps, blue lamps and buttons show up everyday. You have to always be up to date if you want to continue in the branch [I4N].

Discussion

Our research, focusing on the analysis of HPs interviews at the two major oncology hospitals of Athens, Greece, suggested a devastating lack of time due to the staff shortage in hospital short stay units as well as in hospital supervised home care units.

All HPs confirmed their need for further education in all areas such as new drugs and technologies, communication techniques for psychosocial support to patients, issues concerning the quality of life of oncology patients. The HPs underlined their need for information training, required particularly by younger HPs and for emotionally through group meetings. Some specific conclusions were related to learning grief management skills and health economics. A common request was for training in the operation of a well-organized interdisciplinary team.

Our research is confirmed by a prior research, which in order to investigate the problems faced by Greek home caregivers for cancer patients (Tsigaropoulos et al. 2009). Our research is also confirmed by a previous study on a sample of 640 GPs who reported that their main educational needs primarily laid on training in symptom control, opioid prescription, nausea and vomit control and continuous drug infusion device control (Shipman et al. 2001). It is now commonly accepted that patients treated by HPs trained in palliative care benefit from improved symptom control, better quality of life and longer survival rates (Higginson and Evans 2010; Yennurajalingam et al. 2011).

Finally it has been remarkable that regardless of the main subject treated during our interview (technological, medical, methodological, financial, administrative matters), the HPs always found a way to repeat and interject moral, ethical, social, psychological and spiritual issues, that is to say the Human Parameter, since the main point here is the person in pain and our human to human interaction.

Limitations and Strengths

Our research has not been carried out in the whole of Greece; however, in the Athens region we have exhausted the sample of HPs working in the units and reached sufficient data saturation. What is left is to extend the findings to other care units in other areas of Greece in order to determine whether also they can be confirmed nationwide.

Conclusion

Further and better targeted education has been recognized as essential in order to achieve quality home nursing care and this has been a common requirement expressed by both HPs and oncology patients who are the intended recipients of home nursing care.

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Ethical Approval

Ethical clearance was obtained from the Human Ethics Committee at the National and Kapodistrian University of Athens and from the Scientific Council of the two hospitals in question. All participants were given written and oral information about the study and signed an informed consent form.

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Leadership Capabilities and their Effect on Job Performance, an Approach in Healthcare Sector

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Abstract Within this work, we try to investigate the impact of leadership capabilities in relation to job performance, which reflects the opinion of employee about their job performance. Job performance is one of the most important factors highly related to workplace health risks as well as for the patients and for the employees. Demanding special conditions of every day operation in health services, require a focus on quality of the therapeutic relationship, quality of life of the patient, and in management of the experience both patients and health workers. These issues are particularly important for people exercise managerial roles requiring management skills of high expertise. From the other hand, job performance is one of the most vital factors in the provision of safe, high quality, and reliable services in the healthcare sector. This paper based on a survey field using the replies of a questioner by 271 nurses operating in Greek hospitals. Results showed that are sufficient connection among job performance in relation to leadership capabilities. The analysis methodology based on modern tools using data mining technologies. Classical statistical methods have their limitations and using data mining methods we can reveal hidden patterns of the data or even unrevealed relationships in data. It combines knowledge and techniques from various scientific fields such as DBM (database management), artificial intelligence, machine learning. To analyze trainee's opinion, we employed a content analysis and a sophisticated tool named RapidMiner.

Keywords Leadership capabilities · Job performance · Job autonomy · Data mining · Health care

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Introduction

Within this work we try to investigate the impact of leadership capabilities in relation to job performance, which reflects the opinion of employee about their job performance in the field of healthcare. Although there are innovative theories and techniques in terms of therapeutic methods (Zoulias et al. 2011) as well as in health administrative and economical area (Platis and Zoulias 2014), traditional theories that deal with human as an employee and his behavior—performance that are always valuable. Job performance is one of the most important factors highly related to workplace health risks as well as for the patients and for the employees. The ever increasing demand for higher quality healthcare services, inevitably leads to investigate the therapeutic relationship of patient's life quality and exploration of their views. These issues are particularly important for people possessing managerial roles and requiring management skills of high expertise. On the other hand, job performance is one of the most vital factors providing safety and reliable services of high quality in healthcare sector (Platis and Zoulias 2014).

The analysis methodology based on modern tools using data mining technologies. The field of data mining, like statistics, concerns itself with “learning from data” or turning data into information but data mining is not a “statistical déjà vu” (Hand 1999). Statistics is the science of learning from data; on the other hand “Data mining is the process of exploration and analysis, by automatic or semiautomatic means, of large quantities of data in order to discover meaningful patterns and rules” (Berry and Linoff 1997). Using data mining methods we can reveal hidden patterns of the data or even unrevealed relationships in data. It combines knowledge and techniques from various scientific fields such as DBM (data base management), artificial intelligence, machine learning. Analysis of trainee's opinion has been applied in various applications even within medical area (Wang et al. 2015; Alimisis and Zoulias 2013; Alimisis et al. 2013).

Pattern recognition techniques have been widely used as a base for developing decision support systems in medicine to assist diagnosis (Leroy and Chen 2007). These techniques include artificial neural networks (ANNs) (Haykin 1999), evolutionary algorithms such as genetic algorithms (Goldberg 1989), fuzzy logic (Linkens and Mahfouf 2001), various hybrid systems (Papageorgiou and Groumpos 2005), artificial immune systems (AIS) (Timmis et al. 2000), support vector machines (Cristianini and Shawe-Taylor 2000), k-NN (Shakhnarovich et al. 2005), majority vote, considered as one of the simplest and most intuitive methods for combining classifier outputs (Narasimhamurthy 2005; Kuncheva 2004; Gangardiwala and Polikar 2005).

Materials and Methods

The field research was conducted in National Centre of Public Administration, where public servants came from all over Greece were trained and gaining professional skills. Structured questionnaires were distributed to 300 nurses participating in training programs and 245 valid questionnaires were returned. Response rate is about 73 %. Most nurses are female (79 %) and the 52.4 % of the respondents are between 35 and 45-years old. The 31 % of the participants enjoyed from 1 to 5 years of experience in the same department/clinic. Most nursing staff (55.3 %) has income ranging from 1,000 to 1,300 €. The 33.6 % of the respondents are working in a department occupying more than 20 employees.

The structured questionnaire was employed to carry out the survey. The measurement instrument was thoroughly evaluated before release. Ten head nurses of the hospitals involved examined it along with two experienced researchers; the instrument's cognitive relevance to the healthcare sector was confirmed prior to data collection. The instrument was developed by adapting existing multidimensional scales to capture opinion about leadership and employee job performance by providing respondents with 7-scale Likert scaled questions for each multi-item measure employed. The questioner has 16 questions for leadership and 36 questions for job performance. The aim is to apply data mining methods to reveal any possible patterns on performance answers (targets) based on leadership answers (attributes). Within this application we used all available leaderships answers and we did not apply a feature selection technique. The sample was transformed in the following rule, each answer of the 7-scale Likert converted to 0 for answers between 1 and 4 and 1 for 5 and 7. As a result all transformed answers are 0 or 1. This transformation was made by taking into account that our aim in this work is to discriminate the answers in a way of in favors and opponents, the sample is rather small to perform 7 categories for the data and the performance of data mining algorithm using 7 categories with such a small sample is rather low as we tested (Zhou et al. 2005; Kuncheva et al. 2003).

The proposed decision method based on the comparison of four well-known classifiers such as decision trees, k-NN, naïve Bayes, and majority vote process as an output of the three already used classifiers, the decision trees, k-NN, naïve Bayes. In the present implementation, the performance of the proposed decision tree classifier was tested using as splitting criterion gain ratio, max depth of the tree 3, applying pruning, confidence 0.25, minimal leaf size 3, and minimal size for split 4. The k-NN algorithm with number of nearest neighbors equal to 9, correlation distance metric nominal distance rule used to decide how to classify each sample. The naïve Bayes uses Laplace correction. Finally according to the methodology of the classification based on the majority vote (called hereafter as MVC—Majority Vote Classification), the three well-known classifiers, decision trees, k-NN, naïve Bayes, were trained using the same training set. After the training phase, a test feature vector \mathbf{f} was classified using the outputs of the three classifiers according to the majority vote procedure, as shown in the following Table 1.

Table 4 Confusion matrices for k-NN of each question

k-NN	P12_24		P12_26		P12_27		P12_30	
Overall accuracy (%)	84.47		84.50		88.58		83.25	
True	1	0	1	0	1	0	1	0
1	206	34	206	33	217	25	204	40
0	4	1	5	1	3	0	1	0

Table 5 Confusion matrices for naïve Bayes of each question

naïve Bayes	P12_24		P12_26		P12_27		P12_30	
Overall accuracy (%)	66.57		67.35		70.93		63.33	
True	1	0	1	0	1	0	1	0
1	145	17	145	14	160	11	135	20
0	65	18	66	20	60	14	70	20

Table 6 Confusion matrices for majority vote of each question

Majority vote	P12_24		P12_26		P12_27		P12_30	
Overall accuracy (%)	83.22		80.90		86.17		63.33	
True	1	0	1	0	1	0	1	0
1	198	29	193	29	209	23	194	33
0	12	6	18	5	11	2	11	7

We can see that decision tree from the first view seems to be the method with the highest overall performance, but if we observe the confusion matrix of decision tree method for all the above-mentioned questions we can see that the performance in answers labeled zero is 0 % which is very low performance. On the other hand, k-NN and majority vote can identify both categories with a higher performance per category but worst overall.

Discussion—Conclusions

From the analysis made we were led to specific findings and emerged the following. Using decision trees, k-NN, and majority vote we observe high overall accuracy but also very high sensitivity and extremely low specificity, leading to the result that those methods can predict very well answers signed as one, in other words answers of 5–7 in the 7-scale. As an example for question employees ensure continuity in health care (the care is continuous and uninterrupted) overall accuracy is 85.72, 84.47, 83.72 for decision trees, k-NN, majority vote respectively, sensitivity is 1, 0.981, 0.943, and specificity is 0, 0.029, 0.171. In particular those that answer negatively cannot predict sufficiently using those three algorithms.

On the contrary, we can propose the use of naïve Bayes method for the detection and forecasting of possible answers on subjects of job performance and leadership regarding samples of particular characteristics. A very important result is that looking the overall accuracy decision tree is the best algorithm followed by k-NN and Majority Vote but from sensitivity and specificity perspective naïve Bayes is the best algorithm although with lowest overall performance (66.57, 67.35, 70.93, 63.33) but over 63 and up to 71 for all question.

As a future application we propose the application of this methodology on other parameters of organizational psychology, like motivation, communication, and group dynamics. Furthermore some technical advancements can take place like the application of feature selection before the application of data mining methods.

The model can lead to a series of secure and high reliability conclusions for the opinions, perceptions, and attitudes of employees of healthcare services and particularly for the rational and expected relation among two top concepts the leadership and job performance. In this way, future manager's decisions can be documented very well regarding healthcare marketing (employee's satisfaction, patient's satisfaction, organization profile etc.) as well as healthcare management.

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Medical Brain Drain in Debt-Stricken Greece: Is There a Way to Address It?

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Abstract The recent financial crisis has led to an intensification of the emigration of Greek physicians from their homeland. This mass exodus represents a significant human capital flight while in the same time it results in the loss of the resources invested in their education. It is, therefore, necessary to investigate into effective policies aiming towards controlling this phenomenon. Methodologically, a systematic review of the relevant literature was undertaken. Based on this systematic review an action plan for addressing the problem was developed. The main goals of this action plan is to reduce the brain drain, to encourage Greek physicians working abroad to return to Greece and to utilize the valuable skills of both the returning physicians as well as of those working abroad. The interventions proposed are grouped in six main categories. The first category includes measures that enhance the quality of the working conditions and promote the motivation of the medical staff within the Greek National Health Service. The second category deals with matters of graduate and postgraduate medical education, while the third one addresses the issue of poor workforce planning and the resulting oversupply of physicians in Greece. The fourth category addresses issues relating to biomedical research and technology and the fifth one includes measures aiming towards creating global networks of Greek physicians and bioscientists. Last but not least, the sixth category proposes interventions in the area of health tourism and clinical trials aiming to increase productively the demand for medical services in Greece.

Keywords Brain drain · Economic crisis · Greece · Physicians · Emigration

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Introduction

In 2013, migrants were calculated to be about 232 million people around the world by the United Nations, a significant increase from the 154 million in 1990 (United Nations 2013). Demographic and financial inequalities between developed and developing nations as well as the dramatic developments in both telecommunications and transport services during the past decades have been identified as the main reasons for the post-war increasing tendency of migration (Martin 2013). A subset of the migratory phenomenon is the migration of highly qualified professionals and scientists. When the migration is not bidirectional, then the resulting loss of human capital from the country of origin has been described as brain drain, a term that was first used in the 1950s by the British Royal Society to describe the post-war mass exodus of scientists from Europe to North America (Cervantes and Guellec 2002).

The first post-war decades were a period of migration of a significant portion of the Greek population to the countries of northern Europe and North America. However, the migrants of this period were usually of a low socioeconomic and educational level. On the contrary, during the past few years, Greece and other countries stricken by the economic crisis are facing an emigration of population groups which are on average young, with high expectations and with a high educational level (Malkoutzis 2011). Among them, many young doctors choose to emigrate either right after graduation from medical school or after specialty training. According to the published data of the Medical Association of Athens for the wider Athens area, in 2012, 1808 doctors, among them 1166 specialists, emigrated from Greece compared with just 535 in 2007 (292 specialists). This significant increase in emigration was accompanied by a doubling of the number of registered unemployed specialists from 592 to 1191 during this 5-year period (2007–2012) (Medical Association of Athens 2013). The unemployment young doctors are facing is just one of the reasons for this increasing tendency of their emigration. Before attempting to investigate into the causes of this phenomenon and propose an effective action plan for its containment, we should take a look at its effects in the Greek healthcare system.

Medical Brain Drain and Its Effects to the Greek Healthcare System

The negative effects of the mass loss of medical staff from developing countries have been described extensively in the literature (Hagopian et al. 2005). Even though empirical data are limited, in a theoretical level the negative effect have been mainly attributed to the loss of human capital on the one hand and on the other hand to the loss of the resources spent for the training of the migrant medical staff.

However, the case of the recent mass migration of medical staff from Greece is significantly different from the phenomenon described above. The number of physicians per 1000 inhabitants in Greece is the highest among the countries of the Organization for Economic Co-operation and Development (OECD), 6.2 per 1000 inhabitants, almost double than the OECD average (3.4 per 1000 inhabitants). It is also worth taking into consideration that the total number of physicians in the country has increased by 50 % in the period 2000–2012 (OECD 2011). It is therefore evident that the recent mass migration of physicians from Greece has not had the effect that has been described in the case of developing countries where the number of the remaining healthcare staff is not sufficient for the needs of the population.

The lack of empirical evidence does not, also, allow the validation of the claim that the mass exodus of physicians has led to deterioration in the average quality of the medical staff since, according to this claim, the migrants are on average more capable and ambitious. However, this possibility and its consequences have to be carefully examined. The migration of top scientists, pioneers in biomedical research, is a global phenomenon which seems to have intensified lately in Greece (Trachana 2013). The ominous effects of this phenomenon in the developmental prospects of the countries that lose their top scientific staff have been described extensively in the literature (Ioannidis 2004; Labrianidis and Vogiatzis 2013).

A further issue that has to be discussed is the loss of the national resources that were invested for the education of the migrant physicians. The development of medical education requires significant investments in both infrastructure and personnel. The return on these investments is greatly reduced when a significant number of the medical graduates choose to leave the country of origin and develop their productive potential abroad. Published data for the Greek case are absent. This phenomenon, however, has been extensively studied in the case of migration of physicians from developing countries (Mills et al. 2011).

Physicians and bioscientists who return to Greece after a long stay abroad are a significant human capital, which can contribute decisively to the improvement of the National Health System. The positive consequences of the migration of scientists to the country of origin (brain gain), according to the literature, are mainly attributed to remittances and the strengthening of incentives to produce even more scientists (Clemens 2009; Bhargava 2011). These consequences have no application to the Greek case. However, it is important to note that the scientific staff returning to Greece has significant skills which, under the right circumstances, can contribute to quality improvements in the National Health System, promote scientific research and give a boost to the economic development of the country.

Therefore, strategies which aim to attract and utilize Greek scientists working abroad should be incorporated in a national action plan for the reduction of the emigration of physicians from Greece as outlined below.

Action Plan for Addressing the Mass Emigration of Physicians from Greece

A. Main objectives

- Reduction of uncontrolled emigration of physicians and bioscientists (Brain Drain).
- Promotion of the repatriation of Greek physicians and bioscientists working abroad.
- Utilization of the skills of Greek physicians and bioscientists working abroad as well as of those returning to their homeland.

B. Categories of interventions

1. First category: Medical staff motivation.

To this end, the actions proposed are as follows:

- i. Rationalizing medical payroll, which has been significantly affected recently, within the range determined by the current state of public finances.
- ii. Rationalizing working hours of physicians and implementing the European Union (EU) directives in order to avoid professional burnout syndrome.
- iii. Improving the work environment. Improvements in hospital infrastructure in the long term.
- iv. Ensuring workplace safety.
- v. Increasing physicians' autonomy and responsibilities in all levels by transferring responsibilities to younger doctors (vertical loading). Shifting from a "Head of department centered model" to a more decentralized one to the direction of the British example.
- vi. Creating a demanding work environment. Adoption of mechanisms that promote clinical excellence (Ratanawongsa et al. 2006).
- vii. Incentives and opportunities for continuing medical education (Qian and Lim 2008).
- viii. Encouraging clinical research (Qian and Lim 2008).
- ix. Creating a sense of equity among physicians. Providing equal educational and professional development opportunities and embedding meritocracy (Tsounis et al. 2014).
- x. Predictable career development. Physicians should be given opportunities of career development within the National Health System. Short-term job contracts do not promote job satisfaction and prevent the congruence of the employees' personal goals with the organizational goals (Ifanti et al. 2014).

2. Second category: Medical Education

Undergraduate:

- i. Reduction of the total number of admitted students in medical schools per year.
- ii. Creation of alumni networks.

Postgraduate:

- iii. Changing the way medical graduates are recruited for specialty training. The mandatory time-wasting waiting lists remain one of the major causes of physician emigration (Ifanti et al. 2014).
- iv. Improving the quality of postgraduate specialty training. Searching for better specialty training programs abroad was, even before the start of the recent financial crisis, the main cause of doctors' emigration.
- v. Possibility of further sub-specialization. This requires the further development of adequate tertiary specialized departments and centers.
- vi. Introduction of mechanisms that promote meritocracy at all stages of medical education. Nepotism and gerontocracy have been identified as significant incentives for the emigration of young doctors and bioscientists (Ioannidis 2004 and Wojcik 2004).

3. Third category: Tackling physician oversupply.

The oversupply of physicians in Greece was briefly described above. The relatively high number of physicians in the country not only promotes unemployment and emigration, but also causes induced demand for health services (Siskou et al. 2008). An additional problem remains the uneven geographic distribution of medical staff and the small number of primary care physicians. The actions proposed in this direction are the following:

- i. Careful planning of the present and future population needs for doctors of various specialties, and subsequent determination of the number of students admitted to medical schools and then to specialty training posts in order to achieve long-term workforce balance (Kaitelidou et al. 2012).
- ii. In the short term, staffing of the primary healthcare units by teams of physicians of various specialties.
- iii. Incentives to decentralize the medical population.

4. Fourth category: Changes in biomedical research and technology

According to the OECD, in Greece only 0.44 % of the total employed population was employed in research in 2007, with only a quarter of those in the private sector. The corresponding average in the OECD countries was 0.74 % (Labrianidis and Vogiatzis 2013). The economic crisis that followed had dramatic implications for the funding of research programs and contributed to the emigration of a great

number of bioscientists (Trachana 2013). The actions proposed in this category are associated with a significant financial cost and their implementation should be gradual as their return is expected to be long term.

- i. Cooperative and bridging actions of higher education institutions with the private sector.
 - ii. Promotion of entrepreneurship in Greek universities. Financial support for startups owned by students and researchers.
 - iii. Consolidation of meritocracy.
 - iv. Supporting businesses to develop research departments and staff them with graduates of the corresponding university departments.
 - v. Creating international networks of Greek scientists. This action is included in the fifth category and is analyzed below.
5. Fifth category: Creation of global networks of Greek physicians and bioscientists.

The creation of these networks will stimulate the Greek scientific production, will provide training opportunities for Greek physicians and may serve as a pathway of repatriation.

6. Sixth category: Growth of the market size for physicians.

The demand for health services is expected to increase following global trends as a result of a continuously aging population and the trend for overspecialization in medicine. However, further actions should be taken for the productive utilization of the existing, currently redundant, medical staff.

- i. Further development of health tourism. The global market size of health tourism is estimated to be about 15–20 billion dollars per year. Greece has several advantages compared with other destinations (Doxiadis et al. 2012).
- ii. Development of clinical research/clinical trials. This could provide access to significant EU resources as well as private funding from the pharmaceutical industry.

Conclusions

The emigration of physicians from Greece has intensified during the past few years. This mass exodus represents a significant loss of human capital. A national action plan aiming to control this phenomenon should be drafted and implemented as soon as possible. The goal of this plan should not only be the reduction of the brain drain but also the encouragement of repatriation of Greek physicians and bioscientists working abroad as well as the utilization of their knowledge base and skills.

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The Importance of Family Planning and the Development of a Robust Network of Relative Centers in the Greek National Health System

Konstantinos Paschos, Iordanis Sidiropoulos, Charalambos G. Platis and Petros A. Kostagiolas

Abstract The contemporary Greek family confronts serious challenges nowadays. The rates of unintended pregnancies, abortions, and teenage child-bearing are accompanied by a considerable increase, while the sexually transmitted diseases similarly present a high prevalence. On the contrary, the falling birth rate in conjunction with a decrease in marriages shrinks the Greek nation. A high percentage of people in reproductive age appear to miss the necessary scientifically approved information on contraception matters, reproductive, health and family planning in general. Therefore, action is necessary in order to raise public understanding on birth control, fertility, and safe sexual behavior, as well as reforms in the national health system, primarily in the primary health care, aiming to cope with the aforementioned problems. The prompt, organized and systematic development of family planning centers nationwide may constitute a reliable reaction to the accumulation of risks for the Greek society and its survival. The present study depicts a realistic method for the development of family planning centers within the existing health centers of the Greek National Health System and investigates the current framework and possible future difficulties-obstacles through a SWOT analysis. Furthermore, important guiding views and innovative ideas are suggested, which could contribute to the successful growth of these new institutions and the fulfillment of their role. The fundamental belief that supports this study is that the reforms should target the local societies and most importantly the Greek rural and isolated

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territories, where people have restricted access to organized health facilities and possess limited knowledge on health matters and family planning issues.

Keywords Health care · Family planning · SWOT · Greek National Health System · Contraception

Introduction

The family is a crucial institution in every society in the long human history. It is a fundamental form of organized human life. The most important family aims are human progress in every aspect, the development of cooperation, the confirmation of love bonds, human reproduction, and the raising of human offsprings. The two parents have always been the family mainstay and have created a traditional form of this institution, which has lasted till nowadays.

In modern societies the family confronts unprecedented challenges, which refer to human reproduction, birth control, contraception, undesired pregnancies, sexual revolution. Ethics and traditions change violently as information spreads rapidly worldwide and the family faces a crisis of identity and survival. As the latter constitutes the basic cell of human societies, a global effort of family support is in process (Benson Gold 2008).

The promotion of family planning (FP) has been included in the basic actions of family support by health professionals. This term expresses the conscious separation of two basic biological functions, sexual and reproductive and allows people to attain their desired number of children and determine the time of pregnancies. This is achieved through the use of contraceptive methods and the treatment of infertility. Consequently, FP pursues families with happy parents and desirable-happy children. It secures the well-being and autonomy of women, supporting the health and development of communities.

In Greece, FP centers have been developed primarily as units in hospitals and health centers of the Greek National Health System (ESY), mainly in Athens and big cities. They focused on public education, the performance of Pap tests and mammographies, overlooking the important issues of contraception and child-raising. The limited number of FP centers, their problematic operation, and their distance from rural regions substantially contribute to the high rates of abortions, undesired pregnancies and adolescent pregnancies in Greece nowadays. Radical reforms in family planning are necessary and the implementation of responsible and credible policies in this sensitive area is compulsory for the survival of Greek family and people (Avgenaki and Genitsaridi 2009).

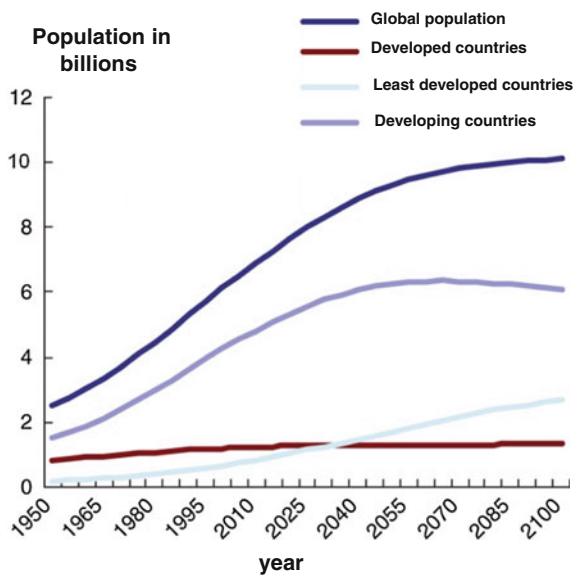
Family Planning in Greece—The Importance of Family Planning Centers

Demographic Data

The global population is increasing steadily; from 2 billion in 1920 it exceeded 4 in 1975 and 7 billion in 2010 (Fig. 1) (Lam 2011). Contemporary data show that the increase is about 2 % per year, while 85 % of births refers to developing countries and is associated with 95 % of the global neonatal mortality and 99 % of maternal mortality. However, in developed countries, such as the USA, adolescent pregnancy is increasing as well, the 78 % of which is undesirable and half of them are artificially ended. This situation depicts a serious problem of defective family planning, contributing to global overpopulation, neonatal and maternal deaths, undesirable pregnancies, and family disintegration (Avgenaki and Genitsaridi 2009; Athanasiadou and Lambraki 2007).

Greece is among the first European countries, as regards abortions and adolescent pregnancy. The majority of abortions are performed privately, without recording, leading to false official statistics, while the actual numbers are believed to exceed 200,000 abortions per year; more than 40,000 refer to adolescent girls. Interestingly, a clinical study by Aretaion and Alexandra university hospitals in Athens (2001–2008) revealed that 1 out of 4 girls aged 14–17 years have undergone an abortion (Ioannidi and Agrafioti 2008).

Fig. 1 Increase of global population (modified). *Source* United Nations 2011



Moreover, there is a high ignorance among young Greek women concerning contraception methods, as only 2–3 % uses the pill, when in other European countries it is used by 30–40 % of women. The most popular contraception method appears to be condoms and the intermittent intercourse, old and rather untrustworthy methods (Halkias 2004; Ioannanidi 2004; Kreatsas and Deligeoroglou 2004).

Advantages of Family Planning—The Development of FP Centers in Greece

FP aims to prepare, schedule, and control births. The main targets are the dissemination of contraception methodology, the decrease of undesirable births and criminal abortions, the sexual education, and the prevention of sexually transmitted diseases. Moreover, birth control concerning parental age, time of birth, the number of desirable children in the family. The benefits are numerous for mothers, children, families, and societies (Avgenaki and Genitsaridi 2009) (Table 1).

It is obvious that many of the existing problems in the Greek societies and families, as well as in other parts of the world, are priorities of FP. Therefore, the development of public structures, which may promote FP is critical. In Greece, there are 41 FP centers today, 12 in the metropolitan area of Athens and Peiraias, 3 in Thessaloniki, 4 in Krete and 22 are located in hospital of other Greek cities (Ioannidi and Agrafioti 2008).

Table 1 Benefits of family planning (Joshi and Schultz 2012; Avgenaki and Genitsaridi 2009)

For the women	For the children	For the family-society
Protection from sexually transmitted diseases (inflammation and cancer of the uterus, death)	Desirable children are better raised	Selection of the time of birth and the number of children
Protection against the risks of an adolescent pregnancy	Limiting neonatal morbidity and mortality	Time for educational and social activities
Protection against the complications of abortions and their dramatic psychological consequences	Better life (financial resources for food, clothing, education)	Limiting low birth rates
Protection against social isolation, emotional pressure, and financial problems		Better and happy family
Desirable pregnancies and children		

SWOT Analysis for the Development of FP Centers

The development of FP centers should be performed in connection with the existing health institutions and infrastructure. The installation in Health Centers, although in a separate building, could be a desirable option. Under this condition, internal and external factors that influence the successful operation of such centers will be analyzed in detail, through a diagnostic SWOT analysis (Table 2) (Wazir et al. 2013; Frost et al. 2012; Benson Gold 2008).

Strengths

FP centers are operational since 1983 (Avgenaki and Genitsaridi 2009). Furthermore, medical and nursing personnel are available through ESY and the available public health services. Additional personnel could easily be recruited, as Greece holds adequacy in highly educated-trained scientists of the health sector.

There is the relative legislation for the operation of such centers, in accordance with international standards, while concurrently the country participates actively in international organizations for FP. Moreover, legislation on contraception and abortions is valid since several decades.

Table 2 SWOT analysis on the development of family planning (FP) centers within health centers in Greece

	Positive	Negative
Internal factors	<i>Strengths</i>	<i>Weaknesses</i>
	Already operating FP Centers	No central planning and coordination
	Available personnel with high education (in ESY and in the private health sector)	The societies have no responsible information on sexual health and contraception
	National legislation in accordance with international laws, on contraception and abortions	The state has not presented the association of demographic and family problems with the level of reproductive and sexual health
	Easy access to health centers for rural populations	The legislation does not motivates child-raising and births
External factors	<i>Opportunities</i>	<i>Threats</i>
	Urban populations appear to know relatively well the issues of sexual and reproductive health	High rates of abortions
	The church and various nonprofit organizations inform young people at school and elsewhere	Population aging Economic Crisis
	The media and the Internet may offer easily accessed, broad information	Risk of isolation for the family planning centers by rural populations

The access to health centers is effortless, especially for rural populations which have no current access to FP centers. Additionally, health centers have less patient burden to treat, in comparison with the hospitals. The separate buildings for FP centers may contribute for the visitors to avoid the feeling of being sick and to maintain the private character of their visit.

Weaknesses

Currently, FP centers operate without a detailed plan, without a modern operational framework and central coordination. Consequently, their role is limited to scheduling of pap tests and mammographies, and abstains from education and guidance of women and parents. Furthermore, the society appears to miss correct and evidence-based information on reproduction, contraception, and sexual health. On the contrary, old-fashioned ethics and perception prevail in rural and isolated Greek regions.

The state disregards the connection between the level of sexual health and the demographic problems. The contribution of defective FP in low birth rates is also ignored, while the legislation does not provide motives that could increase child births in the country.

Opportunities

The dramatic data referring to abortions and low birth rates appear to be known in big cities and urban areas in Greece. Moreover, young people who live in the cities may get information on contraception and sexually transmitted diseases easily through the Internet, as they are familiar with it.

Also, the church, which is a widely respected institution in Greece, presents the demographic problems and the tragedy of abortions in the societies, sensitizing the citizens. Similarly, nonprofit organizations and governmental services visit the schools exposing the problem.

The modern age of information provides numerous means of public education, either through the media (television and radio) or the Internet.

Threats

Although, the Greek population starts to understand the situation, the rates of undesirable births and abortions are very high. Additionally, the aging of Greek population exacerbates the problem. As young people tend to become the minority, FP issues lose their importance. Furthermore, the economic crisis discourages

young people of getting married and even more of having babies. The financial problems may also inhibit the effective development of FP centers.

The ignorance of the aforementioned issues among rural populations may lead to the isolation and obsolescence of these centers in regions far from the big cities.

The Development of Family Planning Centers as Structures of the Health Centers

The methodology and the necessary preconditions for the development of FP centers as structures of the health centers will be analyzed in detail.

Evaluation of the Current Situation

The development of FR centers is necessary in Greece, where problems of adolescent pregnancy, abortions, and low birth rates are crucial. It is obvious that the operating centers cannot provide the desirable services.

Collection and Processing of Original Data

The aforementioned epidemiological data depict a deterioration of the problem of abortions, decrease in birth rates and a growing disruption of the family. Concurrently, the characteristic mountainous geography of Greece, with numerous isolated rural regions and the great number of islands, hinder the transportation of local populations. Therefore, FP centers should be scattered in the entire Greek domain, able to operate independently.

Organizing the Operation of FP Centers

FP centers should occupy a separate building of health centers, with a distinct entrance, at a distance from the access of ambulances and other patients. The purpose is for the visitors to enjoy a certain level of convenience and privacy, in a pleasant and peaceful place. The center should have its secretary office to arrange the appointments and provide any necessary information. It may operate daily, in order to avoid an excessive number of personnel, who should work in shifts.

Each FP center should have its director, who may belong to the administration of the health center. The entire personnel may consist of 9 persons: the medical service

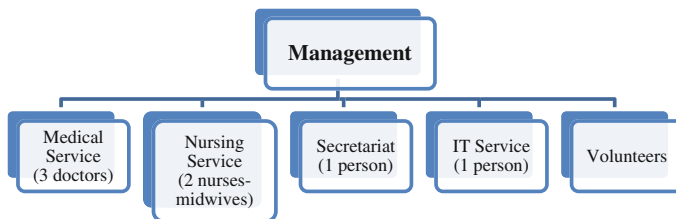


Fig. 2 Organogram on the operation of a family planning center with a health center

(3 doctors), 2 nurses-midwives, secretariat (2 persons), IT service (1 person), section of volunteers. The doctors may be an obstetrician, a general practitioner and a psychiatrist. They may examine patients, inform the public, or send to the hospital or specialized laboratories for special tests (Fig. 2).

Financial Planning

The Greek government has already studied the financial cost for the development of FP centers (Scientific Committee 2008). Furthermore, the recruitment of current employees from the health sector and the exploitation of existing buildings may significantly reduce the cost. However, as the country passes a serious financial crisis, the financial planning and control should be strict and volunteering support from citizens, organizations and the church should be invited and requested.

Aims

The aims of each FP center should be clear and in accordance with the characteristics of the local community. Statistics should be recorded in detail. A realistic aim could be a reduction in adolescent pregnancy up to 50 % during the first 2 years of operation, as well as a similar reduction in abortions, during 2–3 years. Moreover, the prompt public education on contraceptive methods should be a top priority.

Constant Evaluation

Each trimester, data analysis should take place and also, feedback, aim evaluation, and financial cost analysis. The administration should inform the personnel, share responsibilities, reward diligence, and encourage initiatives. Moreover, an annual evaluation of the general work, benefits, and damages should be performed.

Conclusions

Greece confronts the challenge of low birth rate, high rates of abortions, and the disintegration of families. Young people appear to be unaware of these serious problems and have limited information on contraception and sexual health, while women usually face the tragedy of an adolescent pregnancy or abortion. FP is the answer to this social crisis and should be supported by central policies and legislative initiatives (Ministry of Health 2014).

The development of FP centers in the heart of local isolated societies may substantially change the current problematic situation. The existing health centers may become the supportive framework, providing that the whole plan will be activated carefully and the state act systematically and decisively.

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Assessment of Inhabitants' Health Care Needs in Local Community

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and J. Pateras

Abstract Objective: To identify the inhabitants' needs for primary health care (PHC) from the local community in Attiki, Athens. Method: Two methods were used. For the data collection of quantitative analysis a designed, self administered questionnaire was used, based on random sampling, from April to August 2013. The sample size was 430 inhabitants from five municipalities. In the qualitative analysis was implemented a semi-structured personal interviews and content analysis, from February to March 2015. 10 out of 430 respondents were chosen to participate. Results: According to the results of the quantitative analysis, respondents suggested activities of public health (75.8 %), care for disabled and elderly people (74.3 %), prevention and health education (74.3 %) and care for patients with long-term illnesses (65.6 %). The willingness to pay local taxes in order to establish a local primary health networks is moderate (51.2 %). Moreover the results of qualitative analysis showed that the respondents would pay local taxes for PHC services provided by local authorities, if they were be awarded of services quality in advance. Conclusion: Respondents believe that local authorities could organize successfully health prevention, health education programmes and establish home care services for patients with chronic diseases. Inhabitants' willingness to pay local taxes for PHC services is moderate due to the fact that they are sceptical about the quality of service.

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Keywords Health care network · Primary health care services · Local community · Health care needs · Willingness to pay

Introduction

Modern health care systems emphasise the need to enforce the care outside hospitals in the local community and for primary health care in order to increase among other elements patient choice and satisfaction, deliver care closer to people's homes and save money (RCN 2014). Primary health care is a major element of any health care system, since it brings healthcare closer to citizens' place of residence and work, operating as their first level of contact with health care system (Cueto 2004; Souliotis and Lionis 2003). Identifying the local community health needs, it is important to design health policy and services particularly designing the network and accessibility between hospital and primary health care services (Rosenbaum et al. 2013). Primary care providers have to be responsive to the specific needs of local populations in order to move from one size fits all towards a more flexible delivering of services approach (Tarrant et al. 2014). Additionally it is important when designing health services inhabitants have to be involved through opinion expression on their health needs specifically in Local community. The reason is that the key to implement a successful plan to promote the health of the inhabitants and the progress of local community is the participation of citizens (Serapioni and Matos 2014) in shaping relevant strategic plans (Frankish et al. 2002).

The objective of this study is to identify the inhabitants' needs for primary health care (PHC) from the local community in Attiki, Athens. This study is based on a funded project ARCHIMEDES III subproject 45 Methodology of Primary Health Care Services Evaluation in Local Community and Creation of a Manual of Documented Know How conducted by the Department of Business Administration, Division: Health and Welfare Management, of the Technological Institute of Athens funded European Social Fund (E.S.F) Ministry of Education, Lifelong Learning and Religious Affairs 2012–2015.

Participation of inhabitant considered as part of health reform and specifically in the primary health care provided by local community.

H₀ = Inhabitants do not have confidence in covering their health care needs through the organised primary health network by local community.

H₁ = Inhabitants have confidence in covering their health care needs through the organised primary health network by local community.

Methods

Two methods were used in order to compare the inhabitants' opinions about their needs for PHC in local level. Firstly, a quantitative analysis was implemented, aiming to record the needs of PHC from the local authorities. For the data collection was used a designed, self administered questionnaire consisted of three parts. The first part included questions on demographic characteristics of respondents, the second included questions regarding the use and importance of primary health services, the third part records the perceptions of inhabitants as far as the provision and confidence of primary health services in local level and the willingness to pay local taxes for these services. Questionnaires were filled out with personal interviews. Sample selection was based on random sampling, from three Municipalities of Attiki (municipality A, B and C). Specifically, Attiki where 50 % of the Greek population resides, so the sample was representative. Municipality A consisted of an organized municipal health clinic, providing primary health care services in an established network. Municipalities B and C provided limited primary health care services in the specific frail population with a lot of preferences. Among 500 inhabitants, 430 accepted to response in the questionnaire, leading to a response rate of 86 %. The duration of the survey was from April to August 2013.

Moreover, in order to explore in depth the primary health needs of inhabitants, qualitative analysis was implemented. For the data collection was used a semi-structured questionnaire, based on a previous tool of quantitative analysis. Personal interviews were recorded with contemporaneous notes and for their analysis content analysis was used. The sample was derived from the quantitative analysis and the 'purposive sampling' was used. 10 out of 430 respondents were chosen to participate in this analysis. The duration of this survey was from February–March 2015. Finally, the answers of quantitative and qualitative analysis were compared in order to assess the health care needs of respondents in the local community.

Statistical Analysis

Appropriate descriptive statistical methods were used for data description. Calculations of mean values and standard deviation (SD) were used for the description of quantitative and ordinal variables. The frequency distributions were used for the description of qualitative variables. All variables are normally distributed, so for inferential statistical analysis were used parametric tests. Analysis of variance (ANOVA) was used in order to find the statistically significant differences among three populations and was implemented Bonferroni correction as well. The SPSS 19.0 software was used for statistical analyses.

Results

Quantitative Analysis

The majority of the sample was men (50.2 %), married (46.9 %), had university degree (48.9 %), was employee (67.1 %) and had public insurance (88.9 %). The mean age was 39 years old (SD 15) and the mean of monthly income was €1300. Questionnaires were collected from three municipalities of Attiki, where in 14.4 % from municipality A, 42.3 % from municipality B and 42.3 % from municipality C.

With regards to inhabitants' perception about the use and importance of primary health services, 68.1 % of respondents reported that they visit the public outpatient clinics, 58.4 % private clinics and 50.3 % physician of EOPYY (public health insurance). Concerning the perception of respondents about the importance of primary health care services—in 5 level Likert—in three municipalities, a statistically significant difference was found in the choice to visit municipal health clinic ($p < 0.01$). The respondents in municipality A (there is an already organized primary health care network) were more likely to choose municipal health clinic of their municipality (3.51), comparing with respondents living in the municipalities B and C (2.62 and 2.52, respectively). It seems that people are confident to services that are already organized and are reliable. Furthermore, there is no statistically significant difference at the level $p < 0.01$, among the samples of three municipalities as far as public outpatient clinic, outpatient clinic EOPYY, physician EOPYY and pharmacist. These results were extracted based on Bonferroni correction for multiple comparisons.

Moreover, 52.1 % of respondents declared that the local community could provide effective primary health services. Specifically, 75.8 % of respondents, suggesting activities of public health, such as blood donation, screening programs for cancers, awareness of smoking, sexually transmitted diseases etc. 74.3 % reported that caring for disabled and elderly people, prevention and health education will be more effective in local level. In addition, it is important to mention that the majority of respondents (65.6 %) believe that patients with long-term physical and mental illnesses would have better care and access in primary health services, whether the local community was able to provide it. As far as the willingness to pay is concerned, the respondents were asked to state their opinion about local taxes in order to establish a local primary health networks. The majority of the sample (51.2 %) accepted in principle to pay for health care in local level.

Additionally, statistically significant difference was proved as far as the willingness to pay local taxes for local primary health networks ($p < 0.01$). 56.7 % of respondents living in municipality A stated that they are willing to pay €10 for this establishment, in comparison with 38.7 and 40.1 % of respondents in municipalities B and C respectively.

Qualitative Analysis

According to the qualitative results, the majority of respondents chose to visit the public outpatient clinic for their health needs, but they were moderately satisfied with the services provided. As a second choice the respondents visited a private clinic. Regarding the municipal health clinics, the sample is asked if is aware of the provided health services in local level and if is willing to visit it. The answers were different proportionally to the municipality. Specifically, respondents, living in municipality A, stated that they know the provided local health services and they believe that their municipality providing health care closer to home, they would visit them. However, respondents living in municipalities B and C declared that these health services concern only for the frail groups and they will visit it in case of first aid. Additionally, the sample believes that the local community could provide effective and efficient primary health services, if there is a designed, organized and integrated program, as well as financial resources. This perception is based on that the local community is in a better position to have knowledge about local needs and resources in relation to health, the kinds of services and how these services should be delivered. The main reasons in which respondents will be confident to these services are the decentralization in relation to public outpatient clinics and the phenomenon of waiting lists.

Via personal interviews, it was highlighted that local community could provide prescribing and medical advice in order to decongest the health system and decrease the bureaucracy. Also, the sample declared the significance of public health, which is included in responsibilities of local community. As far as the willingness to pay local taxes is concerned in order to organized local primary health networks, all participants stated they would pay €5–€10, however, they would require to be informed about planning and setting priorities about health services in advance.

Discussion

By taking the above issues into consideration, Public hospitals and Outpatient Departments are the main providers of primary health care services that people feel confident in giving them with a primary health care service. This means that health care system in Greece is still based on delivering general health care in hospitals (secondary and tertiary health care services) burdening their already complex service (Pierrakos and Yfantopoulos 2007; Pierrakos et al. 2013). Secondary and tertiary care services are more complex and specialized (Shi 2012), and on the other hand, patients-focused primary care services reduce utilisation of acute hospital health care facilities (Bird et al. 2007).

Regarding the willingness to pay and receive services provided by local community authorities, respondents in municipality A with well organized primary health care services network, are more willing to do so than respondents of other

municipalities. Respondents are willing to pay the amount of €10 per month as a local tax which at the same level as a study in Central and Eastern Europe (Danyliv et al. 2014). According to another study, inhabitants have confidence and are willing to pay, if local community authorities can offer them reliable health services (Allen et al. 2015). Inhabitants are willing to pay local taxes, when they feel that they receive directly the services that they pay for as long as under the circumstances reliable services will be provided (Bidgood 2013). In a study regarding the patients' willingness to pay, it was found that there was a proportional relationship between payment and quality of service (Pavlova et al. 2002).

Conclusion

Respondents believe that local authorities could organize successfully health prevention, health education programmes and establish home care services for patients with chronic diseases. Inhabitants' willingness to pay local taxes for PHC services is moderate due to the fact that they are sceptical about the quality of service.

Acknowledgments This study is based on a funded project ARCHIMEDES III subproject 45 *Methodology of Primary Health Care Services Evaluation in Local Community and Creation of a Manual Of Documented Know How* conducted by the Department of Business Administration, Division: Health and Welfare Management, of the Technological Institute of Athens funded European Social Fund (E.S.F) Ministry of Education, Lifelong Learning and Religious Affairs 2012–2015.

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Part VIII

Innovation and Knowledge-Based Entrepreneurship

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Description:

There is no doubt that today we live in a transition period whose main features are the penetration of new technologies, the international competition, the rapid flow of information and the creation of new business opportunities through the expansion of 'globalization'. The strong uncertainty in the new environment forms a new era of business activities and investment opportunities as well. The dominant element of competitiveness period is the innovation and its close relationship with both the scientific progress and the total of economic sectors. In general, the sectors which produce high-technology products and services have entered into a growth phase and they can form new sources of development for the Greek economy in total. Every new firm can be a driver of growth, innovation and social welfare. Given the fact that a large percentage of new small firms quit their operation a few years after their creation (Knaup and Piazza 2007; OECD 2014), innovation can consist for them a mean for their longterm progress through the economic growth and development they are able to achieve (DeJong and Marsili 2006; Arvanitis and Stucki 2012; Protogerou et al. 2014). The achievement of innovative results is affected by a number of factors such as the characteristics of the founder or the founding teams of enterprises or of the knowledge required during their setting up or acquired during their operation. The large investments which aim at the creation of new knowledge, such as research and development, do not lead automatically to innovation and economic growth. According to Carlsson et al. (2007), (a) the factors that facilitate or obstruct the conversion of knowledge to economically exploitable knowledge and (b) the presence or lack of a mechanism that will enable this conversion, determine significantly the efficiency of transformation of knowledge to innovation and new economic activity. The knowledge-based entrepreneurship may be such mechanism.

The Role of Marketing Interventions in Fostering the Diffusion of Green Energy Technologies

Charalampos Tziogas, Naoum Tsolakis, Patroklos Georgiadis and Charalampos Yakinthos

Abstract The energy landscape of the twenty-first century is dominated by ramifications necessitating critically low carbon emissions and efficient utilization of renewable energy sources. Therefore, in order to support the transition to the green energy era a myriad of policies is drafted and implemented with the most notable being the “20-20-20” European directive. Therefore, effective marketing strategies could assist in the transition from fossil fuel based to clean energy production technologies. Thus far, the existing body of marketing literature tackling the adoption of green energy systems is rather limited. In addition, innovation diffusion models in the energy sector are case-dependent and can only provide myopic managerial insights. To that end, well-designed intervention policies in the marketing domain could stimulate the environmental awareness of consumers and further foster the diffusion of renewable sources in the energy sector. Hence, in this study we propose a system dynamics (SD) methodological approach to assess marketing interventions that could promote the diffusion of clean energy production. Such modeling could provide important managerial insights with regard to the merit of effective marketing operations towards a robust and sustainable future in the energy landscape.

Keywords Energy · Green technologies · Marketing interventions · System dynamics

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Introduction

Global warming and climate change have accentuated international environmental concerns, thus enhancing consumers' ecological attitude toward environmental friendly products and services (Fuentes 2015). To that end, in order for organizations to harness the environmental sensitivity dynamics of local and international markets in an efficient and profitable manner they continuously elaborate innovative "green" marketing strategies to communicate their environmental sustainability initiatives to consumers. In addition, main aim is to shift stakeholders' mindset toward environmental friendly operations throughout the entire products' and services' value chain (Laari et al. 2015). Specifically, environmental concerns stem from the increased CO₂ emissions related to conventional energy sources hence necessitating the growth of cleaner energy options to meet the global demand for renewable energy (Edeseyi et al. 2015).

However, despite the key role of renewable energy sources toward ensuring environmental sustainability in the European Union, the share of clean energy supply to the total energy consumption in the respective region is estimated to only 8 % (Eurostat 2010; Menegaki 2012). The latter observation can be attributed to the significant required investments in infrastructure and the inherent consumers' reluctance in directly or indirectly paying a higher price for the supply of green energy (Sundt and Rehdanz 2015).

To that end, marketing strategies and programmes could have a positive impact on shifting the consumers' preference and willingness to pay toward clean energy options (Carrigan and Attalla 2001; Harper and Makatouni 2002; Kim et al. 2013; Leonidou et al. 2010; Schröder and McEachern 2004), thus promoting investments in the field along with the considerable adoption of renewable energy sources in the energy production mix. Nevertheless, existing studies fail to capture the complex nexus of marketing dynamics governing the energy market. To that end, the system dynamics (SD) methodology could be elaborated to provide a realistic representation of the total marketing effect and its component factors in the diffusion of clean energy production in the respective market.

The structure of our paper is as follows. In Sect. 2 we provide a rather short review of the literature regarding the marketing of clean energy and consumers' traits shaping their willingness to pay for the supply of clean energy. Following, in Sect. 3 we propose a SD model for the diffusion of green energy in the market, while in Sect. 4 we present preliminary numerical results. Finally, Sect. 5 discusses the outcomes of our study and concludes with future research implications.

Literature Review

Existing research on the marketing of green products and services focuses on both intrinsic and extrinsic factors influencing consumers' purchasing decisions. Marketers develop their proposed strategies and programmes based upon these

factors. Intrinsic factors refer to the psychological values of consumers that shape their attitude toward clean energy. Considering that the aforesaid psychological traits are rooted on the social and demographic background of consumers, marketing practices focusing on the consumers' intrinsic characteristics aim only at amplifying their purchasing attitudes. Indicatively, it is documented that marketing effects upon green energy tend to be more evident in case consumers have high income (Diaz-Rainey and Ashton 2011), are highly educated and are better informed about energy issues (Ozaki 2011). On the other hand, extrinsic consumer characteristics can be influenced by marketers through effectively communicating information and educating prospective consumers on green energy issues (Herbes and Ramm 2015).

System Dynamics Framework

In this section, we present a modeling approach for investigating the role of marketing in the diffusion of clean energy technologies in terms of the total consumed energy generated by renewable energy sources. Specifically, we solely focus on the impact of marketing practices on the total adoption rate of clean energy. In this context, we utilize the Bass diffusion theory describing the adoption of a new product or service in time. Thereafter, capitalizing on the study provided by Toka et al. (2014), we propose a SD modeling framework that could be employed by marketers as a strategic decision-making tool for investigating the impact of several marketing interventions on the adoption of renewable sourced energy by consumers.

Developed by Jay W. Forrester about five decades ago, the theory of SD is a tool for designing policies in order to manage complex business problems. The dynamic complexity arises because systems are dynamic, tightly coupled, governed by feedback, nonlinear, history-dependent, self-organizing, adaptive, counter-intuitive, policy-resistant, and characterized by trade-offs (Sterman 2000). The structure of a system in SD methodology is based on causal loop diagrams, where a causal loop diagram represents the major feedback mechanism governing the system under study. These mechanisms have either a negative (balancing loop) or positive (reinforcing loop) effect. A balancing loop exhibits goal-seeking behavior: after a disturbance, the system seeks to return in an equilibrium state. In a reinforcing loop an initial disturbance leads to further change, suggesting the presence of an unstable equilibrium. The direction of the influence (causal links) displays the direction of the effect. A positive (+) or a negative (-) polarity demonstrates the direction of the effect. In positive causal links, the variables change in the same direction, having positive or negative impact (Sterman 2000). Finally, a negative causal link demonstrates a change at the opposite direction.

System Under Study

We consider an energy market (in MWh) that entirely consumes a fixed amount of energy generated entirely by conventional production technologies. We expect to completely satisfy the energy demand of the target market by employing renewable energy sources over a time horizon of 10 years. Furthermore, we assume that the adoption of clean energy requires significant investments, thus the adoption rate represents the expected MWh generated by clean technologies for the first time. The adoption rate of clean energy represents the total marketing effect and is influenced by three factors, namely: (i) advertising effectiveness, (ii) word-of-mouth effect, and (iii) market environmental awareness in terms of tons of CO₂ emissions.

Model Description

The proposed modeling framework is developed by applying the SD theory. The causal loop diagram encapsulating the overall diffusion mechanism is illustrated in Fig. 1. The depicted mechanism encapsulates the idea of the size of the energy market in terms of energy demand (in consumed MWh). Our aim is to investigate the effect of marketing efforts toward replacing the conventionally generated energy by clean energy production in a fixed market.

Our model captures the marketing effect (ME) dynamics in the energy market resulting from three identified feedback loops capturing environmental awareness, word-of-mouth and market saturation factors respectively.

First, the environmental awareness reinforcing loop (R1) embraces the CO₂ emissions (in tons of emissions) and the market environmental sensitivity (in MWh) factors. The greater the amount of energy generated by conventional sources, the higher the CO₂ emissions in the atmosphere. Following, the increased concentration of CO₂ emissions stimulates consumers' environmental sensitivity thus enhancing the effectiveness and the need for potential marketing practices regarding the supply of clean energy. Second, stimulated by the positive environmental impact of green energy production systems, the word-of-mouth concept is activated thus having a positive marketing effect (reinforcing loop, R2). Finally, given the fixed size of the energy market under consideration, market saturation decreases the effectiveness of advertising thus limiting the adoption rate of green energies (balancing loop, B).

Research Results

In this section we demonstrate the behavior of the proposed model through an indicative numerical example. At first, Fig. 2 presents the fixed size of the considered energy market that is initially satisfied by conventional energy production systems. Following, through the strategic horizon of 10 years we observe the

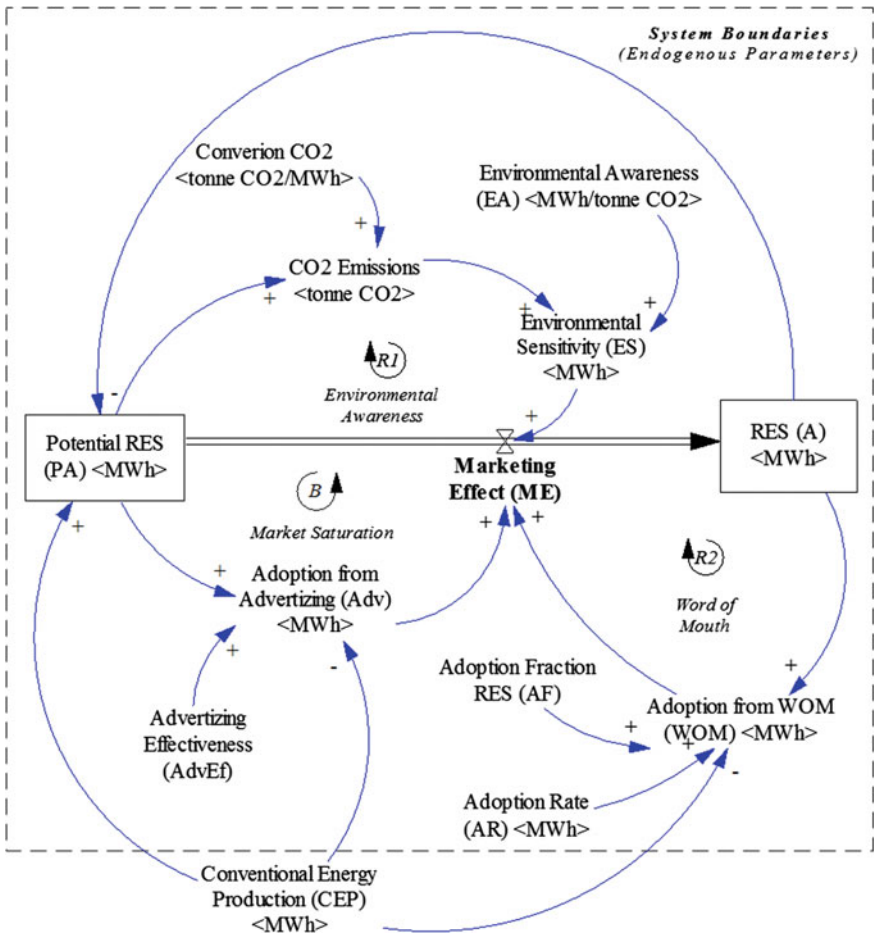


Fig. 1 Causal loop diagram of the system under study

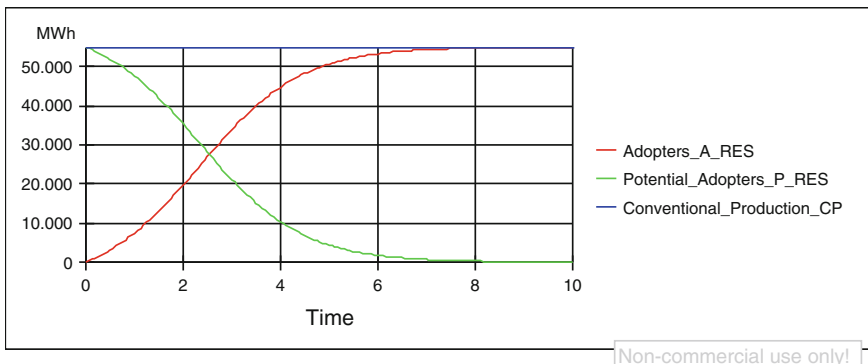


Fig. 2 Total energy adoption

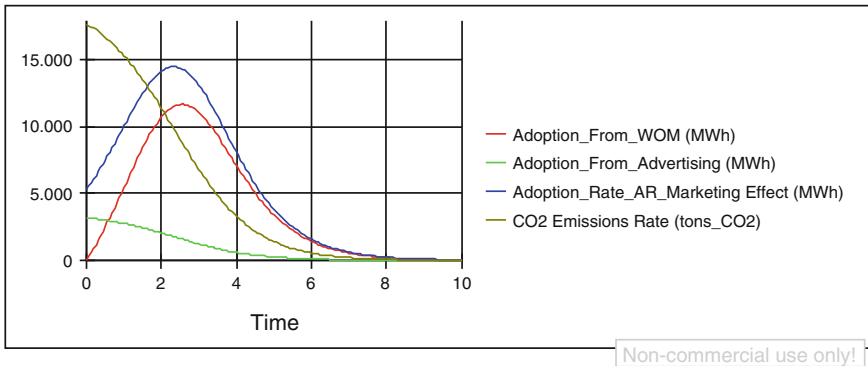


Fig. 3 Energy adoption rates

annual trend in energy demand satisfaction (in MWh) through utilizing both conventional and green energy production technologies. Furthermore, the clean energy adoption rate (in annual MWh) corresponding to each of the identified marketing factors is presented in Fig. 3.

Conclusions

The design and management of marketing operations could positively affect the adoption of renewable energy sources in the energy sector. Particularly, investments have to be directed toward the ecological education of the targeted market and the dissemination of information about the environmental and social merits of clean energy (Anda and Temment 2014; Wassermann et al. 2015). Therefore, our proposed SD methodological approach could be used as a decision-making tool to monitor the impact of marketing operations to the diffusion of green energy in the respective market, therefore providing managerial implications for a robust and sustainable future in the energy sector.

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Analysis of the Characteristics of Knowledge-Intensive Firms in Greece

Vasilis Tassis, Theodosia Tassi, Spyros Zois, Stella Souchla and Giorgos Maroulas

Abstract Based on a longitudinal study using structured survey technique in high-tech sectors, this paper addresses how innovation and the educational attainment of founder (or founding team) and employees affect the knowledge-intensive firms (KIF from now on) in Greece. In a treatment of KIF we are interested in how the two above mentioned factors correlate with the establishment of the firm, the operation and the strategies which are followed in the setting up stage of the company.

Keywords Knowledge-based entrepreneurship · High-technology · Innovation · Founding teams · Greece

Introduction

This paper summarizes results of a survey of 100 high- technology firms in Greece. These firms characterized for the significant knowledge intensity in their activities, which is a dominant component of a KIF (Hirsch-Kreinsen and Schwinge 2011; Bosma 2010; Malerba and McKelvey 2010). That is, these firms are transforming

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knowledge into new or significantly improved goods and services that may hit the market. They are still firms that exploit innovative opportunities in various fields and achieve through their strategy a competitive advantage (Kanellos 2012a, b).

One of the main objectives of this research is to study the characteristics of the founders on issues related their educational background and how innovation contributes and affects the building up of the company.

The investigation of these characteristics is extremely important as it is related with the multifaceted nature of the knowledge possessed by knowledge entrepreneur (KE from now on). KEs with the proper innovating spirit, through their successful business performance, contribute positively to the economies involved (Cooke and Porter 2007; Szalavetz 2007).

Description of the Sample

During 2012 we administrated an extensive questionnaire to the owners in a sample of 1141 young firms in Greece. The questionnaire consisted of 22 questions divided into four categories: (a) information about the entrepreneur, (b) information about the strategy of the firm, (c) information about the innovation performance of the firm and (d) information about the growth of the firm.

The sectors have been classified according to the Statistical classification of economic activities in the European Community—NACE Rev. 1.1, and grouped in three industries: (1) high-technology, (2) medium-high-technology and (3) high-tech knowledge-intensive services (Table 1).

Table 1 Selected sectors

Manufacturing industries	NACE Rev 1.1 codes
High-Technology (HT)	24.4 Manufacture of pharmaceuticals, medicinal chemicals and botanical products;
	30 Manufacture of office machinery and computers;
	32 Manufacture of radio, television and communication equipment and apparatus;
	33 Manufacture of medical, precision and optical instruments, watches and clocks;
	35.3 Manufacture of aircraft and spacecraft
Medium-High-Technology (MHT)	24 Manufacture of chemicals and chemical product, <u>excluding 24.4</u> Manufacture of pharmaceuticals, medicinal chemicals and botanical products;
	29 Manufacture of machinery and equipment n.e.c.;
	31 Manufacture of electrical machinery and apparatus n.e.c.;
	34 Manufacture of motor vehicles, trailers and semi-trailers;
	35 Manufacture of other transport equipment, <u>excluding 35.1</u> Building and repairing of ships and boats and <u>excluding 35.3</u> Manufacture of aircraft and spacecraft
High-Tech KIS (HT KIS)	64 Post and telecommunications;
	72 Computer and related activities;
	73 Research and development

Table 2 Description of sample

Manufacturing industries	All firms	Sample
HT	71 (6.2 %)	10 (10 %)
MHT	366 (32.1 %)	24 (24 %)
HT KIS	703 (61.7 %)	66 (66 %)
Total	1141	100

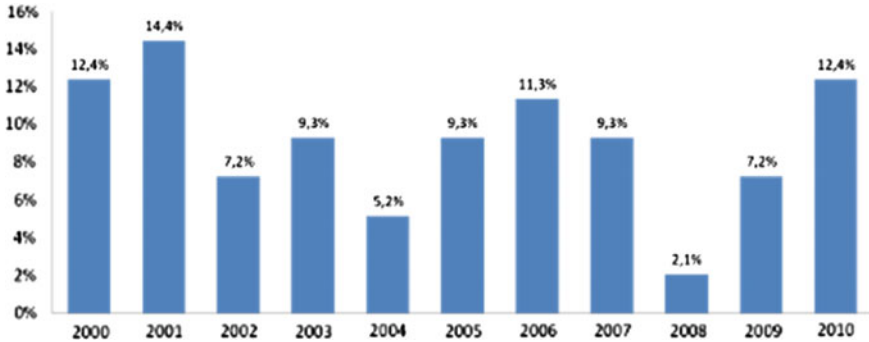


Fig. 1 Year of establishment

After one email follow up, 100 complete surveys were returned, from the following sectors: (Table 2).

A prerequisite for the selection of the sample was beyond the sector in which the firms operate, the year of establishment that should be between 2000 and 2010. In Fig. 1 we see the year of the firms which responded.

As observed, most firms were founded in the period 2000–2006. In this period there was a strong momentum for the high-tech sectors (IOBE 2008). Several firms also created amid the financial crisis period, i.e. after 2008 (21.7 %).

Also, firms are mostly micro firms (<10 employees), while small firms (<50 employees) constitute 34 % of the sample (Fig. 2).

Fig. 2 Number of employees

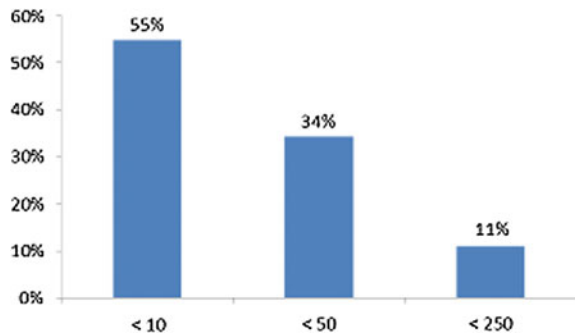
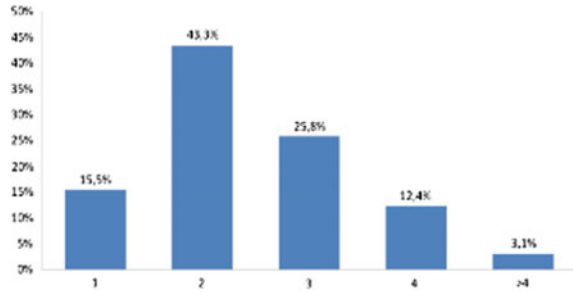


Fig. 3 Number of founders

Finally, firms usually have founding team of 2 or 3 members and only 15.5 % consists of only one founder (Fig. 3).

The Characteristics of KE and Affection to Company's Functions

According to Schumpeter (1911, 1942), the recognition and the realization of new economic opportunities is part of the entrepreneurial function. Schumpeter focuses on innovation, subject to the risk and uncertainty which are part of entrepreneurial opportunity.

This risk is greatest in high-tech sectors, and entrepreneurs take the risk, which is part of the innovation process. Entrepreneurs invest into new technological knowledge and start a new venture around a new product. Therefore, the role of KEs is to exploit knowledge-based opportunities and develop them into new products and technologies (Audretsch et al. 2008).

A KE must have sufficient staff to knowledge capital which can create value and wealth of knowledge. Andersson and Hellerstedt (2009) define KE as the person who creates value through the unlimited resources of knowledge introduced into markets, in order to progress in society, economy and environment. As one of the most basic features of the economy based on knowledge is the ability of firms to create new knowledge, KEs are seeking on people who have common features with those, such as highly qualified, creative and entrepreneurial spirit (Kanellos 2012a, b).

In the following sections we will see detailed information about how the educational attainment of KE and the innovation affect factors refer to a company like incentives for setting up a business, strategies, sources of knowledge, recognition and exploitation of opportunities and contribution of networks in the operation of company.

Table 3 Incentives for setting up a business

Firm type	Incentive				
	Savings	Livelihood	Increase income	Scientific research	Market knowledge
Innovative	No	No	No	–	–
No innovative	Yes	Yes	Yes	–	–
High educated founders	–	–	–	Yes	–
Low educated founders	Yes	–	–	–	Yes

Incentives for Setting up a Business

KIF which innovate don't use their founders' savings as incentives in their start up steps. Furthermore the above mentioned enterprises are not established by people for livelihood reasons and for an expectation of increased income. KIF, which founders have high educational attainment, owe their creation to the exploiting of the results of their scientific research of their institutions. In contrast, firms, whose founders have very low educational attainment, start to operate with the incentive of founders' saving and their perennial knowledge of the market. Reference is made in the Table 3.

Strategies

Innovation is an integral component of entrepreneurship and can be considered as a tool of the entrepreneur in order to gain business advantage over competitors (Kanellos 2013). KIF, which innovate, follow the strategy of increasing sales by offering new products or services as opposed to companies with founders with low education attainment, which increased their market share by offering the same products and services in existing markets as it is shown in Table 4.

Table 4 Strategies

Firm type	Strategy	
	Increased income offering new product or service	Increased market share by offering the same products and services to existing markets
Innovative	Yes	–
Non innovative	No	–
High educated founders	–	No
Low educated founders	–	Yes

Table 5 Sources of knowledge

Firm type	Source of knowledge					
	Competitors	Fairs and conventions	Internal of the enterprise	Academic institutions and research institutes	Research programs	Scientific magazines
Innovative	Yes	Yes	–	–	–	–
No innovative	No	No	–	–	–	–
High educated founders	–	–	Yes	Yes	Yes	Yes
Low educated founders	–	–	No	No	No	No

Sources of Knowledge

As regards the sources which help KIF to improve their knowledge the research shows that innovative companies keep an eye on what their competitors do and in this way try to improve their products. Moreover these companies participate to many fairs and convention to enhance their knowledge level. Regarding the enterprises with highly educated founders, the main sources of knowledge are the internal of the company, the cooperation with academic institutions and research institutes, the participation in research programs and finally the information from scientific magazines. Reference is made in the Table 5.

Recognition and Exploitation of Opportunities

It is extracted from this research (ref. Table 6) that Knowledge based firms which are innovative too and with highly educated founders take advantages of the opportunities which are offered during their operational time in contrast to non-innovative ones with low educational attainment of their founders.

Table 6 Recognition and exploitation of opportunities

Firm type	Recognition and exploitation of opportunities	
	Firm conform quickly to changes in demand	The company has the flexibility to produce differentiated products and services
Innovative	Yes	–
Non innovative	No	–
High educated founders	–	Yes
Low educated founders	–	No

Table 7 Contribution of networks in the operation of company

Firm type	Contribution of networks in the operation of company			
	Recruitment of highly qualified staff	Development of new products and services	Understanding of customers' needs	Settlement of tax and legal subjects
Innovative	Yes	Yes	–	–
Non innovative	No	No	–	–
High educated founders	Yes	–	No	No
Low educated founders	No	–	Yes	Yes

Particularly, innovative enterprises conform quickly to change in the demand of the market and the high education of their owners helps them to have the flexibility to produce differentiated products and services compared with the competition.

Contribution of Networks in the Operation of Company

The networks constitute groups of social and business relations that are developed by founders and that can be activated in order to support the companies' operations.

In terms of small-medium companies which need to survive within a globalized market, good organization, management, and knowledge sharing, in other words the creation of knowledge networks are the only ways to survive (Kanellos and Papadimitriou 2012).

Networks, in where the KIF participates, play in an important role in the operation of the company. These networks help innovative enterprises to recruit highly qualified staff and develop new staff and products something which is not very common in non-innovative firms.

The contribution of the networks in firms with low educated founders allow them to understand the customers' needs and settle their tax and legal subjects better than those with highly educated owners which can contrariwise recruit highly qualified staff.

Reference is made in the Table 7.

Conclusions

The findings of the analysis can be summarized as follows:

- The majority of firms, which are innovative, have not as an incentive for their setting up the savings of their founders, the livelihood and the hunting of an increased income.

- Low educated founders start their businesses because of their savings and their multiannual knowledge of the market.
- The main strategy which is followed by innovative firms is to increase their income by offering new products and services while those ones, with low educated founders, tend to increase their market share by offering the same products and services to the existing markets.
- The main sources of knowledge for innovative enterprises appear to be their competitors, fairs and conventions.
- Companies with high educated founders improve their knowledge from the internal of the company, with the cooperation with academic institutions and research institutes, with the participation to research programs and finally with the information from scientific magazines.
- Innovative firms conform quickly to changes in demand of the market and high educated founders help their companies to have the flexibility to produce differentiated products and services.
- Networks help innovative enterprises to recruit highly qualified staff and develop new products and services.
- The contribution of the networks in firms with low educated founders allows them to understand the customers' needs and settle their tax and legal subjects better.

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A Comparative Analysis of Knowledge-Based Firms in High-Tech Sectors and Knowledge Intensive Business Services

**Lefteris Papadimitriou, Konstantinos Mpartzeliotis, Stavros Nikas
and Mike Vessala**

Abstract This paper attempts a comparative analysis between firms operating in high-mid manufacturing sectors and knowledge intensive business services. Based on a longitudinal study using structured survey technique in these sectors, we selected specific variables linked to knowledge intensiveness of firms and the innovation results achieved.

Keywords Innovation · Entrepreneurship · High-tech · Manufacturing · Greece

Introduction

This paper aims at the research of new enterprises which are activated in the Greek market and in the determination of the grade in which these enterprises are based on knowledge/networking and on innovation. More specifically, it is attempted the comparison between the field of industry in high and mid technology and the field of rendering of services in high technology based on knowledge—networking and on innovation, and its analysis concerning the different characteristics of enterprises, such as the educational level/standard of their employees and the ways of innovation production, etc. Furthermore, this paper summarizes results of a survey of 209 high—technology firms in Greece. These firms characterized for the

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significant knowledge intensity in their activities, which is a dominant component of a knowledge-based firm (Groen 2005; Papadimitriou 2012).

Description of the Sample

During 2012, we administrated an extensive questionnaire to the owners in a sample of 1162 young (founded from 2000 to 2010) firms in Greece. The questionnaire consisted of 22 questions divided into four categories: (a) information about the entrepreneur, (b) information about the strategy of the firm, (c) information about the innovation performance of the firm, and (d) information about the growth of the firm.

The sectors have been classified according to the Statistical classification of economic activities in the European Community—NACE Rev. 1.1, and grouped in three industries: (1) high technology, (2) medium-high technology and (3) high-tech knowledge intensive services (Table 1).

For our analysis, we further categorized these enterprises and we divided them in two categories: (a) The enterprises which bestir in the field of high—mid manufacturing and (b) in the enterprises which activate in the field of high technology services (Table 2).

Table 1 Selected sectors

Manufacturing industries	NACE Rev 1.1 codes
High-Mid manufacturing	24.4 Manufacture of pharmaceuticals, medicinal chemicals and botanical products;
	30 Manufacture of office machinery and computers;
	32 Manufacture of radio, television and communication equipment and apparatus;
	33 Manufacture of medical, precision and optical instruments, watches and clocks;
	35.3 Manufacture of aircraft and spacecraft
	24 Manufacture of chemicals and chemical product, <u>excluding 24.4</u> Manufacture of pharmaceuticals, medicinal chemicals and botanical products;
	29 Manufacture of machinery and equipment n.e.c.;
	31 Manufacture of electrical machinery and apparatus n.e.c.;
	34 Manufacture of motor vehicles, trailers and semi-trailers;
	35 Manufacture of other transport equipment, <u>excluding 35.1</u> Building and repairing of ships and boats and <u>excluding 35.3</u> Manufacture of aircraft and spacecraft
High-Tech KIS (HT KIS)	64 Post and telecommunications;
	72 Computer and related activities;
	73 Research and development

Table 2 Description of sample

Industries	All firms	Sample
HT—Mid industries	442 (38 %)	81 (39 %)
HT KIS	720 (62 %)	128 (61 %)
Total	1162	209

Table 3 Data analysis of research

Total amount of firms	1162
Answered	209
Call back	246
Wrong number	123
Closed firms	71
Answers ratio	19 %

For the collection of concrete information from the enterprises which ultimately composed our sample and took part in the field of research, in order to carry out the comparison of the knowledge intensity enterprises for the two branches, a research was held with structured interviews. The interviews took place exclusively with the enterprise’s founders or, in the case they were absent or it was unfeasible to approach them, with the legitimate delegates of the enterprises.

In conducting the survey, a total of 1162 companies were approached as mentioned and successfully completed 209 questionnaires (Table 2). However, 123 companies’ contact numbers were invalid or inactive which resulted in the impossibility of tracking alternative contact number while in 71 cases the person who answered said that the company has thus closed therefore made no point continuing the interview. Specifically, statistics research regarding the extent of the response is in the table below (Table 3).

Knowledge of Firms

Education

The human capital comprises immaterial income of an enterprise because the employees become part of the knowledge which possesses the enterprise through their experiences, their behavior, and their capabilities (Nonaka and Takeouchi 1995; Cooke and Porter 2007). Therefore, the educational level of the founders of an enterprise comprises the main factor of the knowledge which the enterprise possesses, upon which it develops. The founders of enterprises which activate in the field of high technology services have higher educational level compared to those who work or activate in industry of high-mid technology manufacturing (Fig. 1). Another clue that strengthens the above view is the results of Fig. 2. In this figure is presented the educational level of these enterprises which produce innovation.

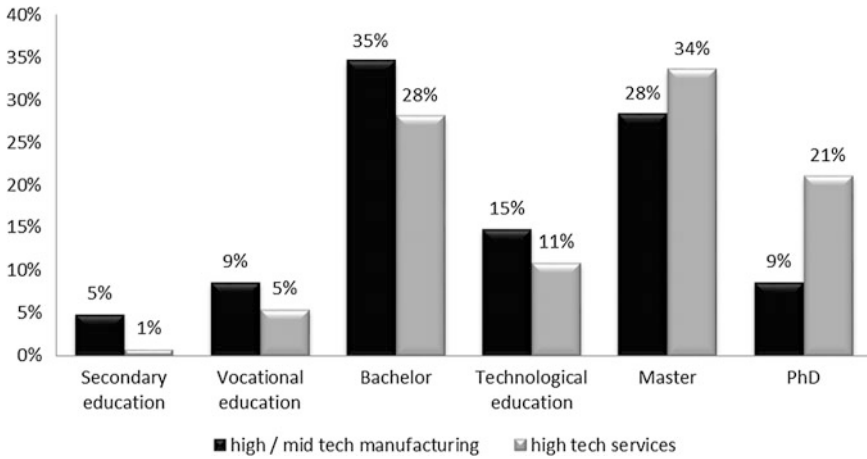
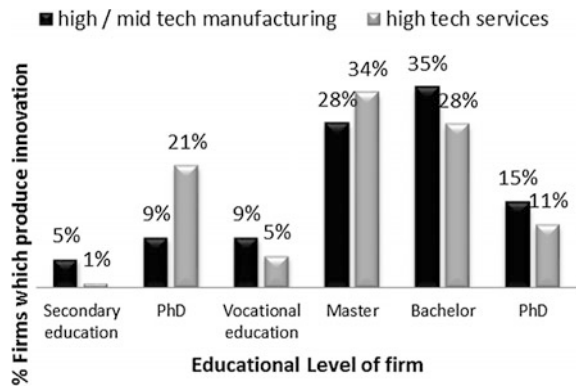


Fig. 1 Highest educational attainment of founders

Fig. 2 Firms (%) which produce innovation/ educational level of firm



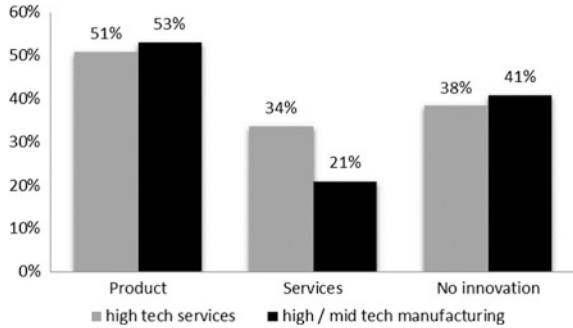
We notice that especially for the sector of the services of high technology, 83 % of the enterprises which produce innovation have been founded by people who are in possession of degree or higher (post-graduate or doctoral).

Innovation

Innovation Inputs

For the contemporary enterprises, innovation composes prerequisite for their survival and their development. This is the reason why their activity concerning the development of new products has taken bursting dimensions. Businesses recognize that under the modern market and competition circumstances, the reliance of the

Fig. 3 Type of innovation inputs



sales exclusively on existing products and the use of the same methods and procedures lead slowly but definitely to pinning (Malerba and McKelvey 2010; Kanellos 2013).

In Fig. 3 are referred the percentages of the enterprises which have presented some innovations of a product or an innovation of work and those which have not produced any innovation.

Origin of Innovation

Differences between the two branches are located in the ways in which the enterprises produce innovation (Fig. 4). So, we notice that the branch of high technology services produces innovation mainly through research by developing the results which come to light or through several cooperation which businesses develop inside the field. In industry of high-mid technology manufacturing, it is noticed that innovation is mainly produced from the development of prepared technology such as base management systems or equipment which is imported from foreign countries. Also, another

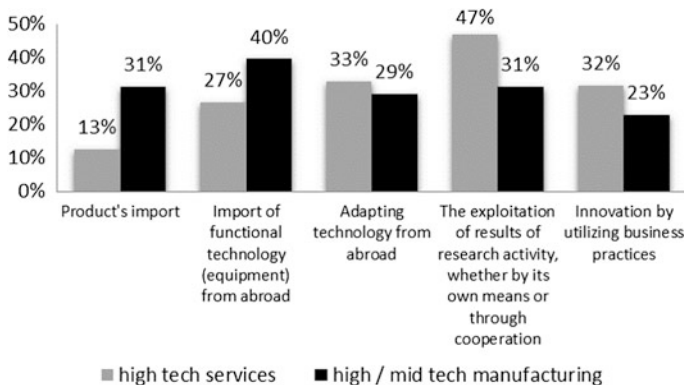


Fig. 4 Sources of innovation

indicator that agrees with the ways in which each field produces innovation, and mentioned above, is if we compare the percentage of the businesses that import products from abroad in the two fields. In the industry of high-mid technology manufacturing, 31 % of the enterprises accomplish import of products, while the equivalent percentage of rendering of services in the field of high technology is just 13 %. It is also worth mentioning, that 22 % of businesses that render services of high technology produces innovation that is new worldwide, as opposed to the field of industry of high and middle technology, where the equivalent percentage is 8 %.

Conclusions

The findings of the analysis can be summarized as follows:

- The percentage of the founders of the enterprises for both fields who has at least one diploma from third degree education is over 64 %.
- The founders of the enterprises activated in high technology supply field have higher educational level compared to those of high-mid technology industry field. 35 % of the founders have a post-graduate or a doctoral in his/her possession. The corresponding percentage in the field of industry is 27 %.
- 83 % of the businesses which activate in high technology supply field have been founded by people who possess university degree and above, while the equivalent percentage for the field of high-mid technology manufacturing is 72 %.
- The high technology supply field produces innovation through inquiring procedures or through cooperative procedures with other companies (47 %), while a very low percentage of the field of the businesses import products from abroad (13 %).
- The high-mid technology industry field produces innovation mainly through the import of prepared technology from abroad (40 %). Also the same field accomplishes import of products in high percentage (31 %).

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Reporting of Human Capital as One of the Corporate Social Responsibility Areas

Wojciech Koziol

Abstract Human capital is one of the most important organization resources and, as shown by numerous studies, its role in organizations is constantly growing. This leads to many important consequences for the functioning of modern organizations. One of them is a growing importance of information on the value and structure of human capital in organizations. This information can have a managerial and reporting dimension in accounting. The first one seems to be clear, its scope of implementation is motivated by the individual's need to use resources in an organization effectively. A more complex matter is a reporting aspect, mainly due to the demand for information from stakeholders, particularly the necessity of a fair settlement with the human capital owners. The lack of legislation in this regard and the essential social nature of the problem makes the reporting of employees human capital together with the level of its remuneration part of a Corporate Social Responsibility (CSR) area. The aim of the article is to provide an outline of the human capital periodic reporting model. In its first part the paper presents important substantive aspects of the CSR functioning in organizations, with particular emphasis on CSR reporting. Next, the original measurement model of the individual human capital is specified together with the principle of fair payment to the employees. The human capital measurement and payment model, takes into account the effects of natural impacts on capital and it respects the fundamental principles of accounting. The last section outlines the system for measuring and reporting human capital of workers, illustrated by a practical example.

Keywords Corporate social responsibility • Human capital • Fair wages • Human capital reporting

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Introduction

One of the most mentioned tasks of enterprises is generating profit and multiplying the owners' capital. Half a century ago M. Friedman claimed, that enterprises has only one duty toward society—namely, taking actions to maximize profit, together with abiding by current rules of a market game (1962, p. 133). However, in contemporary enterprises one can see more and more frequent attempts of combining economic effectiveness with carefulness of preserving ethical rules with reference to society and the natural environment. The effect of these actions is the creation of a concept called Corporate Social Responsibility (CSR).

The area written into the issue of CSR is human capital. A balanced economic growth requires respecting of mechanisms of reproduction this capital, thus creating proper conditions to preserve its value. One of them is the adequate level of remuneration of human capital workers that are at disposal of an organization. This issue demands system report solutions which allow to measure human capital and to assess the level of payment. This area, although of a vital importance, is not legally regulated and is not encompassed by regular and standardized economic practice.

CSR as a Contemporary Trend in the Strategy of Organization

Concept of Corporate Social Responsibility is defined as the integration of social and environmental aspects in everyday activity of organizations and in the relationships among stakeholders based on voluntariness (European 2002, p. 11). Within the CSR activities one can distinguish the ethical, ecological, and social aspect. There is a tight bond between CSR and the name of stakeholders and investor relationships. Stakeholders are defined as entities that affect a given organization or that are influenced by this organization (Freeman 1984, p.16). Whereas investor relationships are managing the information flow, mainly in the field of finance, marketing, and strategy, to investor society. Nowadays there is a postulate to widen the extent of duties of an organization within the framework of investor relationships to a considerably wider level of relationships with all the stakeholders. Contemporary investors are more and more frequently interested in not only data concerning a traditionally understood potential of organization, but also in its relationship with the environment (Roszkowska 2011, p.50).

The practice of functioning CSR in organizations should be characterized by long-term strategic activities. They should determine the following elements: the range of operation, the scope of activity, measures (Holme and Watts 2000, p. 4). The last of the listed element is connected with the problem of CSR reporting. It is just the question of reporting that is devoted less attention in the studies of CSR. Reports should present information formulated in a way based on a given account standard which will allow to make a comparative analysis and they ought to be

objective, which will allow the user of the report make their own analysis (Roszkowska 2011, pp. 92–93).

The activities undertaken in the sphere of CSR are undoubtedly socially useful, however, there appears a question of the range of advantages for enterprises if the activities are introduced. The direct benefit is the improvement if a company reputation, and the reputation and image of a company are basic elements of its competitiveness. It is worth mentioning, that the social awareness and pressure on the issue of society and ecology are growing steadily. Lack of reaction to these issues from the side of an organization creates its negative image. Moreover, the combination of activity in the field of CSR with a proper reporting generates additional benefits. It favors the reduction of information gap concerning the functioning of an organization, increasing in this way the interest of investors. What is more, well-formulated reports allow the management staff to realize the existence of important problems, enable identification of trends in researched areas, and finally give an incentive to constructive changes (Hilty et al. 2005, pp. 161–180).

The specificity of the CSR concept is its voluntary character. It includes commitments toward stakeholders which are not imposed by administrative methods. To take actions in this field enterprises are motivated by international institutions reports, social pressures, and above all the observed potential financial benefits. As a result, CSR often amounts to promotional activities, directed to a chosen group of stakeholders that ensure a big probability of achieving financial benefits within a relatively short period of time (Sahinidis and Kavoura 2014).

Human Capital Model and Principles of Its Remuneration

The starting point for formulating a proper theory of capital (and then human capital) is the statement that capital—unlike specific and heterogeneous assets—is abstract, aggregated, and homogenous in character (Dobija and Dobija 2003). This differentiation is reflected in the fifth-century-old accounting principle of asset-capital dualism. Capital defined as the ability to perform work is represented by resources, while capital concentration in a given facility determines its value.

Capital is a dynamic category, and its understanding requires identifying the factors which have an impact on changes to its value, especially the time factor. A dynamic model of capital changes is presented by formula (Dobija 2011):

$$C_t = C_0 e^{rt} = C_0 e^{(p-s+m)t}$$

Capital is subject to three key environmental factors: natural capital flow subdued to spontaneous diffusion (s), factors diminishing the impact of destructive forces as a result of work and management (m), and an 8 % natural potential growth (p). The level of 8 % economic constant of potential growth is confirmed by a number of research studies, especially in the area of rates of return in capital markets where it is reflected in risk premiums in the analysis of rates of return on

human capital and agricultural products (Koziol 2011). These factors can increase the initial value of capital (C_0) or lead to its dispersion. Another important implication of the presented model is the fact that capital does not originate from “nothing”—it originates from initial capital (C_0).

Human capital is based on capitalized resources necessary to build the economic potential to perform work by humans. In the first place, it includes the costs of professional education increased by the costs of living. It is necessary to incur the costs of living to prepare the physical carrier of human capital—the human body. Costs are incurred in time (t), which is necessary to prepare people to perform a given profession—from the time of birth to the moment of starting a professional career. If the human body is well prepared and a young person completes his/her education as planned, it indicates that capital diffusion (s) is compensated for by parents’ efforts (parameter m). A formula of capital can be developed for employee (H_t), where initial outlays are represented by (H_0), constant economic value (p), and capitalization time (t) (Dobija 2011):

$$H_t = H_0 e^{pt}$$

This human capital model can be further extended to represent capital as the sum of capitalized costs of living (K) and education expenditures (E). These outlays lead to the ability to perform work, and this ability increases in the course of gaining experience. The supplementary formulas represent the development of human capital based on the costs of living K and education costs E :

$$H(T) = (K + E) \cdot (1 + Q(T))$$

In the case of annual capitalization the particular human capital components can be presented in the following way:

$$K = k \cdot 12 \frac{e^{pt} - 1}{p} \quad E = e \cdot 12 \frac{e^{pt} - 1}{p}$$

where: k —monthly costs of living, e —monthly education costs and the remaining values as presented above.

The process of gaining work experience can be graphically presented as a learning curve. This concept assumes a slower pace of an increase in the work potential in the course of subsequent work cycles (repetitions). It can be assumed that an employee performs a given task in the following year with greater efficiency (%), but efficiency increases slower in the course of time. The adjustment of the learning curve to the needs of the human capital model facilitates estimation of increased human capital in the course of work (gaining experience). This additional value of human capital is subject to valuation and is integrated into the human capital structure as capital combined with experience. Experience factor ($Q(T)$) is expressed by the function of years:

$$Q(T) = 1 - T^{\frac{\ln(1-w)}{\ln 2}},$$

where w = learning factor, T = years of work experience $T > 1$.

The ability of assets to perform work is a prerequisite for their existence. Retaining the value of capital embedded in assets requires taking action counteracting destructive forces (s). This statement refers particularly to human capital. Human capital is subject to natural dispersion and this fact is the basis of fair compensation theory. Research indicates that fair compensation must balance human capital dispersion, it needs income determined by mentioned above 8 % economic constant of potential growth and human capital value of worker. Fair compensation theory is one of the factors which make the alternative human capital research program different from the program undertaken by T. Shultz and G. Becker.

A carrier of capital, including human capital, is affected by the capital dispersion process expressed in the general model as e^{-st} . Human capital retention is conditioned by an appropriate flow of income which compensates for human capital dispersion. In the case of humans, losses result from the nature of life. Retaining the value of human capital requires incurring compensation costs resulting from preparing future generations to perform work of the same value. In other words, fair compensation should maintain the ability to perform short- and long-term work. The loss rate expressed by random variable s is at average level $p = E(s) = 0.08/\text{year}$. Simultaneously, it represents the constant economic value indicating the level of fair compensation (W) (Dobija 2011; Koziol et al. 2014):

$$W = H(T) \cdot p$$

Lower compensation levels decrease human capital value. In practice, it manifests itself in the parents' difficulties in ensuring the same level of education for their children. A compensation system based on human capital measurement requires individualized knowledge about employees' competences. Information on education and experience is essential in setting the level of fixed compensation components. Human capital measurement is a key component of compensation systems.

Reporting of Human Capital

A report on a chosen field of an organization activity is a formalized way of settling with a group of stakeholders. In financial areas, reporting is legally normalized and presents the concern of a state about the stakeholders. However, these days the stakeholders' expectations are much greater, especially while facing the growth of importance of intangible resources which are not included into compulsory financial reports. Moreover, societies expect from enterprises activities that favor a

Table 1 An outline of the report on the structure and level of human capital payment

1	2	3	4	5	6	7 (%)
Carpenter	280876.8	11687.4	40616.2	333180.4	35830.1	10.75
Accountant	343214.7	21119.8	37688.5	402,023	31,309	7.79
Unit total	8,556,345	2,472,167	1,206,037	12,234,549	917,591	7.5

1 data concerning the work place, department, etc., together with keeping the employee's personal data strictly confidential, 2 the human capital (HC) from the costs of living (K), 3 HC from cost of education (E), which can be divided into particular components of gained education, 4 HC from experience (Q(T)), which can also be divided into particular components of a gained experience, 5 the total of HC, 6 received payment, 7 level of HC remuneration

balanced development. Still, there are problems with expanding the range of reporting required by law when these two postulates are taken into consideration. According to Ijiri (1975), a subject of measurement can only be facts that are possible to identify, as well as there should exist a possibility of identification of measures (process of measurement). A basic problem is the lack of substantiation of the subject of reporting, and this concerns both non-material resources and socially responsible activities. As stated before, human capital is liable to precise valuation, whilst decent level of human capital payment is written into the problem of socially responsible activity. The information required to create such a report is the data that allow to ascertain the value of human capital worker, especially the information concerning their education and work experience as well as data of a given worker's earnings. Such data allows to create a sample report (Table 1).

The resources of an organization are a subject of measurement and reporting. In a narrow depiction resources are a legal property of a company, however, from the wider point of view the criterion of controllability (IAS/IFRS). A company, on the basis of employment contract, receives human capital available and is responsible for its use taking the risk of disposing this capital and is obliged to fair settlement with human capital owner. A report concerning human capital can be a source of value added of an organization. Lack of systematic reporting is responsible for the fact that stakeholders can receive incomplete or incomprehensible information concerning a given area of functioning of an organization, which may result in poor use of the potential in this particular area (Sahinidis and Kavoura 2015). For instance, if basing on the human capital report one can conclude that the level of human capital remuneration is about 8 % it means that the employees are well paid. The received salary allows them to recreate the human capital. This fact undoubtedly gives evidence in favor of an enterprise.

The transparency in the area of payment can influence positively workers' attitudes well as reduce the risk of perturbation in the employer–employee relationship. Information about the value of human capital is the foundation for the improvement of the effectiveness of its use, thus improvement of work productivity. Moreover, it can make an additional dimension of the financial planning process.

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Part IX

Strategic Marketing of Heritage, Cultural and Architectural Tourism

Organized by: Charalampia Agaliotou, Loukia Martha, Panagiotis Panos
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Description:

This workshop aims to create a discussion platform about the contribution of strategic marketing in order to increase tourism by promoting the cultural and architectural heritage. More specifically the workshop refers to strategic marketing in cultural and architectural tourism, the perceived authenticity of cultural heritage sites towards an integrative conceptual model, the value of festivals which promote the cultural heritage, the way the public communicate with the museum product and the way we design the selling space of the museum. Also in this workshop future developments for marketing innovations for sustainable destinations were examined.

Food Experiences: The Oldest Social Network...

Teresa Tiago, Francisco Amaral and Flávio Tiago

Abstract Tourists are placing their trust increasingly in users who upload comments on sites such as TripAdvisor, where they are encouraged to evaluate and describe their own vacation experiences. This phenomenon has led to a loss of importance of Opinion Makers, which has, traditionally, rated services and destinations based on tourism experiences. This work represents a more in-depth examination of the content of textual reviews of restaurants, classified by TripAdvisor “Top 10” in two different cities. A qualitative/quantitative analysis of information contained in these reviews was performed to identify references to dimensions of the DINESERV model and its variants. From this process, some traditional factors were identified. Additionally, a new one has been proposed, extending the conceptual model of institutional DINESERV. TripAdvisor profiles are calculated through a system of points that are assigned according to the number of contributions that users make to the system. However, this system does not take advantage of the richness and utility of textual reviews. This study proposes a new profile system, calculated from the DINESERV factors obtained from an analysis of the reviews; this system reflects with more consistency the real characteristics of users, since their feelings and experiences are taken into consideration in the profiles proposed. This new approach is not exclusive to the TripAdvisor system since the core model features online reviews about restaurants; thus, with minor changes, it can be adapted to other user-generated content sites, allowing the creation of a social knowledge management tool to help restaurants develop successful business strategies.

Introduction

Social networks have considerable impact in the tourism sector, creating a global and massive phenomenon that has changed tourists’ behaviors and business strategies. From companies’ point of view, social networks are new and direct

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marketing channels for obtaining important feedback from customers about the quality of service provided (Belch and Belch 2014). From the perspective of tourists, social networks provide ease for sharing information globally with other clients about their experiences and opinions regarding tourism services. Clients share their consumer experiences willingly to facilitate the decision-making process of other tourists; additionally, they provide feedback to tourism enterprises. Their reviews may include explanations of different aspects of an offer or critiques of tourism experiences with a view toward satisfaction level and quality of service (Yan et al. 2013).

Traditional restaurants are slow to take advantage of information and communication technology (ICT) because their staffs are not comfortable with the technology and consider the investment costly. Social networks are cost-effective and help small restaurants in their efforts to promote good quality and a customer-oriented perspective. Further, they give these businesses global visibility (Koutroumanis 2011). One way to gauge the quality service of restaurants is through the DINESERV model and its variations. These frameworks collect data through questionnaires disseminated to restaurant clients. Fundamental components of social networks are reviews in which tourists and locals write about their experiences. Qualitative and quantitative data are analyzed as they apply to the reviews. In this study, DINESERV dimensions were used to describe tourists in terms of their food preferences and prioritized values. The resulting model permits incorporating rich information into customer relationship manager (CRM) systems or improved social CRM software systems.

Theoretical Background

Tourism has been a dynamic sector of the global economy with rapid growth in terms of numbers of tourists in traditional and emerging destinations. This development was enhanced by global Internet use and the continuing evolution of ICT, which has made our society dependent on knowledge and information (Daniela and Adina-Gabriela 2014). This last referenced work reports that 49 % of tourists consult online reviews when planning their holidays, and 16 % post online reviews after their vacations. Clearly, tourism enterprises have additional challenges dealing with tourists through this new channel.

In this new global world where competitiveness is a critical factor for tourism, businesses survey the adoption of technological advances that are fundamental to gains in terms of cost, efficiency, quality of service, and customer satisfaction (Neuhofer et al. 2013). Social networks, with global audience and low costs, have revolutionized tourism, permitting independent restaurants to connect to major consumers and receive feedback—services that were not available previously (Koutroumanis 2011). Several works emphasize the advantages of social networks for restaurants, including advertising the nature of the cuisine before actual consumption and services can be evaluated; clearly, it can be an asset for

independent restaurants (Hansen 2014). However, low-cost tool can create a nightmare if not applied correctly—even leading to the closing of a restaurant. Various examples exist, including reiteration of an owner's rude response to a customer's constructive criticism that forced the closure of the business. Despite such misuse of social networks, a good and active utilization of these networks in a global and competitive market can enhance a restaurant's value (Kim et al. 2015).

Before local people go to a different restaurant, they usually request the opinions of family members, friends, or coworkers who have been there to get their perspective about eating in that space (Tiago et al. 2014; Baksi and Parida 2013). With user-generated content (UGC), everybody has an opportunity to share their experiences, suggestions, and feelings about products or services through reviews, causing a reduction in uncertainty (Yan et al. 2013).

Some works suggest that tourists who share information are egoists and altruists (Andaleeb and Caskey 2007). Egoists expect to be recognized socially as contributors and as persons who share their knowledge with the others. The altruist assumes that people should contribute to the general welfare of others without any reward (Huang et al. 2010; Andaleeb and Caskey 2007). However, authors of these studies conclude that tourists share information via social networks based on three functional motives: (i) obtaining travel information is the most important, increasing trust in peers, reducing uncertainty and risks, and enhancing the quality of planned trips; (ii) disseminating information through social networks, acting as journalists or traditional opinion makers, and giving power to tourists because firms analyze the reviews posted and correct aspects of services as needed (i.e., if reviews are negative); and (iii) documenting personal experiences, permitting the tourist to have an online persona (Huang et al. 2010).

Reviews posted by tourists tend to earn more trust than those written by managers or professional opinion makers; however, the content of reviews is especially important (Amaral et al. 2014). If a review is vague, readers do not view it as credible or important (Ayeh et al. 2013). However, if the review is specific with helpful content and supporting evidence (e.g., photos), the review is viewed as more trustworthy, even if specific comments are posted by managers (Sparks et al. 2013). Specific reviews must exhibit quality information that depends on one or more of the following factors: (i) logical information that can be read easily and interpreted; (ii) relevant information that is useful and applicable for the reader; (iii) accurate reflections about actual consumption experiences; and (iv) valuable information that shows an understanding of readers' needs for knowledge (Filieri and McLeay 2014).

TripAdvisor provides UGC dedicated to tourism; it is considered a successful business model with users from all over the world that employs gamification on its website for user tasks and a Facebook application with an open graph. Both designs adopt a user-centered philosophy (Sigala 2015). Game mechanics for a system of points and tourist levels used by TripAdvisor were recently changed. Before, users were classified by the number of reviews; now, users earn points for reviews (100 points) and posted pictures or videos (20 points each). This system give more emphasis to comments, thus attributing value to tourists who produce quality

information, which is complemented with photos and videos to provide visual information of tourism experiences (TripAdvisor 2015). Important concepts of this system include the following: taste is viewed as the most important factor; presentation, texture, color, shape, and size are the elements to be taken into consideration; freshness is evaluated to determine the state of the food; offering of food variety is an important item related to food quality; and, nutritional value is associated with healthy options.

The concept of quality in service industry is tightly connected to theories of customer satisfaction and product quality. And, therefore, most research established a direct relation between customer satisfaction and firm profitability (Gagić et al. 2013). A strong relationship between quality perception and customer satisfaction is also identified (Namkung and Jang 2008). Most studies on service quality in foodservice have focused on well-established theoretical frameworks such as SERVQUAL or a driven scale, such as the DINESERV (Stevens et al. 1995). Dinserv measures quality through five dimensions: reliability, assurance, tangibles responsiveness, and empathy (Stevens et al. 1995). However, service quality can be determined by other characteristics such as the behavior of managers, chefs, and employees; four characteristics are specific to service: (i) inseparability, which means that production and consumption occur simultaneously and cannot be separated; (ii) intangibility, which is difficult to measure because services cannot be tasted, smelled, or touched, unlike tangible signals such as cleanliness, décor, and panorama; (iii) perishability, which means that something cannot be given back or resold, even if a tourist dislikes the service; and (iv) variability, which refers to the fact that provided services are not exactly the same because customers are not the same and may have different experiences and expectations, just as restaurant staffs do not exhibit the same levels of performance every day (Gagić et al. 2013). Price and value are other dimensions; a suitable price is within the range that the tourist wants to pay to obtain a product or service, whereas value refers to the sum of perceived benefits and costs to the consumer, or a combination of price, service, and product quality, whereby value increases with quality and service and decreases with price.

Recent works suggest that restaurants that provide conditions for guests to socialize with each other and which facilitate mobility obtain higher levels of customer satisfaction (Duncan et al. 2015). The atmosphere dimension concerns the disposition of the dining room, the view, noise level, and other aesthetic elements. A pleasant atmosphere enhances the experience and, consequently, customer satisfaction (Kim et al. 2009). Recent works add social aspects associated with restaurants to this dimension. The convenience dimension refers to ease of doing or having something. In case of restaurants, it is measured by the time saved from walking, finding a parking space, and meal preparation (Hansen 2014). Some works argue that social media is an ideal tool for promoting the formation of virtual communities, where members have specific characteristics and post rich information about their experiences, being able to be subgroup according to their preferences (Kavoura 2014).

Framework and Results

It is clear that UGC on SNSs is an important source of research data and comprehensive reviews by which consumers express, without restrictions, their opinions about goods or services. The literature review suggests that the quality of information contained in reviews is a driver for user behavior; such information reflects customers' preferences, especially if they indicate satisfaction. In the case of a restaurant, the DINESERV model has variant models with different dimensions (Hansen 2014; Keith and Simmers 2011; Kim et al. 2009; Stevens et al. 1995).

A qualitative analysis is used frequently to examine the application of any theoretical framework to reviews. With a well-defined theoretical framework, which is a characteristic of DINESERV, it is possible to identify portions of text that relate to a particular dimension. The textual data are split into small sentences depending on their meanings, and they are assigned and linked to the correct dimensions of the theoretical framework, permitting the comparative study of different dimensions and respective interconnections. This type of analytical method can be extended to other researches (Kavoura and Bitsani 2014). Data in a text format not only contain qualitative information but also quantitative information, like frequency and spatial proximity. Thus, researchers can use both techniques with both data sets based on a hybrid method (Guercini et al. 2014). Therefore, the hypotheses to test the applicability of this method follow:

- H1: DINESERV dimensions are shaped differently in the social context.
- H2: Mindfulness of UGC generates different tourist expert profiles.

In an effort to understand the dimensions comment by tourists in TripAdvisor and to find the major tourist profiles, several procedures were conducted. To test the developed model, two regions with similar natural conditions, but very distinct tourist experiences were chosen: the Azores and Hawaii. Within each archipelago, the main town was chosen on Kailua Island and in S. Miguel Island, and TripAdvisor' top ten restaurants in each town were evaluated. Data was collected in each city between April 24 and 30, 2013. These two locals were selected to test the hypotheses in different cultural and economic environments and in different stages of the tourism life cycle. This selection was deemed appropriate given the nature of the study. Data analysis followed a mix method, starting with an exploratory research of qualitative data (Malhotra and Birks 2007) to study the information present in the online restaurant reviews. Afterwards a text analytics process was conducted, involving several steps: data preprocessing, domain identification/classification, and statistical association analysis (see Fan et al. 2006). Then data were converted and transposed to SPSS, where an exploratory factor analysis was conducted through an examination of principal components, to assess the presence of the five DINESERV dimensions on tourists' comments: Food quality (KMO = 0.532); Service (KMO = 0.521); Atmosphere (KMO = 0.645); Convenience (KMO = 0.545) and Price and value (KMO = 0.5).

The food quality dimension was redefined, creating three factors: plate layout factor, which includes visual appeal and food preparation; plate balance, for which the main constructors are healthy options and composition of food products; and confection, which includes taste and freshness of food. These factors explain 59.19 % of the food dimension, which conforms with the work of Williams et al. (2012), who refer to studies in which this value is acceptable if between 50 and 60 %.

In respect to the service dimension, a new factor concerning chef and manager empathy has been defined; these distinct persons offer services. The proficiency factor refers to a helpful team, and descriptive menus are constructors. The team efficacy factor applies to a staff that provides prompt and efficient service and which quickly corrects anything that goes wrong (customer complaints). Staff empathy is also a factor of service. These four factors account for 67.94 % of the service dimension, and they are consistent with related studies (Williams et al. 2012). The price and value dimension in terms of DINESERV's tourism application involves only the value for the money, with two strong constructors. The atmosphere dimension changes according to the surroundings/layout factor, which includes exterior visual appeal, a panoramic view (a new constructor), and visual appeal of the dining room. Cleanliness of the dining room is a factor related to comfort. A new factor of atmosphere that was not considered in the established DINESERV model is socialization. Tourists give importance to restaurants where they can initiate informal conversations with other people, including locals, other tourists, and their guests. For the social factor, romantic ambience is a constructor. Surroundings and layout account for 24.90 % of the atmosphere dimension, followed by cleanliness, comfort, and the social aspect, respectively. All factors account for 65.90 % of the atmosphere dimension, and this finding are conformed to Williams et al. (2012). Factors of the convenience dimension include walking convenience (identified in previous studies); thus, the principal constructor is a convenient location. Although a new factor was identified by tourists regarding tourists' mobility capacity (i.e., vehicle convenience) refers to a restaurant's parking conditions and the ease in finding a restaurant. These factors account for 63.71 % of the variance of the convenience dimension.

The results suggested that the DINESERV model must be redefined when applying it to tourism social networks, so *HI* is support.

The factors identified through the exploratory factor analysis were used to determine tourist cluster profiles, using k-means clusters. The ANOVA results validate the use of these variables in the clustering process. Applying the aforementioned methodology of cluster analysis, four groups were obtained (Table 1).

The smallest cluster named "Clean" and with 17 elements is different from other groups because individuals in the cluster positively value the cleanliness factor (high score); also important, but with small scores, are team empathy, social atmosphere, and employee proficiency. In relation to other variables that tend to influence tourist behavior, no significant differences among the clusters were find. The "Convenience" group has 40 elements distinguishable from other groups because individuals in this cluster strongly and positively value vehicle

Table 1 Clusters final solution

	C1	C2	C3	C4
Cleanliness factor	6.21829	-0.12130	-0.15609	-0.14005
Vehicle convenience factor	0.25254	-0.17573	-0.24286	3.62665
Team empathy factor	-0.22541	-0.59080	1.14057	-0.02253
Social atmosphere factor	0.22320	-0.18906	0.35330	-0.05710
Team efficacy factor	0.15735	-0.10936	0.21434	-0.10958
Walk convenience factor	-0.09912	-0.08899	0.08410	0.59218

convenience and, to a smaller degree, walking convenience; the team empathy factor is less important. The “Exquisite (special beauty or charm of ambience)” group with 259 tourists is the second largest group, and factors valued are team empathy, followed by social atmosphere, suggesting that this group appreciates genteel social environments. The major group (n = 492), “Couldn’t Care Less,” differs from other tourist groups because members had a bad experience with a team, in the sense that a staff was not adequately attentive. Regarding the other factors, the results achieved are consistent with the findings of previous works.

From a qualitative and quantitative analysis of TripAdvisor reviews, it was possible to identify DINESERV dimensions and factors. These factors—including some already present and others proposed for the new model—can be used to identify users’ profiles; thus, *H2* is supported.

For centuries food has congregated people around a table socializing. Duncan et al. (2015) suggested that restaurants that provide conditions for guests to socialize with each other would obtain higher levels of customer satisfaction. However, the results suggested that the social atmosphere factor is important, but not the higher valued dimensions what commenting and sharing concerns, for restaurant encounter experience. So, the oldest social network seems to be changing.

Final Considerations

The UGC portals have changed the way tourists and industries perceive the market; the former have a chance to identify the opinions of other tourists, which are useful for planning vacations (Aspasia and Ourinia 2014). Thus, peer reviews, rather than the traditional opinion makers, influence tourism decisions. The tourism industry is exploring new horizons with social networks, as these sites offer cost-effective, direct, and quick ways to communicate with end customers—allowing on one hand, the creation of new enhancements, new products, or tourism services, and on the other, feedback related to tourism experiences (Fileri and Mcleya 2014).

In the interest of providing added value and services to restaurants that are relatively low in cost, sites that present UGC dedicated to tourism facilitate the

development of a social knowledge management tool. Accordingly, restaurant managers, who know the preferences of their customers—what they like and what they view as negative—can take corrective measures that will be reflected in reducing the number of negative comments and improving a restaurant's ranking.

Expressions and terms used by diners on social networks may determine the creation of imaginary communities and respective subgroups according to their food preferences (Kavoura 2014); thus, indexes and clusters proposed in this work, which were extracted from tourists' comments, identify profiles of tourists on TripAdvisor and other social networks, facilitating the creation of trust and interaction between tourists. These resources greatly improve the decision-making process of tourists. Improved confidence stems from the fact that, traditionally, these sites (particularly TripAdvisor) have defined profiles based on the number of comments posted, a system that does not give much information about user preferences compared with profiles proposed in this work.

We may conclude that the overall objectives of this work were reached, since it was possible to identify different dimensions of quality assessment and distinctive segments based on the comments contents post. First, it clearly identifies dimensions that need to be incorporate in an enlarged DINESERV model, considering the eWoM create by tourists. Also, this work reinforces the idea that not all tourists value the same dimension. Therefore, the four distinctive segments require a specific communicational approach. The results of this research provide some insights to restaurant managers and even policymakers, planners, and tourist players regarding tourist behavior on social media and valued dimensions during a restaurant experience. Existing textual knowledge in comments can be extracted and transformed into new DINESERV model dimensions—DINESERV 3.0, as suggested in this paper, allowing correct classifications of restaurant experiences. This methodology can be used in other contexts, presenting a research path for future research.

Future studies should include other tourist destinations and sectors to validate this approach and the tourist profiles proposed. These will also improve the actual dictionary and respective links regarding dimensions used to develop an automatic system that permits calculating the DINESERV index and user profiles. Related works could include more information in computation of profiles to include other kinds of information, such as number of cities and countries visited, user origin, sex, and age.

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Tourism Events: The SATA Rallye Azores in Facebook and Twitter

Sandra Faria, Teresa Tiago, Flávio Tiago and João Pedro Couto

Abstract Tourism events and sport activities have been separately widely analyzed due to the experience value offer, which can be integrated into destination marketing. However, little attention has been paid to the integration of sport as a tourism event that attracts casual sport fans and serious leisure fans. Therefore, clear orientation to client digital interaction is required, acknowledging that tourism and sport fans behavior are mostly influenced by eWOM and is complex comprehending many elements and a specific social media strategy. The present work offers a first glance at social media strategies in sport tourism events, by analyzing the activity on Facebook and Twitter of fans before, during and after the SATA Rallye Azores, documenting the topic criteria used, the engagement and sophistication achieved and transposing the engagement drivers to the components of the STAR (Storytelling, Triggers, Amusement, and Reaction) model. Results show that to have a content-oriented strategy that maximizes the engagement in social media. However, for the sport event chosen the engagement level found was lower than expected and the STAR model dimensions were completely different from the other social media phenomenon, presenting truly low levels of storytelling.

Keywords Social media · Facebook · Twitter · Event tourism · Hashtags · Engagement

Introduction

This is a unique moment: referred by many as the information age, by others as the digital age, and still others as the globalization era. Regardless of the chosen designator, tourism emerges as a growing activity worldwide making use of the ubiquity of the digital age, the information-intensive nature of the information age and the increasing tourists' mobility of the globalization era. Thus, the challenge

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facing any destination or hospitality and tourism firm that wants to be competitive in this market is to leverage their digital presence at a global scale, customizing their offer based on information available.

Hvass and Munar (2012) noticed that the role of online marketing has increased in the tourism industry, and the takeoff of social media following a similar path of what happen in other industries (Tiago and Veríssimo 2014). There has therefore been much discussion of and research on social media and its implications for the tourism and hospitality industries (Zeng and Gerritsen 2014; Goodyear et al. 2014; Munar et al. 2013; Hays et al. 2013; Hvass and Munar 2012).

Looking at tourist behavior, it can be seen that tourist become digital active, as information consumers and as cocreators of contents, sharing and commenting posts, photos and videos (Fotis et al. 2012). As Williams et al. (2015) recall “tourism is an experiential product,” that impels tourist to seek digitally peers opinions about previous experiences when planning a trip. Acknowledging this, Kaplan and Haenlein (2010) suggested that firms could decide to either “participate in this communication, or continue to ignore it.”

This impels us to analyze tourist/fans activity on two social networks regarding a sport tourism event promotes in Azores: SATA Rallye Azores. For that purpose, we used a combination of social network analysis and content analysis on a set of data gathered in Facebook and Twitter, documenting the topic criteria used and the engagement level achieved. The challenge is to validate past conceptual constructions or reshape it in the social media domain.

The present work offers a first glance at social media strategies adopted in local events, by analyzing the activity on Facebook and Twitter of an international sport event: SATA Rallye Azores. This paper is organized as follows. In the first two sections, we review the literature and formulate the research questions. The next section describes the sample and measures used, and then presents the major findings. The findings presentation is accompanied by a discussion of the implications for theory and practice.

Background

Technology has become a baseline of everyday life of billions of people that posts tweets, likes and become fans, and at the same time search, create, and share contents, becoming consumers and creators simultaneously (Tiago et al. 2014). These communications technologies have redefined the tourism industry (Buhalis and Zoge 2007). Both firms and customers have consequently undergone behavioral changes. From a firm’s perspective, technology allows a cost reduction and strengthening the relationship with all stakeholders, permeating contemporary tourism marketing. Above all, these technologies have transformed the culture of purchasing and communication in hospitality and tourism firms, forging digital strategies that are ideally suited to the intangible nature of tourism (Cooper and Hall 2013).

From a tourist' opinion, tourism is an integrated product with technology catalyzing and enhancing the entire tourism experience (Neuhofer et al. 2013). This involvement reflects the web evolution, from a simple "read-only" format to an "executable" one (Rizzotti and Burkhart 2010). More, the rapid and explosive growth of the Internet, in the last two decades, stimulated social behaviors exchanges and consequently modified human daily activities, habitats, and interactions (Tiago and Veríssimo 2014). These lead tourists to use social media as reliable sources of information, but above all as communities of interest regarding tourism products (Kavoura et al. 2015).

As in other tourism activities, the sport events can be classified in different categories according to the type sport, level of effort, athlete's commitment and fans involvement with the sport. Recent studies reported that for instance, running events become "serious leisure" in the past 7 years, with tourist choosing their destination based on marathon time, difficulty, and place. In this case the notion of "serious leisure" comprehends that marathoners pass through a "career process" that requires physical efforts, progress and failures, and a strong feeling of identification with the sport (Shipway and Jones 2007). Another example was found in the work of Kane and Zink (2004) regarding kayaking tourists experiences, who were described has been in their own "social world" during the trip, focus on their personal "career progression." However, not all sports tourism events required a "serious leisure" posture; World Cup or Olympic Games are two mega sport tourism events where most participants level of commitment and effort is quite reduced, since their role is restricted to chairing professional athletes during the game. This led us to question the differences between "serious leisure" and passive sport, from now on referred as "fan casual leisure," in tourism.

Shipway and Jones (2007) presented the notion of "serious sport tourism" as a combination between "serious leisure" definition of Stebbins (1992, p. 3) and the social identity theory of Thoits and Virshup (1997), where through social identify achievement the tourist is able to experience serious leisure. These authors claimed that "fan casual leisure" is unable to provide the same outcome, driven from the smaller social identify bonds created (Stebbins 2001).

However, when looking at sport-related literature, one common reference found regarding people's involvement with sports, teams, organizations, and sports athletes are "ego-involvement." This concept was first presented by Allport in 1945. It explains that involvement is only present when an activity is evaluated from the individual's perspective, and provides a combination of hedonic value, symbolic value, and a core or central component of their life (Beaton et al. 2011). Thus, even though "serious sport tourism" can offer the individual with a sense of belonging, combined with self-worth and self-esteem enhancement, "fan casual leisure" can get people more overwhelmed than most other activities.

With the social media networks, online and offline experiences tend to bond and social media interactions become a part of the fan event experience. These networks have drastically changed the way fans, sport figures and organizations interact, and communication thrives through social networking (Filo et al. 2015). So, currently

reputation and engagement online seems to be key points to any sport-related brand or athlete.

Haven and Vittal (2008) described that user engagement is composed of four “I’s” (p. 3): “Involvement” (“the presence of a person at the various brand touch points”); “Interaction” (“the actions people take while present at those touch points”); “Intimacy” (“the affection or aversion a person holds for a brand”); and “Influence” (“the likelihood a person is to advocate on behalf of the brand”).

In order to make the fan experience unique across social media and other channels, we begin to thinking like fans and assess what they valued. The contents created tend to be the mirrors of their relational commitment and satisfaction, thus monetizing social media can be a help for brands and DMOs that want to promote sport tourism events.

Zeng and Gerritsen (2014) have conducted an exhaustive review of the literature in this domain and identified three domains of influence in social media that merit consideration: (1) as information and communication technologies tools that depend on information technology and firms’ digital marketing strategies; (2) as channels enabling peer-to-peer communication, based on content creation, collaboration, and exchange of content among firms, individuals, and communities; and (3) as a link to constructing a virtual community that affects people’s behaviors.

Social media due to their wide accessibility and ease of use enables tourists to engage in eWOM (Williams et al. 2015). For many, this source is much more reliable than the traditional tourism sources (Duan et al. 2008) and is relevant to support their experience.

So, large online imagined sport communities are created around a sport event or sports figure. The emotional involvement and commitment that occur between sports fans establishes the basis for a community (Kavoura 2014) that shares not only the same values and likes/dislikes, but also similar consumer’ behaviors. Fourie and Santana-Gallego (2011) analyzed mega-sport events impact on tourist arrivals in the host country. These authors found that the results varied in accordance to the type of event, local involvement and the participating countries and whether the event is held during the peak season or off-season. That led us to question if all types of sport events can have the same positive results? And, what make them willing to share and comment experiences?

Framework and Results

Berthon et al. (2012) presented five axioms regarding web evolution and its impacts on consumers and marketing “(1) social media are always a function of the technology, culture, and government of a particular country or context; (2) local events rarely remain local; (3) global events are likely to be (re)interpreted locally; (4) creative consumers’ actions and creations are also dependent on technology, culture, and government; and (5) technology is historically dependent.”. When transposing these axioms’ to the tourism field and considering the findings of Law

et al. (2014) is expectable to find that a local event does not remain local and that tourists engagement, actions and creations are equally dependent on technology, culture, and government.

One of the concepts that need to be confirmed in the social media domain is fan classification. Hunt et al. (1999) subdivided fans in several categories according to their geographical, temporal and engagement commitment shown the sport activity. As showed in previous research the interaction on social network related to tourism experience can be much more than brands post, incorporating factual data, opinions, and promoting interactions (Humphreys et al. 2014), for this reason the research approach used combined social network analysis and content analysis. With these considerations in mind, a four-dimensional framework: storytelling, triggers, amusement, and reaction (STAR) is proposed to leverage brands' and destinations activity on social media. Each dimension will correspond to its weight as found in previous multidimensional analyses of social media contents (Tiago et al. 2015).

Filo et al. (2015) performed a careful review of the literature concerning sports and social media, noticing that most studies focus on Twitter, neglecting the other social networks. As advised by Billings et al. (2014) focusing on Twitter can be deceiving, and further research is needed, including other social network sites and metrics of analysis. Therefore, we focus on Facebook and Twitter, enlarging the field of research.

"Fan casual leisure" sports are a popular type of event in Portugal. For this reason, we chose a specific "fan casual leisure" event that occurs in Azores: SATA Rallye Azores, that is celebrating its 50th anniversary. This event occurs in Azores islands and belongs to World Rally Championship (WRC), organized by FIA European Rally Championship, counting with the participation of local, national, and international drivers, that race for 3 days in different types of roads (gravel, asphalt, and mix roads) and counts with numerous spectators. This event is worldwide broadcast by EuroSport and has an official website, Twitter, and Facebook pages, as well as a dedicated app for mobile phones, allowing a global and interactive consumption of the event. Data collection, perform during the weeks before and after the event of 2015, focused on the contents created on two different social networks, Facebook (www.facebook.com) and Twitter (<https://twitter.com>). Since our aim was to analyze sport tourism behavior in a specific sport event: SATA Rallye Azores, these two social networks were chosen due to their popularity among sport fans of these events. To evaluate the fans composition for the event social structures were analyzed through the use of graph theories. Afterwards the content post was studied and the level of engagement was estimated, allowing estimates of the STAR model.

In light of mounting research regarding to fans typology and considering Hunt et al. (1999) classification, SATA Rallye Azores page fans were analyzed. For this purpose, and based on the network structure found in both social networks, a cluster analysis was performed. Three clusters were found, as showed in Table 1.

Looking at the three clusters and comparing the analysis with the Hunt et al. (1999) fan classification structure, it is apparent that dysfunctional fans do not exist.

Table 1 Means differences between fans segments

Dimensions	Cluster 1	Cluster 2	Cluster 3	Means difference
	Temporary fans	Devote fan	Local and fanatical fans	
Like it	8.45	15.41	23.63	1 < 2,3
Comment	2.17	2.24	2.21	NS
Post activity	0.42	0.51	2.23	1,2 < 3
Share links	1.91	3.08	3.85	1 < 2,3
Location	0.65	0.78	0.94	1,2 < 3
Gender	0.67	0.68	0.69	NS

NS Non significant

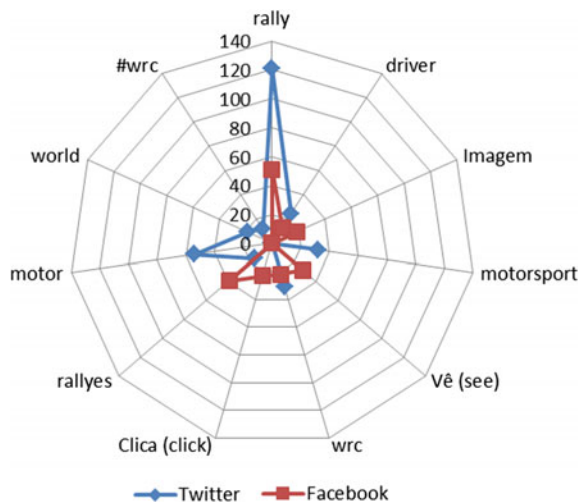
There are fans based on location but with high activity on the social media pages, was integrated on cluster 3, denoting that this sport event regardless the worldwide coverage, is truly impacting locals.

Analyzing the contents posted and engagement produced in both Twitter and Facebook, the differences are evident and reflect the fact that Twitter has more temporary and devote fans and Facebook has more local and fanatical fans (Fig. 1).

The klout score is a measure used that represents the influence of each user in social media networks. Assessing the klout value for the activity on Twitter of SATA Rallye Azores fans and followers, it is quite evident that their values are smaller than the worldwide average klout score for motorizing sport events

Social media is a game changer. In that sport tourist is in control. For that reason, is necessary in order to evaluate the most suitable elements to use in the social media domain in order to stimulate fans and tourist engagement.

Fig. 1 Most engaging keywords in twitter and facebook



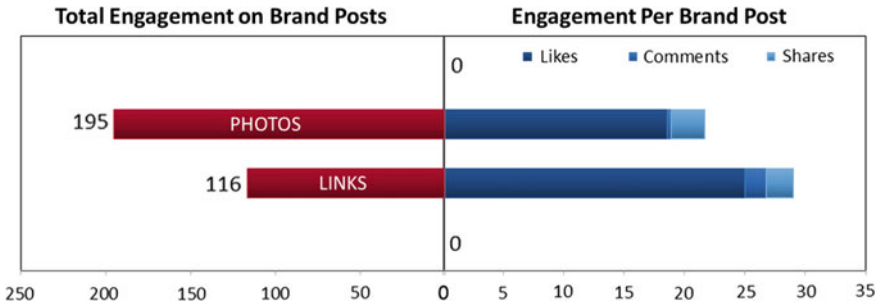


Fig. 2 Engagement analysis

Aspects related to emotional and practical values of content have already been debated in regard to characteristics that would positively lead to fan engagement. As Fig. 2 shows, photos remain the most active triggers of fans’ emotions and actions.

With so much time focused on the messenger, the value of the message itself tends to be devalued. The STAR model reveals that sports fans engagement reflects the capability of the messenger to combine four dimensions: storytelling; triggers; amusement; and reaction (Tiago et al. 2015). The weight found in the multidimensional analysis performed for each of the dimensions was: storytelling 0.1; amusement: 0.37; triggers: 0.33; reaction: 0.2. Both images and links can act as amusement or triggers, depending on if it stimulates an emotional state of mind or simply makes the content memorable. These two dimensions should account for 75 % of the STAR model for the case of SATA Rallye Azores.

As showed in Fig. 3 the outcome in social media of the sport tourism event is quite different from the balance STAR model and this might explain the low levels of nonlocal engagement found.

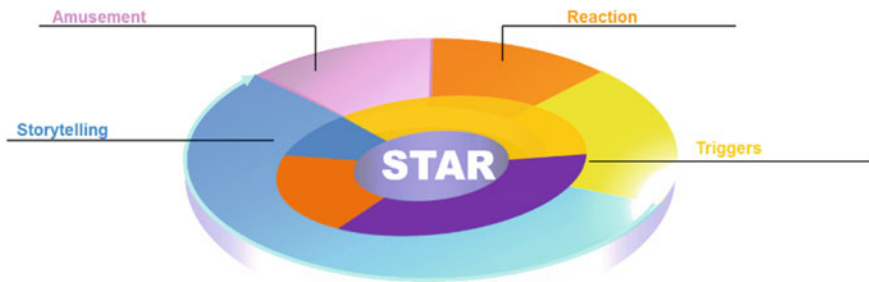


Fig. 3 STAR model

Final Considerations

The results obtained with the social network analysis suggest that for the case of SATA Rallye Azores the event and the destination influence the composition of the network and its activity, since the new and/or active fans were highly linked to each other based on one of two elements: geographic location and event-information. The quantitative and qualitative analysis conducted allow to validate the STAR model and results achieved reinforce the notion that engagement reflects the messenger's ability to combine these four dimensions.

Depending on this model, and for the case of SATA Rallye Azores, photos were the most engaging content. Consequently, the trigger dimension received a weight much higher than in previous studies. Besides the images/photos, the content posted that reaches most fans and promotes a higher level of engagement was tied to the launch of a new app related to the event. For this event, the concept of storytelling was not fully explored. In this context, it needs to be understood as a nonstop and mostly improvisations phenomenon, made up of interlinked content that generates a feeling of empathy between fans, drivers, and brands and it is quite relevant to the development of the tourism product experience story. The components of amusement and reaction are related to content valence and the ability to encourage sport tourists to share, comment, and have fun and in this domain the different segments show different preferences in terms of type of content: the local shared with higher intensity photos and links related with the event and with the personal experience, mostly in Facebook; for the other two segments the prevalence was on sport detailed images and local landscapes. All four dimensions are not a requirement, but from their balance use upper levels of engagement can be achieved.

Effective use of social media can generate eWOM that helps to promote and differentiates a destination. For the present case, a deeper analysis of the overall brand awareness of the destiny and the assessment of the SATA Rallye Azores contribution for this awareness is needed it. As a first effort to understand the impact and outcomes of the sport event in social networks, this work leaves the challenge of DMOs and sport event managers to work more effectively the contents and to promote a more dynamic interaction with sport fans/tourists on social media platforms.

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Cultural Festivals on Sites of Cultural Heritage as a Means of Development of Alternative Forms of Tourism

Loukia Martha, Charalampia Agaliotou and Panagiotis Panos

Abstract This paper aims to investigate the contribution of cultural festivals hosted in historical venues (archaeological or industrial sites) as a tourist policy instrument. More specifically, the focus is put on examining the relationship between cultural activities and the host venues, in the Mediterranean countries, as a key driver for the development of international cultural tourism. This approach will be examined and analyzed through a brief review of international cultural festivals hosted in Mediterranean countries including Italy, Spain, Turkey, France, Cyprus, and Greece. Which are the factors that make the organization of such cultural festivals interesting from a tourist perspective? Which are the marketing tools that have been utilized so far in order to cultural festivals and which other new tools are proposed? Is it possible for a cultural festival to be run independently or does it require support from a broader framework of tourist initiatives in order to become more appealing? What is the purpose of hosting cultural activities in historical venues? Which are the contemporary strategies that can be used for the development of tourism based on the exploitation of the cultural wealth of Mediterranean countries? The article concludes with proposals for defining tourism policy, focusing on cultural festivals held at Heritage sites on a wide scale.

Keywords Cultural tourism · Cultural paths · Festivals · Historical and cultural venues · Culture · Tourism policy · Cultural heritage sites

Cultural Tourism

The World Tourism Organization (UNWTO) defines that cultural tourism is people choosing to travel to destinations that are of particular interest in relation to culture and their participation in such activities and experiences. For example: cultural

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tours, visiting museums, historical sites and monuments, attending theatrical performances, concerts, festivals, or other events in sites of cultural heritage, pilgrimage and getting acquainted with the culture of a place or group (Richards and Organisation for Economic Co-operation and Development 2009).

Cultural tourism is a form of Alternative tourism. Alternative forms of tourism are part of special interest Tourism (Kokkosis and Tsartas 2001). Cultural tourism concerns the countryside as well as the urban space (Defner 1999).

Routes—Tools for the Development of Cultural Tourism and Cultural Itineraries

One of the main modern tools for the development of cultural tourism is the creation of cultural networks or paths (Karavasili and Mikelakis 1999). These routes connect cultural sites and can be categorized based on content: thematic, historical, cultural, mixed cultural routes, or based on scale: in urban, regional and super-regional cultural routes (Papageorgiou and Gkantouna 2012).

These routes can interpret and highlight the cultural heritage of a place: myths, history, local culture, architectural heritage (pre-Industrial, Industrial, Byzantine, Folk, etc.), customs, and traditions, people who lived or were born or portrayed a place through all forms of Art and Science. Therefore, a grid of cultural routes can be created and enriched with other points of interest (Karavasili and Mikelakis 1999).

The European Commission, the European Parliament and the Council of Europe claim they will cooperate more closely towards the promotion of the cultural routes. (Brussels, 27–09–2010, European tourism day).

The Concept of Festivals

A great event in a great place at a great time.

Richard Wagner

Cultural events are organized by public and private entities, as well as partnerships between private and public entities, at regular intervals. The term Festival refers to a themed public celebration that takes place once a year within a certain time period (Getz 1991).

Different definitions attributed to the term Festival are derived mainly from its content. Cultural activities that highlight the unique characteristics of each region, the history, the traditions and customs, the lifestyles, the production, as well as the countryside and the atmosphere of a city (Stevenson and Matthews 2013). Artistic events based on different forms of art, music, dance, theater, cinema. Celebrations related to religious celebrations, ceremonies and anniversaries.

The purpose of creating a Festival is not univocal because it is distinguished by the diversity of its nature and the nature of its events and of its purpose. The final

identity and consolidation of a festival is ever determined by the participation and acceptance of the participants, who in turn establish the character of each festival.

Cultural Festivals on Sites of Cultural Interest (Archaeological Sites, Historic Monuments and Industrial Spaces)

The term “Culture” refers primarily to all material and spiritual values and achievements passed down from each generation to the next, over the years, forming a common memory-image for a set of individuals thus creating a feeling of common origin, references and experiences, referring to a path of stable social and economic progress (Bitsani 2004, 29).

Festivals can be defined as cultural institutions and therefore contribute to the production and promotion of knowledge, history, the arts and tradition. Through the ongoing interaction of the reception area and cultural activities, a living organism is created, contributing to local development and the strengthening of cultural tourism (Kavoura and Bitsani 2014; Bitsani and Kavoura 2012).

The integration of cultural festivals at Heritage sites, through reuse, contributes to the promotion of such monuments and in turn not only leading to economic development but also the development of tourism, culture, history and heritage, quality of life and environmental protection. The unbreakable connection between the reception area and the main area of cultural activities is an important tool for the development of cultural tourism.

Festivals at Cultural Heritage Sites in the Mediterranean

In the following research becomes quoting cultural festival conducted at historical monuments, archaeological sites, temples, castles and industrial sites in Mediterranean countries. This is an effort to record all the major cultural festivals revolving around reception areas (historically and functionally), their subject matter, their popularity and the factors that make each venue interesting.

Festival at Historical Monuments: Archaeological Sites, Castles, Churches

The use of historical monuments, especially the use of ancient theaters for hosting theatrical events, dates from the first decades of the twentieth century and is linked to the progress of archaeological excavations and restorations of monuments.

Numerous factors affect tourist interest in certain places in relation to cultural production. In most cases, the sites hosting cultural events are part of wider range of monuments of antiquity and attending a performance can include a general tour of the archaeological site, creating archaeological interest.

Monuments are often situated in areas of significant natural beauty and historic cities in the urban tissue. The dialogue between them, where the prominent architectural virtues of a building converse with nature or the city, is an important point of interest for tourists in the field of architecture and in relation to the place (Martha and Kotsaki 2014).

Festivals in Industrial Areas

According to the Nizhny Tagil charter for the Industrial Heritage adopted by TICCIH, 'Industrial heritage are the remnants of industrial culture that have historical, technological, social, architectural, or scientific value. These remains consist of buildings, equipment, workshops, mills, factories, mines, etc., (TICCIH 2003).

Industrial heritage is not only an integral part of culture and history of each place but also carries information of great value in many different fields: such as the social sciences and technology, architecture, aesthetics (Agaliotou 2015). The usual practice is the installation of the museums in buildings where in the past there was the activity of small industries. These buildings have a special architectural interest. At the same time they contribute to the preservation of the cultural memory (Martha and Kotsaki 2015).

The following observations arise from the foregoing research:

- A festival can be conducted simultaneously in different places. Just as the Greek Festival that occurs in historical and archaeological sites, as well as in industrial buildings.
- Conducting a Festival in areas of cultural inheritance during periods of low tourist interest can significantly lengthen the tourist season.
- A Festival acts as an incentive for the protection, restoration and enhancement of unknown monuments thus aiming for both local and tourist development.
- It can contribute to the creation of collateral events (gastronomy, sports, speeches, etc.) therefore expanding interest and increasing the number of visitors. As to the International Festival "TRACES of MESOGEOS S.A. & AMP;" in the city of Chania film screenings were organized alongside gastronomic events specifically themed according to genre of each film.
- It creates new social incentives for active participation of local inhabitants in cultural as well as community activities. The culture of the inhabitants as well as the concept of volunteerism can be promoted through information and communication processes. An example of this is the Festival "Tenta" in Kalavassos village in Cyprus.

- Strong social and cultural ties can be established through the cooperation of different countries in organizing festivals and exchanging ideas, knowledge and experiences. An example of this is the Festival “Pafos Aphrodite Festival” in Cyprus with the Festival d’Avignon and Opera Verona Futura.

Promotional Tools of Cultural Festivals

In order to accomplish a successful marketing strategy for festivals it is important to identify the characteristics of visitors and their motivation and satisfaction. Visitors can be classified depending on the time spent on a holiday (short-stay versus long-stay visitors), on their income, high or low intention expenditure, their country of residence, i.e., whether they are tourists coming from abroad or from within a country and finally depending on their age groups (Chhabra 2010, 145).

The festivals covered in this article, take place on significant heritage sites. The audience addressed is largely characterized by interests of cultural content and from one aspect is homogeneous. At the same time, however, it differs for example age wise, because both the elderly and the young can attend a series of theatrical performances, concerts and happenings. Most likely a mixture of tribal and marketing philosophies will be needed.

The festival network has some unique features that if evaluated properly can significantly increase success, if current trends are employed in advantage of heritage tourism. While there is growing competition of festivals on heritage sites, the creation of relevant networks and their exploitation as a single product makes it more powerful. According to the “Gazinta philosophy” which is defined as the optimal effective use of time, consumers nowadays seek to participate in a large amount of varied activities rather than spending more time on fewer ones (Burns 1993). The network utilizes this characteristic to the maximum by respectively recommending products. The choice of heritage sites where festivals are conducted provide a sense of authenticity at a time when the trend in heritage tourism is of increasing demand. In the ever-changing and uncertain political and economic environment of modern society, consumers feel more secure in the past. Furthermore, the environment where modern consumers live is multicultural. It has been observed that consumers tend to seek the concept of multiculturalism when traveling. The proposal of the network of cultural festivals meets and promotes this tendency thus strengthening the proposed product (Chhabra 2010, 16).

To Proposal for the Establishment of a Network of Cultural Festivals in the Mediterranean. Discussion and Conclusion

All cultural festivals on sites of cultural interest in Mediterranean countries, constitute the creation of a network system—routes that will be major tourist attractions. The network system is a living organism, with ephemeral character, which is created by overlapping concepts such as time, location, history, architecture and art. It constitutes a hybrid organism that is reviewed and recreated and that evolves through time and place through the ongoing dialogue between culture, society, and space-monument, keeping our cultural memory active.

The proposed system consists of individual networks that overlap and include both memory spaces (archaeological sites, monuments, temples, etc.) which are combined with cultural festivals and popular tourist destinations.

The proposed system networks-paths can be defined by the theme of the Festival, the timeline, the architectural interest of the monument-reception area, the character of space, the geographical location and the duration of the Festival.

In order for the organizational system of cultural festivals in the form of a network to work, a basic prerequisite is the establishment of a management body, from all the countries involved, which will deal with substantive, organizational, coordination, and management issues in each region with the other regions.

This system facilitates the user/tourist in selecting and creating their own path based on their own personal interests and preferences. This, in turn, serves the expansion and development of cultural tourism with the cooperation of entities in different countries of the Mediterranean that share the goal of promoting the local culture of each region and country.

The incorporation of a festival into the proposed network urges a set of complementary tourism benefits such as cruises, which are constantly increasing in the Mediterranean. The development of the cruising industry facilitates in exceeding national boundaries and creating wider cultural attractions in the Eastern Mediterranean including the monuments of ancient and modern Greece, southern Italy, southern France, Italy, Cyprus, and Turkey. Ultimately, this creates international cultural tourism, targeting higher social and cultural layers thus increasing tourism.

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Regional Museums as Centers of Strengthening the Local Cultural Identity and as Tourist Attraction. The Case Study of the Display and the Educational Program of the Archaeological Collection of Thespies (Biotia, Greece)

Popi Georgopoulou and Elpiniki Riga

Abstract The case of Thespies inserts a new dimension to the concept of “educational program,” since the learning needs acquire a centripetal character to be subsequently radiated into an array of learning tools and activities. The aim of the educational material is to illuminate aspects of the culture and history of ancient Thespies, and to highlight the interdisciplinary approach applied right through the excavation preparation stage up to the exhibition and interpretation of the findings. The involvement and substantial assistance the local society has offered, during the reshaping of the space, serve as affirmations of the institutional social and instructive role that every cultural institution primarily ought to perform. The present study thus attempts to address the following questions:

- What is networking museums and how can be related to the use, reuse, and restoration of buildings?
- Is it possible for new museum to revive the region where it is located?
- Can the encouragement of active participation of the public in the preparation of a museum to guarantee the creation of a relation between the public and cultural institution?

Keywords Museum exhibition • Special interest tourism • Museum education • Museum network • Reused building • Interior architecture

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Introduction

Thanks to the total amount of its cultural heritage, Greece can create those conditions needed for the sustainable development of its local cultural institutions, to the antipode of the national and in general European economic crisis. Archaeological, folklore, historical, and the rest of the collections can be formulated in morphologically interactive environments that would take advantage of all the means available and address different target groups, from school classes, to European visitors from abroad. Organizing and mapping of a strategy at the level of sectors, but also the admission into a wider network of museums and cultural institutions is needed. The Archaeological Collection of Thespies belongs to the wider network of museums of the Ephorate of Antiquities of Boiotia, in Thebes. Findings from local excavations, however, constitute reasons for developing local existing buildings and the involvement of local people (residents, educators, and local authorities). In the case of Thespies, the central archaeological administration, local authorities, and the local community cooperated in harmony. Thus, the social role of the museums is fulfilled, since museums are complex cultural institutions uniquely concerned both with collecting and preserving the material cultural heritage, but at the same time communicating its meaning (Lord and Lord 1997).

Reusing Buildings as Regional Museums

Buildings are shells, pots of social activities and express, out of necessity, in the space the activities they include, the general social values and the current social understanding for the activities that they host. The buildings act, as a rule, stabilizing and enforcing social organization and its values (Tzonos 2013). Existing spaces constitute the carriers of the collective memory of a place. Consequently, future use ought to be such so as to project its first image. In cases, of course, where there is a richness of building heritage and any kind of equipment is preserved, the aforementioned uses contribute even more to the promotion of their historic and emotional value (Zivas 1994). The reasoning of reuse does not have to do solemnly with saving from the point of building construction, but it also boosts the preservation of previous structures, the protection of building heritage, contributing at the same time to the expansion of local production, local coherence, the urban, environmental, and aesthetic upgrading of a region and the town itself. A particularly interesting case of reuse of old buildings is the case of reuse of old monuments as museums, which has recently received increasingly greater dimensions in our country.

Cultural Tourism and Sustainable Tourism Development

The programming of sustainable tourist development depends on the specialized and decentralized planning of tourist development, with emphasis on the balance among the economy, the society and the environment. Tourism has the potential to contribute decisively to peripheral development enhancing the financial activities of the country's periphery (Constantin and Mitrut 2007).

The revenues from tourist activity can in their turn boost the local community and the development of tourism will enhance its growth, following the models of sustainable development, with due respect to both the human and the natural environment. The need to protect the cultural heritage and make it known, as well as the use of abandoned spaces and historical monuments can be an important tool for the development of cultural tourism (Martha et al. 2015).

Cultural tourism is one form of tourism which can develop, respecting the principles of sustainable development and contributing to the viable growth of the region (Constantin and Mitrut 2007).

Museums and archaeological spaces can constitute a factor of sustainable development, contributing to the creation of businesses and job places, after the formation of offer conditions of goods and services. The existence of new successful museums can differentiate the offered tourist product of the region in its whole (Deffner and Metaxas 2006). However, all these actions should take place with due scientific competence and on the basis of strategic planning (McKercher and Du Cros 2002).

As far as small peripheral museums are concerned, the marketing strategy should first turn to local communities. In this way it contributes to the local economic development, but also to the creation of contemporary infrastructure, as well as to the maintenance of the cultural heritage of the region (Pavlogeorgatos and Constadoglou 2005). The residents of the region may contribute voluntarily and support the activities of the museum and constitute along with their friends and relatives, the future audience (Cole 2008). Besides, the museums are valued because they are institutions that contribute to social value (Burton and Scott 2007).

Case study: The Archaeological Collection of Thespies

© Ephorate of Antiquities of Boiotia, Ministry of Culture, Education and Religious Affairs, Hellenic Republic

Museum designing, curation, texts, designing & production of educational programs: Popi Georgopoulou, Museologist (MA)

What and Where?

The educational program with the general title “**Ancient Thespies: a story of gods and humans,**” hosted in the Archaeological Collection of Thespies, reflects the outcome of a long interdisciplinary trajectory that started off in advance of the public work involving the construction of the major peripheral road ‘Thisbe-Thebes’. The museum is hosted in the old school of the village. Thus, the building keeps its educational and social role.

The Concept

In most cases, Greek museums usually provide educational material for the fulfillment of pupils' needs, on an intermittent basis, alongside permanent exhibitions, or in specially allocated to spaces for educational programs.

The case of Thespies, however, adds a new dimension to the concept of "educational program," since the learning needs of all pupil groups acquire a centripetal character to be subsequently radiated into an array of learning tools and activities. More precisely, this is a pioneering attitude toward the concept of museum learning that, in fact, gives prominence to the pupil-researcher. Thus, an expanded educational schedule comprises suitable shaping of the venue and production of educational material inside and outside the museum. The aim of the educational material is to illuminate aspects of the culture and history of ancient Thespies and to highlight the interdisciplinary approach applied right through the excavation preparation stage up to the exhibition and interpretation of the findings.

The first exhibition room displays the myths, the battles, the local sculpture workshop, the presence of the Muses, and the funerary customs that always testify to the perceptions and anxieties of the people in the antiquity. In the second room, which is oriented toward the needs of school groups from the public, arrangements have been made to facilitate teachers, as well as parents. Via informative material and specially designed learning activities, all the excavation stages are presented, all relevant terminology is clarified, reference is made to all scientific fields of expertise involved in it, providing stimulation for the cognition and comprehension of information.

The architectural parts (spolia) that lie in the courtyard were used to the greatest advantage as to extend the central educational trunk. Columns, columellae, capitals, and funerary stelae compose the "Stone Garden!" An educational booklet, with the ground plan of the courtyard, suggests discovery activities, encouraging a more tangible understanding of the impact the environment has on the creation and preservation of the works of man.

The Target Groups

Addressed not only to Thespians, but also to all Boeotians, as well as to visitors from all over Greece and abroad, the educational material has the ambition to establish a pleasant knowledge-generating environment. Directed along the same lines also is the museum-kit, titled "The earthen book of Thespies," an assemblage of portable loan educational material, intended for school groups in nearby or distant schools, in order to develop, diversely and substantially, the relationship between museum and school. It opens up an opportunity for multisensory activities, such as table question game, memory card game, plot for theatrical performance, propositions for paper cutting work, etc. Pupils of all age grades can optimize the use of the educational material for preparation in the classroom, aiming at an enriched museum experience that promotes not just a passive tour but rather an essential understanding of the cultural remains of human societies. The material is

complemented by the educational folder that has been designed for the Thespian exhibits of the Archaeological Museum of Thebes. The visitor of the Theban museum has the opportunity to spot in it Thespian works of art and contemplate their meaning. The involvement and substantial assistance the local society has offered, during the reshaping of the space, serve as affirmations of the institutional social and instructive role that every cultural institution primarily ought to perform, developing an extrovert aspect to its character through the reinforcement of social bonds between it and the groups of the public.

The Engagement of the Locals

The spontaneous interest of the inhabitants and selfless offer of time and work on their side exemplifies the inbred tendency of all for the protection and promotion of cultural heritage. This fact reveals the volition for engagement and participation in the preparation and the operation of the institution. Their exemplary cooperation lays the foundation for the sustainability of the museum in the future, since this depends on the protection and the feedback from the local community. A vivid and active participation from the locals can only ensure the growing interest of the tourists and the travelers.

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Cultural Policy and Marketing Management: The Case Study of New Museum of Acropolis

Evangelos Papoulias and Theoklis-Petros Zounis

Abstract Cultural assets need management and marketing for their existence and development. Even if the ultimate goal is to preserve exactly as they are, with no public access to them, positive management and marketing are still needed to protect them from undesirable change or irreversible damage. Marketing is a customer-focused management tool that can be used to help cultural or heritage attractions achieve their wider organizational goals by linking customer desires with appropriate goods and services. Marketing is an integral element in the overall planning and management process adopted for any cultural development. Marketing means not only to convince some people to use the product as it is but it also means to convince the target audience to enjoy their experiences. The good marketing could be a useful means of selection of appropriate visitors, which can help with problems of sustainability at high-profile attractions and goals. In this paper, it is presented and analyzed the applications of marketing management and targeting in the analysis of the case study of New Museum of Acropolis.

Keywords Cultural policy · Marketing management · New museum of Acropolis · Cultural development

Introduction

Marketing is a customer-focused management tool that can be used to help cultural or heritage attractions achieve their wider organizational goals by linking customer desires with appropriate goods and services (Kotler and Turner 1989). Marketing is

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an integral element in the overall planning and management process adopted for any cultural tourism attraction (McKercher and Du Cros 2002).

Marketing is much more of convincing some people not to use the product as it is about convincing the target audience to enjoy their experiences. Brett (1999) states that good marketing can be a useful means of selection of appropriate visitors, which can help with problems of sustainability at high-profile attractions.

This paper examines the applications of marketing management (marketing mix and identifying market segments) and targeting in the analysis of the case study of New Museum of Acropolis.

The Greek Cultural Policy in Cultural Heritage: The Key Elements

The Greek cultural policy can be better understood in the light of the heritage, as well as monuments and museums of Greece (Dallas 2007). The primary cultural policy priority is the protection, preservation and valorization of the tangible and intangible cultural heritage of all periods of Greek history. More specifically, the Greek cultural policy about heritage issues was manifested in (Dallas 2007):

- Funding of large-scale archaeological research and site restoration projects, both in Athens and in the regions;
- New museum building projects, intended to provide necessary storage space for newly-found archaeological artifacts, and to become a focal point for visitors; and
- Successful efforts to increase the number of sites and monuments bestowed the World Heritage Monument or Site status by UNESCO through the provision of adequate documentation.

Marketing Mix

Marketing Mix is the mixture of controllable marketing variables that the firm uses to pursue the sought level of sales in the target market (Kotler 1984, as cited in Middleton 1994). Schewe (1987) defines marketing mix as the combination of activities involving product, price, place, and promotion that a firm undertakes in order to provide satisfaction to consumers in a given market. These elements reflect the practical decisions that must be made when matching organizational objectives with consumers' needs and wants to the products or services provided. Each of the elements of the marketing mix, more commonly known as the four Ps of Marketing: Product, Price, Place and Promotion.

Product: Adopting a marketing approach when considering product development empowers the asset managers. Empowerment comes from being able to control the core product, and thus the experience, to reach the target audience. By contrast, the failure to adopt a marketing approach when developing products could very likely result in inappropriate products being created that will appeal to less desirable type of user.

Price: Price is the only element of the marketing mix that produces revenue. As such, it serves a tactical as well as an economic role for an organization (Holloway and Robinson 1995). The price charged sends many signals about the value of the product being offered and, as such, must be commensurate with the quality of experience. Price also plays a role of democratizer or discriminator of experiences (McKercher and Du Cros 2002). A low price may facilitate access for all. On the other hand, a high price may actively discourage some people from participating.

Place: The place or distribution channels used to get the product into the market place and will influence the amount of visitation, the type of visitor, and the quality of experience expected. There are two types of distribution channels: the direct distribution, where asset managers distribute the product directly to the consumer, and the indirect distribution, where the product is distributed through a variety of intermediaries (ex. friends and family, media, tour operators, travel agents).

Promotion: The promotional aspect of the marketing mix is the most visible element as it usually is divided into a further mix of types of advertising: newspaper, magazine, radio, television, direct mail, raffles, and other public relations activities (Byrnes 1999). The basic aim of promotion is to prompt people into positive action after they have received information about the products or services offered (Richardson 1996). Effective communication will enable cultural heritage attractions to effectively segment the market and send messages that will appeal to the desired type of visitor. Further, it will also help perspective visitors self-select whether the product being offered is suitable for their needs.

Identifying Market Segments

Marketers use the term market segment to identify a group of buyers who have similar wants and needs (Schewe 1987). Once a market segment has been identified, the marketer begins the process of target marketing by developing a mix of the four P's aimed at the market (Schewe 1987).

A market can be segmented in a number of ways by introducing different variables and seeing which ones shed the most light on cultural organization's market opportunities. The major geographical, demographic and psychographic variables are used in segmenting consumer markets.

Geographical Segmentation: Geographical segmentation divides the market into local visitors, short-distance visitors, long-distance visitors, and overseas visitors. It is obvious and logical that visitors from different localities will seek different

offerings and have different needs. The cultural organization can develop different programs to attract visitors from different locations.

Demographic Segmentation: Demographic segmentation divides the market into different groups on the basis of variables such as age, sex, family size, family income, education, occupation, religion, and ethnicity. Demographic variables have long been the most popular bases for segmenting consumer groups. The reason is that consumer wants, preferences, and usage rates often are highly associated with these variables (Kotler and Kotler 1998). Even when the target market is described in non-demographic terms (ex. Personality types), a link back to demographic characteristics is necessary in order to know the size of the target market and how to reach.

Psychographic Segmentation: People within the same demographic group can exhibit very different psychographic profiles. The cultural heritage organizations can classify potential visitors according to the following psychographic characteristics:

- **Social Class:** Social classes are relatively homogenous and enduring divisions in any society that is hierarchically ordered, and class members share similar values, interests, and behaviors.
- **Life Style:** Even within a social class, different consumer lifestyles are found.
- **Personality:** Consumers exhibit different personality characteristics (ex. Dominance, dependence, gregariousness, introversion).

The New Museum of Acropolis

The main target of its construction was that Greece could and should obtain a contemporary museum for the cultural wealth of the monuments of Acropolis. According to Papoulias (2014), the advantages and disadvantages of building a new museum had been analyzed in the public dialogue as the political will of the Greek Government is needed to ensure the funding from the European Union. Finally, before funding, the “ongoing” evaluation report of the Operational Program “Politismos” proved the specific arguments about the benefits of the construction. For example, without the new museum of Acropolis the “impact assessment” of visitors of museums in Greece has been estimated at 75 % and with the new Museum of Acropolis at 150 %. The new museum of the Acropolis is an international pole of attraction (Kavoura and Bitsani 2013).

Marketing Mix

The cultural marketing of the new museum of acropolis, according to the 4Ps Marketing Mix and six years after the inauguration presents the following:

- **Product:** The cultural organization of museum, as a product, is very different from products of the ordinary market. The ultimate goal of the museum products is to make the museum attractive to the public and increase the visitors. The permanent collection, the current exhibitions, the café in terrace, the objects at the shops constitute the products of the museum.
- **Price:** Ticket prices are maintained at an exceptionally low level and the Museum is generous in its response to requests for free entry in order to enable as many people as possible to visit. Museum ticket prices are kept at 5 euro for a full entry ticket. This is a low admission fee compared to international standards. This price policy reflects Museum strategy which favors people to visit the Museum. A large number of eligible visitors (42 %) also continued to visit the Museum free of charge or at a discounted rate.
- **Place:** Located in the historic area of Makryianni, 300 m southeast of the Parthenon. The top floor (Parthenon Gallery) offers a 360° panoramic view of the Acropolis and modern Athens. (The main entrance to the museum is on the Dionysios Areopagitou pedestrian street, which links it to the Acropolis and other key archeological sites in Athens). The museum of Acropolis is a good example of integrated conservation of monument according to the rules of European Conventions.
- **Promotion:** The Official Page of the Museum—www.theacropolismuseum.gr offers useful information for all the functions and facilities of the museum. As a modern institution, every potential visitor may have access to basic information at least in seven languages and through social media (FB, Twitter, Google etc.). From October 2010 the Museum took over the management of the Museum shops and in spite of the extreme constraints of the legal environment, in which the public sector operates, was able to offer visitors quality products associated with the Museum's collections and its activities. The demonstration of Museum has undertaken the management of the restaurant and cafe with daily monitoring of its operations. All these services are an integral part of the Museum and should comply with its policies and practices.

Identifying Market Segments

Without visitors a Museum is a valuable storeroom. The main goal of Acropolis Museum is to provide access to a quality experience within the Museum so that people wish to come back. Over time it is getting obvious that visitors build a relationship with the Museum—indeed a fondness for a stimulating, friendly and pleasant environment that provides an incentive for returning again and again.

Geographical Segmentation: Museum visitation numbers are a measure of the Museum's success but also reflect other external factors such as the number of tourist arrivals to Athens and the disposition and mood of the local community. In spite of current conditions the Acropolis Museum managed to achieve a ranking of

25 in the annual breakdown of museums internationally by visitor numbers (The Art Newspaper, April 2011). According to the last annual report of the museum (2014–2015) the total visitor number was 1.5 million of which the 73 % was visitors independently and the 27 % was in organized groups. It should be mentioned that the biggest part of visitors are Greeks following by French visitors and the smallest part are Germans.

Demographic Segmentation: In the annual report (2014–2015) there is only information about the age of groups.

Psychographic Segmentation: The museum demonstration has emphasized in two categories in psychographic demonstration. The first one is school visitors and the second is virtual visitors. Both categories include demographic information about the age.

Conclusions

According to the above analysis we understand the importance of culture marketing for successful demonstration. Every cultural manager should keep in mind the following:

- The use of culture for the advancement of local development
- The improvement of cultural infrastructures and services
- The creation of a new framework for cultural marketing with clear targets at the central level and specific objectives at the local level (everyone of the implementation bodies should know about the details of the total strategy in order to support their function)
- Specific marketing tools based on the improvement, enhancement and specific needs of the cultural assets and cultural values of Greek heritage.

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Part X

Symposium on Business Informatics and Modelling

Organized by: Damianos Sakas
University of Peloponnese

Aims and Scope

The symposium aims to promote the knowledge and the development of high-quality research in business informatics and modelling fields such as business informatics, simulation modelling and business modelling that have to do with the applications of other scientific fields and the modern technological trends that appear in them.

Topics

Business Modelling, Business Informatics, Business Model Innovation, Simulation Modelling, E-Business, E-Learning, Business Process Engineering, Enterprise Architecture, Enterprise & Conceptual Modelling, Modelling Methods, Collaborative (Enterprise) Modelling, Business Management, Enterprise & Business Transformation, Methodologies for Business Transformation, Service Innovation, Business Data Engineering, Knowledge Integration, Knowledge Management, Data Science, Business IT, Business Value, Business Analytics, Social Networks Analysis, Social Computing, Tools for Monitoring Risk, Human Computer Interaction, E-Market, Mobile Computing, Service-Oriented Computing, Machine-to-Machine Communications (M2M), Smarter Planet, Information Technology, Computer Science, Business Processes in Cloud (BP-Cloud), Cloud Computing, Security and Compliance in Business Processes, Emerging Technologies, Business Process Modelling, Workflow Management, Model-Driven Architecture (MDA), IS Modelling, Open-Source, Business Process Management, Modelling Process Architectures, Business Rules Management, Modelling Methods, Languages and Tools, Enterprise Modelling, Business Model & Service Innovation, Data and Knowledge Integration, Model-Driven Computing, Business Economics, Economics of Business Strategy,

Global Business, Social Informatics, Business Informatics Security, Management Systems, Social media marketing.

Main Workshops

1. Business Modelling

Organized by: Damianos Sakas, University of Peloponnese, Department of Informatics and Telecommunications, Greece

Description:

Simulation modelling provides a powerful methodology for advancing theory and research on complex behaviours and systems. This session aims to promote the understanding of simulation methodology and to develop an appreciation of its potential contributions to management theory by describing the nature of simulations, its attractions, and its special problems, as well as some uses of computational modelling in management research.

2. Smart e-learning

Organized by: Yulia Taratuhina, Higher School of Economics, Business and Management, Russian Federation Zinaida Avdeeva, National Research University Higher School of economics, Innovation and business in IT, Russia

Description:

Cross-cultural multimedia didactics—Massive Open Online Courses (MOOC). The principles of the mapping of the personal study pathway in electronic educational environments—Best worldwide practices on smart e-learning. The problem of choice of appropriate multimedia technology and teaching methods in e-learning for different culture groups—Smart e-learning pedagogy—Smart e-learning environments in different cultures (countries)—Hardware and software systems, portals and platforms for smart e-learning—Smart e-learning: concepts, strategies and approaches—Smart e-learning teaching strategies.

Keynote Speaker

Keynote Speaker



Prof. Saulius Gudas
Vilnius University, Institute of Mathematics and Informatics

Prof. Saulius Gudas Vilnius University, Institute of Mathematics and Informatics

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Invited Speaker

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Information Systems Engineering and Knowledge-Based Enterprise Modelling: Towards Foundations of Theory

Saulius Gudas

Abstract The enterprise information systems engineering methodologies do not yet have a theoretical framework. One and only exception is data model design technique which is based on the internal modelling paradigm, because it uses concept of functional dependence in the normalization procedure. A theoretical soundness of knowledge-based approach towards enterprise IS engineering is assured by the use of principles of second-order cybernetics. An enterprise is considered as an entirety of self-managed activities correlated by management functional dependencies. New internal modelling views—a control view and a self-managing view—are included for capturing the management transactions—the key components of the subject domain knowledge. A normalized systems development life cycle is defined as required component of knowledge-based IS development.

Keywords Knowledge-based systems engineering • A self-managed activity • A management transaction • A management functional dependency • An elementary management cycle

Introduction

A theory of enterprise information systems engineering has not been developed yet. A wide range of approaches towards IS engineering (methodologies and methods) do not yet have a theoretical framework. In general enterprise IS development starts with the analysis and modelling of some subject domain, various conceptual modelling languages (BPMN, IDEF, EPC (ARIS), etc.) are available for representing acquired models. All these modelling techniques have been developed in

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the context of a black box paradigm (an external modelling viewpoint), which is formally defined as (input, process, output) modelling. An internal mechanism of a subject domain is usually hidden, internal causal relations and dependencies are unknown. One and only exception is data model design technique (DB design phase) which is based on the white box paradigm (an internal modelling viewpoint), because it uses concept of functional dependence in the normalization procedure.

The enhancement of IS engineering methods requires essential knowledge about the consistent pattern (laws) of information transformations between and within management activities. The knowledge-based (KB) methodologies are obliged to use a priori knowledge about essential properties of domain (in accordance with principles of white box approach). Thus the first assumption and condition for enterprise KB IS engineering is the relevant model of the problem domain.

The paper defines the assumptions and key concepts of the theoretical framework for enterprise software systems knowledge-based development. The principles of enterprise information systems KB engineering are formulated in the context of internal modelling paradigm. Accordingly new control theory-based modelling views—*control view and self-managing view*—are included for capturing relevant subject domain knowledge. A subject domain is enterprise considered as an entirety of self-managed activities. A management functional dependence (MFD) is introduced as a primary (internal) reason for the emergence of management transactions in enterprise (Gudas et al. 2016; Gudas 1991.1, 1992.1, 1993, 1994).

This paper is organized as follows. First, we will discuss the scope of the related works towards methodological issues of IS (Sect. [Motivation and Related Works](#)). Then we will discuss some basic technical preliminaries and fundamental theoretical issues concerning the basis for the enterprise management modelling (Sect. [Technical Preliminaries](#)). Elements of enterprise KB modelling are consistently defined in Sect. [Foundations of Enterprise Management Modelling](#). The essentials of enterprise information systems (IS) engineering theory are discussed in Sect. [The Essentials of Information Systems Engineering Theory](#). After that we have conclusions concerning the key elements of enterprise KB modelling and enterprise information systems KB engineering.

Motivation and Related Works

Attempts of systems engineering theoretical grounding have a long history: there are about 154 distinct theories identified in the journal articles (Olsen 2010), and 89 theories are used in the IS research field (Larsen et al. 2015). Methodological issues of information systems development and theoretical principles of IS engineering are analysed in Gregor (2005), Hirschheim et al. (2003), Hanseth et al. (2004), Galliers (2007), Iivari (2003), Khazanchi et al. (2001), Falkenberg et al. (1998), Čaplinskis (1996, 1998), Carlsson (2010), IST (2012) and others.

A number of methods and techniques for enterprise software systems (information systems) development emerged: structured systems analysis and design

method, object-oriented design method (UML, OML, IDEF4), rapid application development (RAD), dynamic systems development method (DSDM), Scrum (since 1995), Rational Unified Process (RUP), extreme programming, Agile Unified Process (Booch et al. 2000).

All these modelling methodologies and techniques have been developed in the context of black box paradigm (external modelling viewpoint). Internal mechanism of subject domain is usually hidden; deep structure and internal causal relations and dependencies are unknown. Langefors' approach remains important to this day; it deals with the fact that IS engineering must integrate the information systems theory and organizations management theory (Langefors 1966, 1987). Noteworthy attempts to formulate IS theoretical basis are as follows: FRISCO report (Falkenberg et al. 1998), the analysis of IS development paradigms (Hirshheim and Klein 1989; Hirshheim et al. 2003), the systemic analysis of the IS and formalization of its concepts (Cano 2003), the analysis of the demand for software engineering theory (Jacobson and Meyer 2009), the analysis of the relation between IS paradigms and IS development methods (Nabende et al. 2009), principles of model-driven engineering (MDE), principles of architecture-driven IS engineering by combining enterprise strategies and IT strategies (Henderson and Venkatraman 1990). Theoretical preliminaries of our approach towards enterprise modelling are comparable in some extent to the enterprise ontology modelling theory (Dietz 2003, 2006).

Technical Preliminaries

Concept “enterprise” is common name of subject domain in IS engineering methodologies. *An Enterprise* is one or more organizations sharing a definite mission, goals, and objectives to offer an output such as a product or a service in (ISO 15704 2000). In the context of ISE *an enterprise* is considered as a model of *organizational system* represented in some modelling language (Ackoff 1971; Gudas 2012a). Traditional IS engineering methodologies are based on the analysis of an IS domain—enterprise [subject world in (Jarke et al. 1993)], which is not defined formally as some type of systems. Herein, subject domain modelling is based on the black box paradigm (i.e. external modelling), and various IS development methodologies use different basic viewpoints, for instance, data view, process view, event process chain view, goal-driven, object-oriented view, workflow view, etc.

Knowledge-based IS engineering methodology should be theoretically sound and based on the internal modelling paradigm (Gudas 2012a). Theory is based on the principles of second-order cybernetics (Heylighen et al. 2001) and a modified semiotic triangle (Fig. 2) (Gudas 2012a, b) developed on the basis of extended semiotic triangle presented in FRISCO report (Fig. 1) (Falkenberg et al. 1998). The modified semiotic triangle was developed (Fig. 2) by separation of information (knowledge and objectives needed to interpret domain and represent the domain

Fig. 1 The semiotic triangle of FRISCO (Falkenberg et al. 1998)

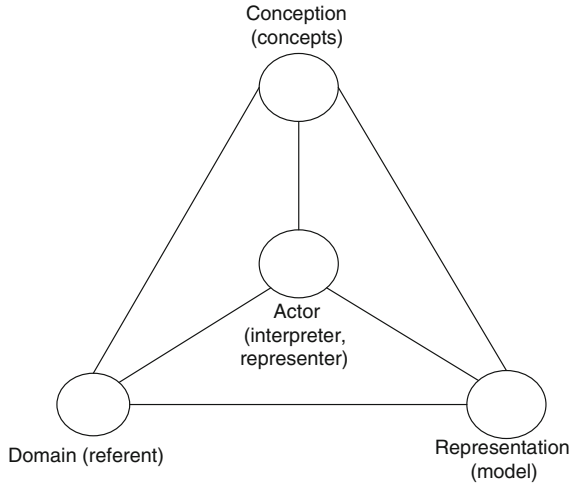
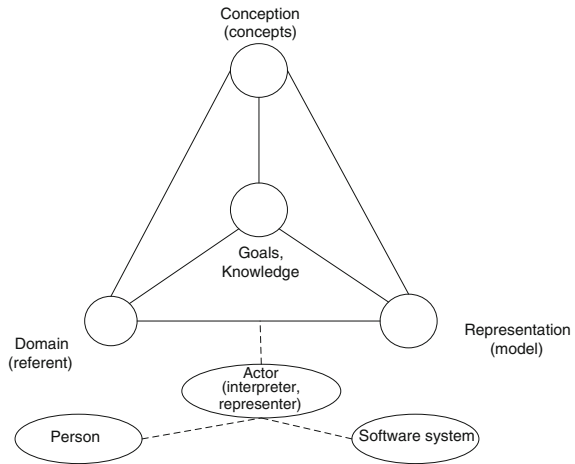


Fig. 2 The modified semiotic triangle



model) from the infrastructure component—an actor (an operator) or software system themselves (Gudas 2012a, b).

Second-order cybernetics is the cybernetics of observing systems instead of observed systems in the first-order cybernetics by von Foerster or autonomous systems instead of controlled systems in the first-order cybernetics by Varela (Umpleby 2001). In other words principles of a second-order cybernetics consider modelling of a real-world system as white box, an analyst is aware of the inherent characteristics of the real-world system—regularities, consistent patterns, understands the meaning and the reasons of causal dependencies (laws of subject domain).

Foundations of Enterprise Management Modelling

Assumptions for capturing deep knowledge of subject domain are as follows:

Assumption A1. Domain modelling paradigm The internal modelling paradigm is prescriptive to reveal a deep structure and behaviour of the subject domain in enterprise IS knowledge-based engineering.

Assumption 2. Additional domain modelling views The *control view* and *self-managing view* are necessary views of domain modelling to capture control feedback loop in enterprise management activities and to ensure the integrity of all layers of organization management hierarchy.

Assumption A3. Hierarchy of management information transformations The subject domain of ISE is considered as a hierarchy of layers, which captures specific domain knowledge of data/information/ knowledge/goals transformations.

Assumption A4. A unified building block of an enterprise management internal model The unified building block of enterprise management model is an Elementary Management Cycle (EMC), which defines internal details of management transactions (F x P) between management functions F and enterprise processes P. The EMC is a self-managing system, and none of its constituent elements are self-managing systems.

Assumption 5. Enterprise management model The enterprise management model (EMM) is defined as the entirety of the management transactions in the abstract Space of Processes (PS):

$$PS = (\text{Aggregation (AG)}, \text{Generalization (GE)}, \text{Time (T)}), \quad (1)$$

When every management transaction is modelled as the EMC framework.

Assumption A6. Coordination of management activities While modelling in the Space of Processes, coordination stands for the influence of one EMC on another one EMC', when the state of the coordinated EMC' is influenced by information received from the coordinating EMC thus changing the flow of the EMC'.

So, the assumptions A1–A6 (and assumptions A7 and A8 in the next section) define the basic constraints (requirements) for theoretical and methodological solutions of KB IS engineering foundations presented in (Gudas 2012a). The major features of solutions developed in (Gudas 2012a) that meet predefined assumptions A1–A6 of KB enterprise modelling are described below in brief due to limited space of the manuscript.

- Solution 1. Domain modelling paradigm

A white box model (knowledge-based) of domain is constructed, first of all, using a prior knowledge about essential properties of domain (theoretical

knowledge of deep properties of domain) and, after words, the acquired information and measured data are considered and verified against prior knowledge.

- Solution 2. Additional domain modelling views

The popular IS and enterprise software engineering approaches apply various subject domain modelling views, for instance, a systems view (GST view), a data view (Smith et al. 1977), a process view (data flow diagrams (DFD), IDEF0, IDEF3, BPMN, etc.) (Giaglis et al. 2000), a workflow view (a type of process view), an object-oriented view, an event process chain (EPC) view, ARIS (Scheer 1994; Nuttgens 1997); a goal-driven view for requirements engineering and software development (KAOS, GBRAM, NFR Framework, i*/Tropos, etc.) (Van Lamsweerde 2001; Lapouchnian 2005); an enterprise ontology view provides frameworks: TOVE, DEMO (Dietz 2003), Core Enterprise Ontology: CEO (Bertolazzi et al. 2001), the Edinburgh Enterprise Ontology (EO) (Uschold et al. 1996), REA Enterprise Ontology and REA approach to business process modelling (Geerts et al. 2002, 1999; O’Leary 2010).

Assumption 2 defines *the control view and the self-managing view* as necessary additional views of internal domain modelling aimed to capture the management transactions, i.e. the control feedback loops of the enterprise management activities (Gudas et al. 2016). The *control view* is related with the methodologies introduced in management theory by H. Fayol (Wren et al. 2002), management methodologies of W.E. Deming PDCA cycle, Rummler–Brache methodology (Rummler and Brache 1991), etc. A control view considers a real world activity as an iterative sequence (a closed loop) of information transfer steps, concerned with goal-based resource allocation, transformation and performance indication. A self-managing view considers real world domain as a self-sufficient activity, which manage their own operation, i.e. as a self-managed system. The *self-managing view* is adaptation of the control theory principles for the modelling of information interactions inside management transactions (Gudas 2012a; Gudas et al. 2016).

- Solution 3. Hierarchy of management information transformation layers (assumption A3)

A typical management structure of organizational system is hierarchy of levels: mission statement and strategic management (top level, business management), tactical management (middle-level, business processes management), operational management (low-level, process control). The subject domain of ISE is considered as a hierarchy of management information transformations layers (assumption 3); every layer captures specific management information corresponding to definite viewpoint.

The hierarchy of management information transformation layers is defined from the viewpoint of management and control as follows: a layer of management functional dependencies (MFD); a layer of management transactions; a layer of elementary management cycles, a layer of tasks.

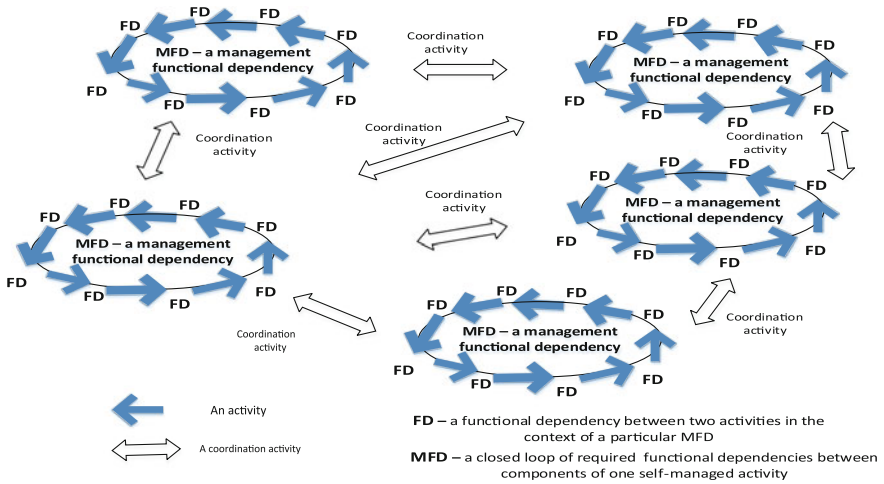


Fig. 3 An organizational system as an entirety of management functional dependencies (MFD)

A *management transaction* is considered as a closed-loop sequence of information transformations aimed for implementing particular MFD (Gudas et al. 2016). A management transaction defines a closed-loop sequence of goal-driven activities required to perform a particular management function F_j focused on the management and control of some enterprise process P_i (Gudas 2012a). This understanding of *transaction in the context of KB ISE* is comparable with transaction definition in the context of business management—“the action of conducting business management” (OED 2015). A *management functional dependency* (MFD) is the primary causal dependency between activities that are necessary to perform some *management transaction* for achieving some enterprise goal. Enterprise management functional dependency (MFD) consists of a consistent series of functional dependencies (FD) making a closed loop of activities required to perform management function F focused on the of some enterprise process P :

$$MFD = \{FD_1, FD_2, \dots, FD_i, \dots, FD_n\} \tag{2}$$

An organizational system as an entirety of management functional dependencies is depicted in Fig. 3. In our approach management functional dependencies (MFD) are decomposed into two steps: (1) defined as management transaction ($F \times P$) (Fig. 4), and (2) defined as an elementary management cycle (EMC) (at the layer of elementary management cycles, Fig. 5).

Hierarchy of management information transformation layers is based on the separation of concerns as follows:

1. From the viewpoint of required (by management strategies) causal interactions an organizational system is a system of management functional dependencies (MFDs);

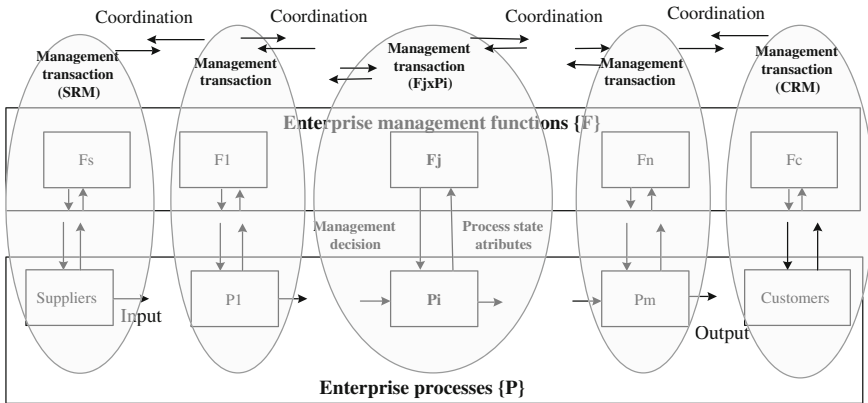


Fig. 4 Detailed supply chain model as a system of management transactions $\{(F_j \times P_i)\}$

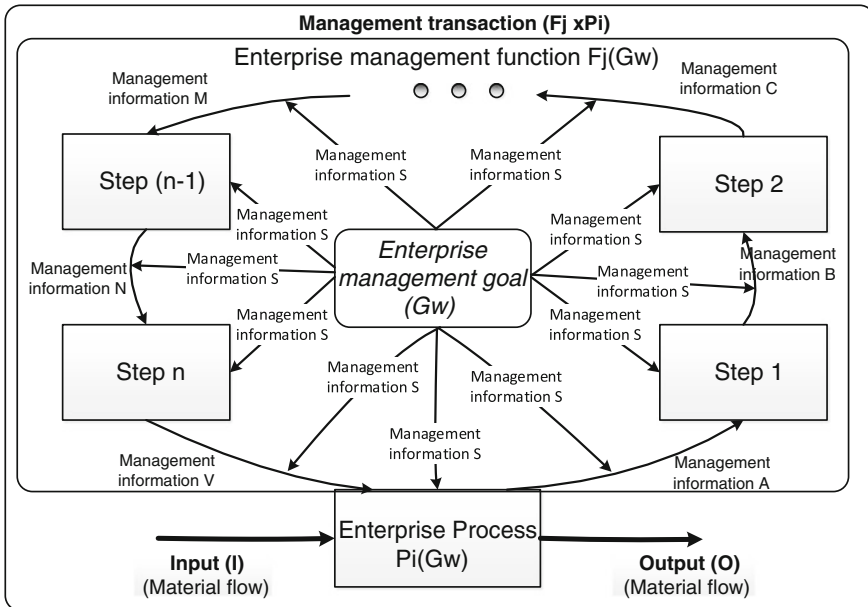


Fig. 5 The elementary management cycle (EMC) defines internal structure of management transaction $(F_j \times P_i)$

- From the viewpoint of management and control an organizational system is a system of management transactions between enterprise management functions F and enterprise processes P , and is defined as Detailed Supply Chain model (DSCM);

3. From the viewpoint of management and control the detailed conceptual structure of management transaction is defined as an elementary management cycle (EMC);
4. From the organizational viewpoint an organizational system is defined as a system of managed processes (MPs), wherein each MP is self-managed activity responsible for implementation of definite MFD (i.e. EMC).

The DSCM in Fig. 4 was developed on the basis of the M.Porter's value chain model (VCM) and modified for the purposes of the IS engineering in (Gudas 2012a, b). Some interaction between some enterprise management function F_j and enterprise process P_i ($F_j \times P_i$) emerges in the DSCM only if it is required by some particular *management functional dependency* (MFD).

- Solution 4. Semantic building block of enterprise management internal model (Assumption A4)

The Elementary Management Cycle (EMC) is major building block of enterprise management model (Gudas et al. 2016), which defines internal details of goal-driven management information transactions ($F \times P$) (Fig. 5). In other words the EMC is atomic component of enterprise management model in parallel with definitions of atoms and molecules of organizations in (Dietz 2003). The entirety of identified EMCs composes an enterprise management model, which is located in the abstract Space of Processes (see Fig. 6).

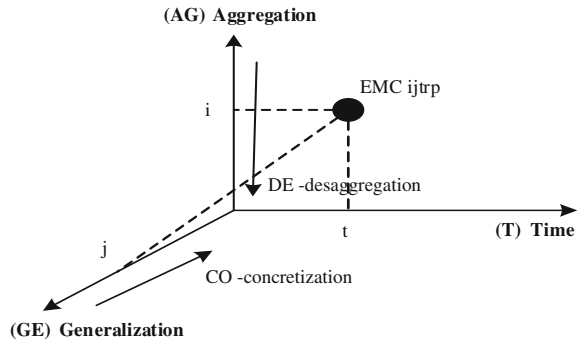
The EMC framework (Fig. 5) describes a deep structure of management transactions required by identified MFDs (Gudas et al. 2016). The EMC framework is adjusted for the IS engineering purposes in (Gudas 1991.1, 1992.1, 2012a) and (Gudas et al. 2016) by clustering the internal steps of EMC into four types of management information transformations as follows: interpretation (IN), data processing (DP), decision making (DM) and realization of decision (RE).

- Solution 5. Enterprise management model (Assumption A5)

The Space of Processes (PS) is defined as abstract three-dimensional framework $PS = (AG, GE, T)$ and is graphically illustrated in Fig. 6 (Gudas 1991.1, 1992.1, 1994, 2012a). The Space of Processes (PS) is tool to reveal hierarchies of enterprise management transactions along three axes AG, GE and T. The coordinate axes in the Space of Processes are defined as *processes* that create hierarchical structures of different nature. The meanings of the aggregation (AG) and generalization (GE) axes are close to the AG and GE meanings in the well-known article (Smith 1977) on the semantic modelling of data hierarchies.

Every point (i, j, t) in the Space of Processes (PS) corresponds to a management transaction which is described in terms of the elementary management cycle EMC. Therefore, the entire list of the Elementary Management Cycle (EMC) identifiers is described as follows: EMC (i, j, t, r, p) : here i —the index of the aggregation hierarchy level, j —the index of the generalization hierarchy level; t —the index of the time hierarchy level (life cycle stage), r —the index of the type of enterprise function F , p —the index of enterprise process P (a controlled process).

Fig. 6 The management transaction is defined as EMC (i, j, t, r, p) and is located in the Space of Processes PS = (AG, GE, T)



Definition of the enterprise management model (EMM). Enterprise management model (EMM) is as the hierarchy of the management transactions in the abstract Space of Processes PS = (Aggregation (AG), Generalization (GE), Time (T)), when every management transaction is defined as an EMC (i, j, t, r, p):

$$EMM = (\{EMC(i, j, t, r, p)\}, (AG, GE, T)) \tag{3}$$

So, an enterprise management model from the management/control viewpoint is a hierarchy of the management transactions defined as EMCs in the Space of Processes. From the organizational perspective the enterprise management model is defined as hierarchy of *self-managing processes* carried out by enterprise actors (organizational units). Managed process (MP) is a *self-managing process* carried out by enterprise actor (organizational unit) and is relevant to required particular MFD. The property of *self-managing* is that enterprise goals have impact on all other components of the managed process, these internal transactions are defined in the detailed EMC framework.

- Solution 6. Coordination of enterprise management transactions (Assumption A6)

There are a number of works on the research of business enterprise coordination, and a theory of coordination is being formulated by the following authors: (Crowston et al. 2006; Malone et al. 1990,1993; Mesarovic et al. 1970). For instance, coordination is defined as the management of dependencies among activities in (Malone and Crowston 1990).

We analyse *coordination* interactions from a different standpoint, as in coordination theory. Coordination interactions are considered as information interactions between management transactions (i.e. between EMCs) rather than as interactions between organizational units.

While modelling in the Space of Processes (PS), coordination of management transactions is defined as the informational influence of one EMC on another one EMC', when the state (value, parameter or otherwise) of any of the internal

Table 1 Coordination metatypes of management transactions

Coordination metatypes	A	B	C	D	F	G	H	L
Management function type r	1	1	0	0	1	1	0	0
Controlled process p	1	0	1	0	1	0	1	0
Time period t	1	1	1	1	0	0	0	0

components of the coordinated EMC' is altered thus altering the structure and behaviour of the EMC'.

The set of formally possible coordination types (semantically different variants of interactions between EMCs) are generated in the Space of Processes: PS = (AG, GE, T) (Gudas 1993, 2012a). Coordination types are classified according to the position of distinct EMCs in the Space of Processes with respect to the coordinate axes (AG, GE, T). Coincidences and differences of subset (r, p, t) identifiers values of any two EMC (i, j, t, r, p) and EMC' (i', j', t', r', p') refine coordination metatypes as follows:

- management function type r is the same ($r = r'$);
- management function type r is different ($r \neq r'$);
- controlled object (Process P) is the same ($p = p'$);
- controlled object (Process P) is different ($p \neq p'$);
- Two EMCs are of the same time period t ($t = t'$);
- Two EMCs are of different time periods t and t' ($t \neq t'$).

Possible semantically different variants of relationship cases of EMC including only identifiers (r, p, t) (i.e. coordination metatypes) are classified in Table 1 (here: 1—"the same", 0—"different").

Coordination metatypes are a systematical basis for creation of a coordination taxonomy, which includes all identifiers (i, j, t, r, p) of any two EMC (Gudas 1993, 2012a). Possible coordination types and cases of two EMC (i, j, t, r, p) and EMC' (i', j', t', r', p') are clarified in (Gudas 2012a, Table 5.2).

The Essentials of Information Systems Engineering Theory

The principles of KB IS engineering methodology are aligned to theoretical constructs of a subject domain internal modelling (Gudas et al. 2004, 2005; Lopata et al. 2014). The theoretically motivated framework for subject domain content explicitly defines *the consistent patterns* of management transactions ("the enterprise laws" of management information transformations), which ought to be transferred to the solutions of other subsequent stages of the IS development life cycle including enterprise software applications.

Assumption A7. A relevant subject domain knowledge The essential precondition for the knowledge-based IS development is a relevant subject domain knowledge captured into enterprise management model (EMM) using internal modelling paradigm. The key feature of subject domain knowledge is identification of self-managed components.

Assumption A8. A normalized enterprise IS development process An enterprise IS knowledge-based development is required to be a normalized process, when each stage of a system development life cycle is arranged according to formalized criteria, related with deep knowledge (consistent patterns) of subject domain, captured in the EMM.

- Solution 7. A relevant subject domain knowledge

The essential features of subject domain are captured in the theoretically motivated enterprise management model (EMM) which satisfies assumptions A1–A6 described above. The detailed model of management transaction ($F \times P$) is an elementary management cycle (EMC) depicted in Fig. 5. So, the essential feature of subject domain (enterprise) components, self-managing, is captured using the EMC framework for enterprise modelling.

- Solution 8. A knowledge-based development process

The essential conditions for the implementation of the KB IS development are as follows:

- (a) A subject domain model is an additional source of knowledge about application domain alongside the analyst and the user for IS design solutions verification and validation. Knowledge subsystem becomes an active actor of the interactive IS engineering process.
- (b) A knowledge-based IS development life cycle (KB ISDLC) is required to be a normalized process, when each LC stage is arranged according to a formal criteria related to domain knowledge.

The normalized ISDLC is a two-dimensional model of the IS engineering process:

$$\text{NISDLC} = (\text{LC stage, Normalization}) \quad (4)$$

Normalization is considered here as a knowledge-based transformation, when content of every stage of IS DLC is transformed (normalized) in accordance with content of EMM and purpose and content of the particular LC stage (Fig. 7). A key concept to understand normalization as knowledge transformation is a *management functional dependency (MFD)* introduced in the enterprise management modelling theory (Gudas 2012a). The two-dimensional RUP model with predefined standard phases (Inception, Elaboration, Construction, Transition) on every stage of system development LC is an example of possible prototype close to KB ISDLC framework.

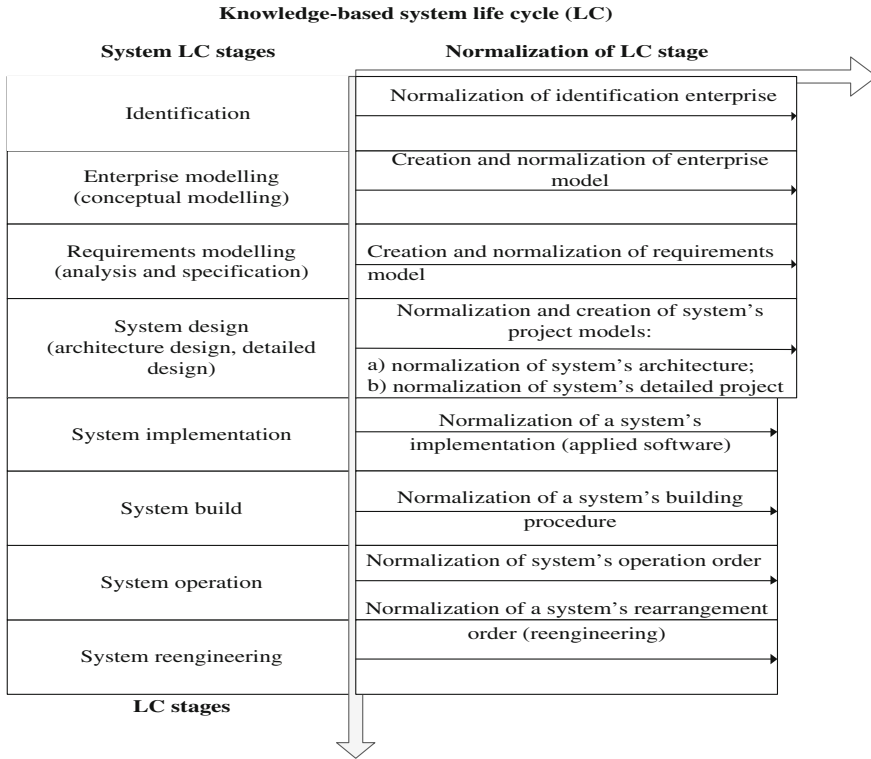


Fig. 7 The normalized IS development life cycle

Conclusions

The knowledge-based approach towards enterprise modelling and enterprise IS engineering is assured by introducing two internal modelling views, and thus, considering an enterprise as entirety of self-managed activities, which are correlated by management transactions. The key concept when applying the internal modelling paradigm for enterprise modelling is *management functional dependency (MFD)*. It is an underlying concept from which other functional dependency types are derived. The MFDs are discovered in the enterprise modelling stage of the ISDLC and define the primary causal dependencies that are implemented by management transactions, which are essential in ensuring enterprise management activities and ought to be griped and involved in the development of the enterprise software systems. The Detailed Supply Chain Model (DSCM) was developed and used for the identification of the management transactions in the real world domain.

The internal structure of management transaction is formally defined as an elementary management cycle (EMC). The EMC is considered as self-managed

component of enterprise management model. The EMC is a typical building block (a framework) which comprises a content of the essential interactions between organizational units which implement a particular required MFD.

The elementary management cycle (EMC) is a “systemic factor” in the enterprise management modelling for software systems development. The EMC is an essential element, in the hierarchical structure of the knowledge-based enterprise management model (EMM) defined in the Space of Processes.

Principles of a new approach to enterprise coordination modelling are based on the enterprise management model. Coordination is considered as the information transactions between the elementary management cycles (EMC) performed by managed processes (MP) rather than as interactions between organizational units. Enterprise management coordination means that one managed process (coordinating EMC) transmits a message to another managed process (coordinated EMC'). The difference of location of two different managed processes (i.e. of two EMC's) in the Space of Processes (PS) influences the content of the transmitted information between the managed processes.

Some limitations of the model-driven information systems development are related to the gaps between system development LC stages such as business modelling, requirements specification and application design. The management functional dependency and management transaction concepts form background for knowledge-based integration and normalization of all SDLC stages. The meaning of the concept *normalization* in IS engineering has been expanded: normalization has been defined as a knowledge-based model transformation. Summarizing the perception of data model normalization, the concept of normalization has been shifted to other IS life cycle stages in order to arrange (normalize) their results according to formal criteria related to deep knowledge of causal dependencies inside subject domain..

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Modeling the Promotion Process of Academic Conferences Through Social Media

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Abstract Social networks are now a crucial part of today's way of life. Academic conferences is another chapter, that give people the opportunity to explore new ideas and share them with the scientific world. Blending those two factors together in order to achieve a main purpose, could give a remarkable effect. The purpose of this paper is to analyze the promotion process of academic conferences through social media and use simulation models to model that analysis. The reason the paper was created, is to provide this optimal solution to all those seeking how to promote academic conferences effectively through social media. Thorough research through the paper revealed that social media, nowadays used by millions and millions of users can be successfully used to promote academic papers and with great appeal.

Keywords Simulation modeling · Social media · Promoting · Academic conferences

Introduction

Social media fever has been widening in every aspect of today's way of life, bringing together social, economic even academic factors (Tsimonis and Dimitriadis 2014). Manipulating social media for one single purpose could give remarkable results (Ahlqvist et al. 2010). On the other hand there is the academic

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world. Academic conferences, give academic scientists the opportunity to pose their own ideas in the scientific world and widen their knowledge (Yang 2015).

Simulations use mathematical equations to model a real experiment. No real resources are needed and give real related results. IThink iSee Systems, provide all the necessary tools to simulate a real model.

There is although a brake in the scientific world. Every scientist who seeks the admirable academic conference, needs to search the web thoroughly to spot the right one and that does not give the desirable effect. (Lawrence and McCabe 2001). What if a researcher could know the exact details of the desirable academic conference he needed, easily. For that question this paper comes to answer.

There have been 112 studies for the past 5 years (Deepdyve 2015) as regarding academic conferences and social media but no study has been conducted to model the promotion process of academic conferences through social media and that is what makes this paper unique.

The objectives of this study are to use the social media, to promote academic conferences and model that process to find the optimal solution.

Four Main Factors Comprise the Promotion Process of Academic Conferences Through Social Media

Blog

A company could post the basics about an academic conference, news, updates, dates, times, contact details, interviews with your guest speakers and reminders to register through a blog page. Links could be attached to the academic conference registration page, links to register for email updates or even links to other social media profiles (Schrecker 2008).

A programmer is needed to create the blog and a marketing consultant in order to provide good advice for supportive media. Sponsors could have a supportive way in the blog. All those require company resources.

Event Directories

With academic conference directories, people could find local academic conferences, connect with others and provide a good overview of all the basic details required for attendees. Other event directories have academic conference categories where someone could list his academic conference in (Davidson and Rogers 2006).

Company resources are required. The programmer and the marketing consultant manage, position, and promote those academic conference directories which lead to other pages, to specific categories.

Building a Community

The company should comment on blogs, on forums, taking part in Facebook or LinkedIn groups. Making an email newsletter with photos, news, and updates about the academic conference and reminders to register could come very handy in widening the current community (Hadley 2002).

The company pulls the new group of people searching for a academic conference from social networks. Company resources are required.

Promoting Sharing and Engagement

The company could encourage the audience to share information about the academic conference, with friends in order to increase the number of the audience.

Most social networks offer badges or buttons, which could be added in the company's website or blog, showing if the company is active online at the moment and help potential attendees. The company should share as much as possible and answer the audiences questions through the badges mentioned. The part of people that brings the profits, are actually the friends of friends of friends, because what happens is actually a chain reaction of sharing a single post (Kim et al. 2015).

Dynamic Simulation Model Analysis

Theoretical research is put into practice, using the dynamic simulation model, to test their success in real environmental conditions (Kuchi 2004). As seen in Fig. 1, the tank "Company Resources" supplies with resources the four subsystem counterparts consisting of academic conference blog page, categories, sharing and engagement and the community subsystem. These resources are available in order to execute the related activities and to satisfy leverage.

Academic conference blog page subsystem. "Company Resources" are given in the "Marketing Consultants" and the "Number of Programmers" stocks. The marketing consultant gives advises to programmer about page creation, indicated by the AGTP2 NOP. Flows emerge to "media stuff" and "Pages." Next, details are added about the academic conference shown by the AC2CD and AC2P. MS2ACBP, CD2ACBP, and RP2ACBP flows, eventually lead to "Academic Conference Blog Page." The flow S2ACBP connects to "Academic Conference Blog Page," indicating sponsors activity. The last lead to the "Satisfaction Academic Conference Blog Page."

Sharing and engagement subsystem. The flow CR2SAE represents the "Company Resources" given. A flow connects "Badges and Buttons" to "Active Online" stock. Next, two flows lead to the "Posted Questions" and "Posted Answers".

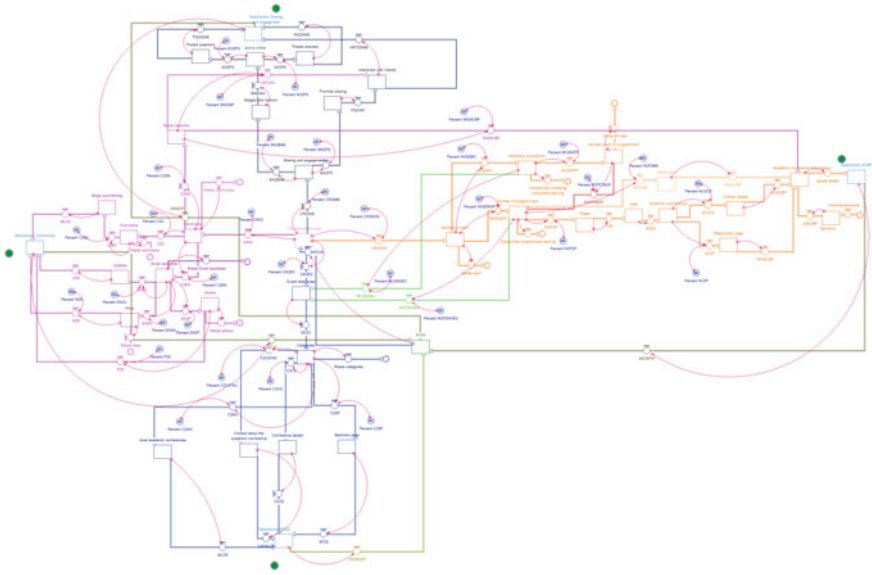


Fig. 1 Dynamic simulation model

SAI2PS connects “Sharing and engagement” with “Promote Sharing.” That sharing is promoted by interacting with friends and that is the purpose of PS2IWF. The PQ2SSAE, IWF2SSAE and PA2SSAE, all lead to “Satisfaction Sharing and Engagement.”

Community subsystem Company resources are given too. New social networks are created and added in the academic conference blog page shown by the C2SN, IWF2AO, and SN2ACBP flows. Commenting on blogs serves that further a community shown by the C2C and C2BC are the flows. A flow from the “Community” stock to the “Email Newsletter” is created. Photos can be added and also news and updates. The flows EN2P, EN2N, and EN2U, are the ones managing that conjunction. Finally regarding that subsystem, P2S flow, N2S, U2S, and BC2S, lead to “Satisfaction Event Directories,” indication of that activity’s satisfaction.

Event directories subsystem Company resources are given. A flow from the “Company Resources” tank to “Event Directories” is created. Event directories are of many categories. ED2C flow points that connection. There are four event directory categories and four the flows emerging from the “Categories” stock to those our stocks. That flows are C2SP, C2CD, C2CATAC, and C2LAC accordingly. That subsystem has a satisfaction leverage as the previous ones. To achieve that, SP2S, CD2S, CATAC2S, and IAC2S flows that connection to the “Satisfaction NOED” stock.

Figure 2 shows that the satisfaction percentage as regarding all the four factors, is rising significantly during the first months and then those satisfactions gain

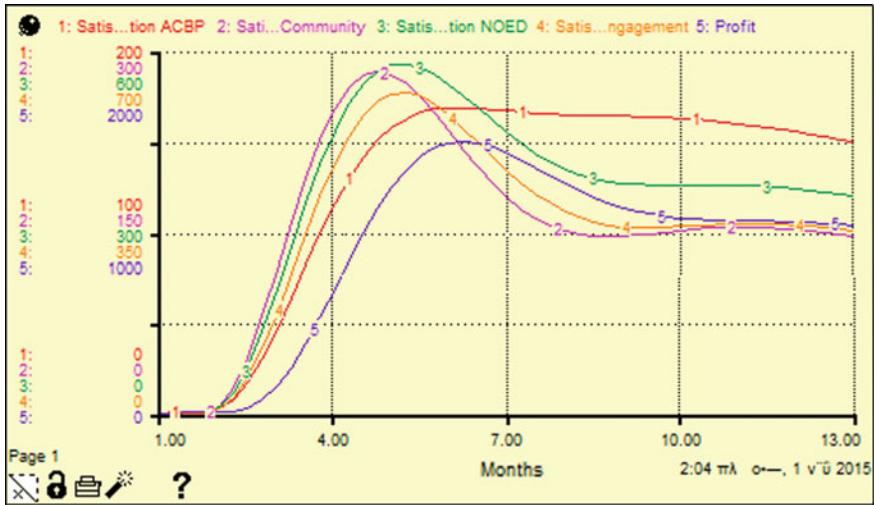


Fig. 2 Satisfaction academic conference blog page in conjunction with satisfaction community, number of event directories, sharing and engagement and profit

stability. Social media as regarding the promotion of academic conferences give successful and very satisfied results.

Figure 3 indicates that the company resources, given in the four leading factors, lead to company resources replenishment in a steady rate and in the same time the four factors are getting a high rise at the beginning but eventually tending to stabilize their resources.

Support for Decision Makers

The “COMPANY RESOURCES” section allows the decision maker to determine the amount of company resources available in the four other sections. The “SHARING AND ENGAGEMENT,” “EVENT DIRECTORIES,” “ACADEMIC CONFERENCE BLOG PAGE” and “COMMUNITY” sections allows the user to sustain its section in a desirable prestige. The user chooses all the values of the inputs desired, and clicks the run button. The simulation displays the effects of the decisions made. Support is provided by the prototype to guide the decision maker. The percentages have been chosen and tested wisely to provide the optimal results and that is indicated by the green lamps. Lowering or rising a percentage leads to a dissatisfaction level and therefore making a lamp yellow or red (Fig. 4).

2:04 PM 1/9/2015		Table 1 (Untitled Table)				?	🖨️	🔒
Months	CompanyRes	Academic con	Categories	Sharing and e	Community			
Jan: Initial	10,000.00	1.00	0.00	0.00	0.00			
Jan	2,401.05	23.15	622.38	1,144.59	1,144.59			
Feb	600.67	117.16	950.86	637.69	637.69			
Mar	386.72	172.73	799.42	288.91	288.91			
Apr	713.37	178.38	583.54	197.65	197.65			
May	1,060.35	169.42	463.23	244.59	244.59			
Jun	1,196.49	164.40	440.85	311.94	311.94			
July	1,147.54	164.11	460.98	341.67	341.67			
Aug	1,035.27	163.97	476.94	332.88	332.88			
Sep	947.49	161.25	473.01	308.47	308.47			
Oct	905.23	156.23	455.20	287.19	287.19			
Nov	889.91	150.42	434.57	274.81	274.81			
Dec	878.29	145.02	417.50	268.43	268.43			

Fig. 3 Company resources in conjunction with academic conferences, categories, sharing and engagement and community

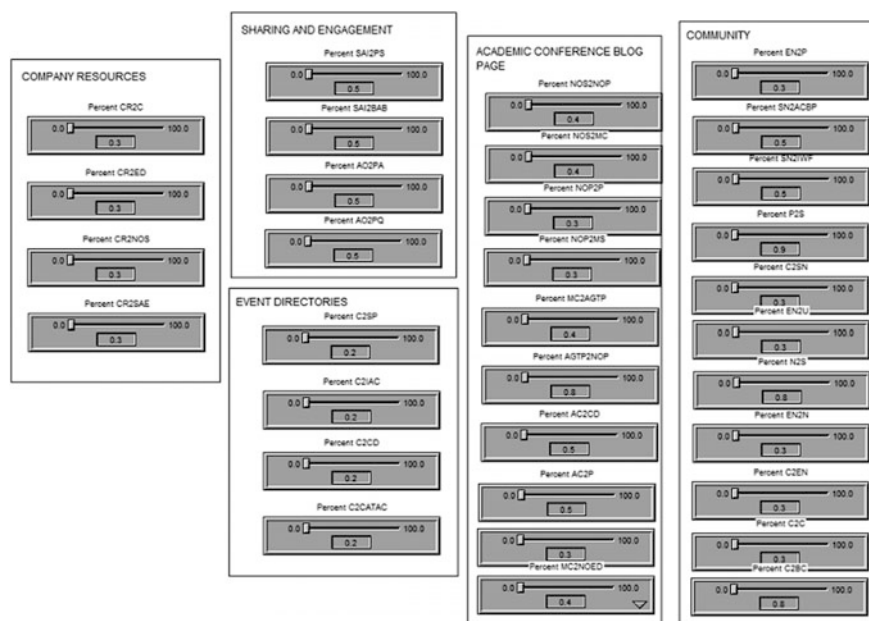


Fig. 4 Main user interface

Conclusion

The purpose of this research is to record the social media key factors that play a significant role in the promotion process of academic conferences. The dynamic simulation models aims to provide an optimal solution for that social media role (You and Wang 2009). In-depth exploration of key factors is being conducted for the promotion of academic conferences, and a complete record of the variables directly related to the main ones. Through the theoretical analysis and modeling, we were able to test with great success, the leading factors. The ultimate aim is the successful promotion of scientific conferences through social media. Our study is a comprehensive attempt to record and develop the scientific variables of academic conferences in social media, which leads to the creation of a strategic model for the successful promotion of those conferences.

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Merchandizing IT Products via Social Networks. Modeling and Simulation of the Procedures

Theodora Papadopoulou, Dimitrios K. Nasiopoulos
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Abstract In this paper is going to be analyzed the different ways and results an IT company will give if it would use simulation modeling for product merchandizing through social networks (Liu et al., *Internet Research* 25(2):300–316, 2015). All over through these years the companies are developing different ways of marketing methods on the Internet so they can sell more and more. In this research paper, is going to be presented the results which an IT company could have if it would change the traditional way of selling and advertising products by social media marketing. A company that produces IT products is going to advertise and deliver these, through social networks, a daily habit in our lives and our routine (Dunne et al., *Journal of Research in Interactive Marketing* 4(1):46–58, 2010).

Keywords Dynamic simulation modeling · Social media marketing · Merchandizing IT products

What Are Exactly Social Networks and Why Are They so Important? How Can We Be Advertised on Them?

Social networks are tools of media, in which people are based on them to contact with each other, to exchange opinions and to share music and ideas. Nowadays social media is a growing share of information from which the entrepreneurship can find many opportunities to evolve. Also, with the promotion via them is being developed different methods on the labor market and ways, which companies can now sell on the Internet.

These tools are very important because via them the users show their preferences and these can decode (by the company for example) and give the wanted results and information (Pierson and Heyman 2011). Also they bring technology issues and

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new ideas in the market industry and of course spread the name of the company. Furthermore, they are very useful because from these data it can be extracted the personality of user so we can show our ads to him, which depend on his click through (Balmaceda et al. 2014).

Merchandizing

Merchandizing is the charisma or the technique of making products to be desirable and easily accessible on the consumer. This technique is a psychological way to cause desires and needs to the consumer which maybe he did not think about having them. In first, merchandizing needs resources so it can be given (first and also later) to keep the clients satisfied and the quality of service high. Especially for IT products the combination of traditional marketing merchandizing (flyers, advertisement in radio-TV) and modern marketing (social media, blogs, email, etc.) gives the best result on advertisement of company’s products (Vijayasarathy 2002).

Merchandizing IT Products/Services

Figure 1 evidence the fact that the creation and the risk of investing resources in a Facebook page may lead in conducting in a good one brand name.

With the combination of traditional marketing, social marketing in Facebook may become an unbelievable tool of products’ promotion because it can “drive” the Facebook users to the company, which they could become the best advertisers in the short future with a minor cost in the company (Hansson et al. 2013)

IT Products in Social Media

Starting from, the use of social media is very widespread so companies take advantage of this and they compete in market on the base of social media.

Fig. 1 Making money from social media (<http://themgroupcreative.com/driving-business-revenue-social-media-marketing/>)



A company may use the social networks so it can have access to many users and future clients, which they can bring more and more followers day to day (Swani et al. 2013). IT products considered as a way of computers, laptops, tablets, smartphones, and hardware for example printers, inks, gadgets for technological issues. Moreover, an IT company may provide services such as design of web sites, antivirus systems, e-shops, etc.

Professional Facebook page: (PFP) the professional page is the “face” of the company in the future clients. It has characteristics like contact with clients, advertisements of new and old products, creation of coupons, reviews, etc.

To create the Facebook professional page there is a need of staffing resources and also people who are specialists in specific parts of working. For example, the start is a computer and a graphic designer to design the logo of the company in Facebook page. Of course, useful is an extra person who is specialized in social media advertisements so he can organize the design of the page with a help of a marketer who can deal with the advertisements of the product (Haigh et al. 2013). Extra features of the professional page may be the Offering coupons and discounts which is a new technique in social media to make products attractive, too. Tools for the satisfaction of the page are; statistics which Facebook gives for professional pages and the redirects in the website in which the clients are directed to buy.

Buying likes or inviting for professional page: is the way to boost the name of the company via social networks by rising up the followers of the page.

The success of PFP creation leads to the purpose which is the increase of the followers by buying likes or inviting people for joining the page. First way, the page pays an amount of money to Facebook and Facebook itself provides them a number of followers. In the other side, a person should invite people to like the page and has the competence of checking the statistics of likes.

Create Events: as keeping the clients satisfied, it has been created a feeling of a caring company to the clients and that may return resources in the company.

There is a fact of high satisfaction of the page to proceed to events in PFP, and after all the company can give resources to Events. For example a game contest in the PFP, may considered as an event, which can lead to a winner, or discounts if someone buys a coupon from Facebook. The implementation of all the above is done by a marketer with the collaboration of a (gaming) programmer.

Website: the main page is the way to build a society of followers in the company and to keep the fame well-known.

First of all, the existence of a web site presupposes the use of a server, which hosts the site. Over there is taken a database of clients to know their preferences and personality information and to organize them in lists. Specialists in these two are: a programmer for hosting the site and a database programmer for the creation of the database. In this website also work an advertiser with a graphic designer for the total icon of the site to be more attractive. Many sites to be more functional, add a “forum” option for the open discussion of the clients and for reviewing products.

Support: existence of FAQs, submitting questions in the site, reviews and answers of PFP.

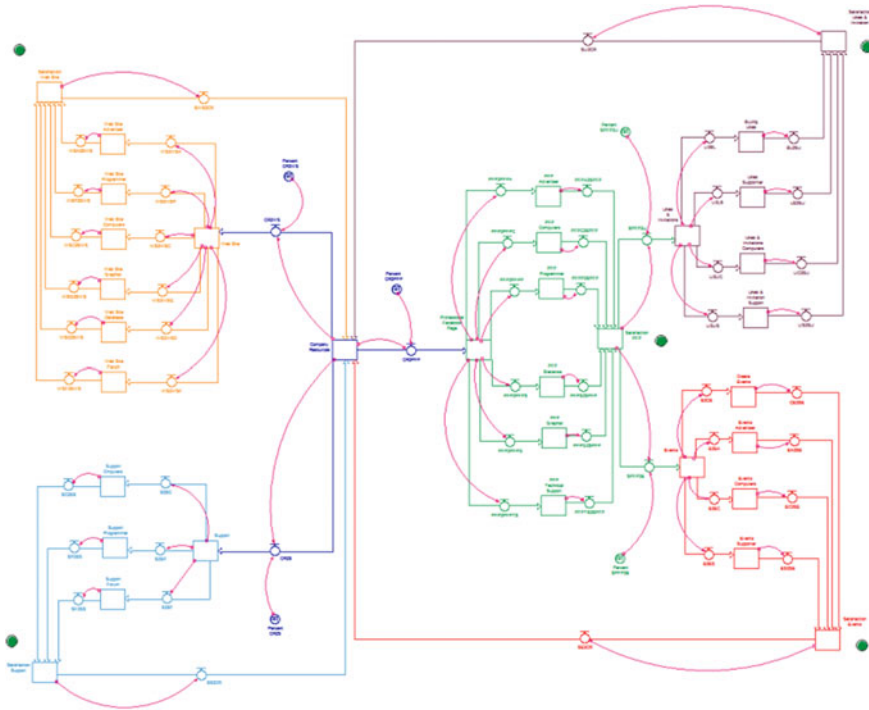


Fig. 2 Dynamic simulation model

The support of the website is not compulsory for the function of the site but indirectly may lead to resources, by satisfying the feeling of the client. For the implementation of support should be expenditure resources first for the implementation of the system and after all for its functionality. So, first of all, there is a need for a computer and a programmer who will design the support part. The programmer could contribute with a support staff, that should answer questions and also they can be collaborate for the forum of the main site, a tool for the clients to discuss open. In order to proceed to the support of the PFP, there is need of persons who could answer the inbox messages of questions and reply the posts in Facebook and also they may check the reviews which customers submit. High response rate evidence a company which pays attention to its clients (Kabadayi and Price 2014) (Fig. 2).

Dynamic Simulation Model

The converter has three operations. It can turn out inflows to outflows with graphical or mathematical functions the model makes itself. Also, it can either

keeps values stable so we can use them as before, or may be used as external input to the model.

Connectors link information of the model. They are two types: dashed and solid wire. Dashed wire means information link and Solid turns out an action link.

A stock collects the concentration of a physical or a nonphysical quantity.

A flow shows an action, which fills or empties a stock. The arrow which has, gives the direction of positive flow inside or outside a stock.

As seen from the dynamic model (Fig. 1) the results affect when is changed the values of Company Resources in the main five factors, which analyzed before. Depending on the Company Resources, which provides money to them, the Professional Facebook page (PFP), the factor of Buying likes or inviting for professional page, the Creation of Events and the factors of Support and Website are connected. When each Factor is completed successfully, the lamp is turned on (green) and when it needs more Resources is turned off (red). All factors return money back in the CR, which they gain from their activities.

Implementation of the Dynamic Simulation Model

To create and describe the models used the iThink software from iSee Systems. In this model, the user may input the stocks and flows to describe the processes. The outputs the model gives itself (Figs. 3 and 4) are the results described by graphs. Figure 4 shows how the Company Resources (CR) may affect by the Satisfaction of

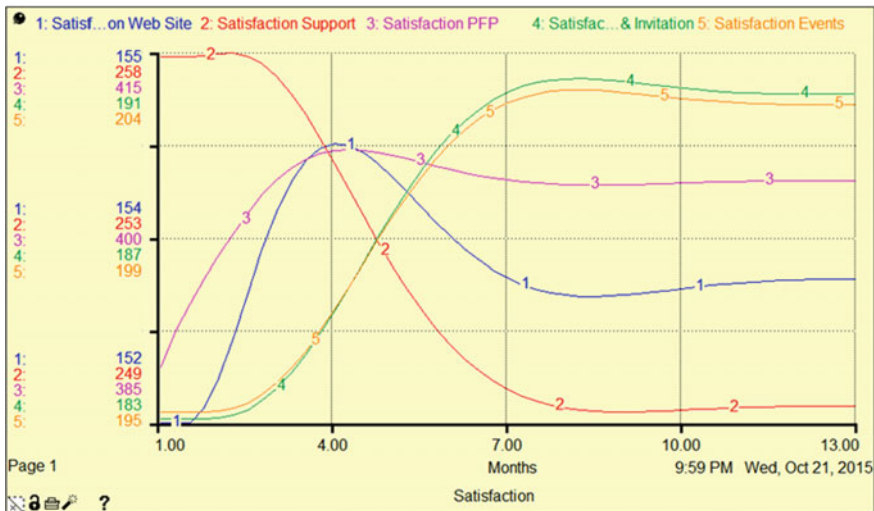


Fig. 3 Main factors satisfaction

Months	Company Resources	Satisfaction Web Site	Satisfaction Support	Satisfaction PFF	Satisfaction Likes & Invitation	Satisfaction Events
Initial	1,000.00	152.00	257.40	389.90	183.07	194.71
1	968.82	152.30	257.49	388.21	183.09	194.77
2	937.51	153.71	256.92	404.67	183.73	195.46
3	954.58	154.20	254.81	407.04	185.41	197.25
4	954.69	153.99	252.31	406.67	187.51	199.48
5	955.75	153.51	250.39	405.52	189.21	201.29
6	956.78	153.17	249.30	404.65	190.15	202.29
7	957.37	153.03	248.84	404.29	190.43	202.59
8	957.82	153.03	248.78	404.28	190.38	202.53
9	957.42	153.09	248.80	404.42	190.24	202.38
10	957.27	153.14	248.86	404.54	190.14	202.28
11	957.17	153.16	248.89	404.61	190.10	202.24
12	957.13	153.16	248.89	404.62	190.11	202.25

Fig. 4 Company resources to satisfaction

the factors during months. It can reveal reduction of satisfaction in some factors like Support and this can be changed by changing the functions inside the model.

Support for Decision Makers

Figure 5 is the main user interface and provides the feature of changing the values of Company Resources to the five Factors.

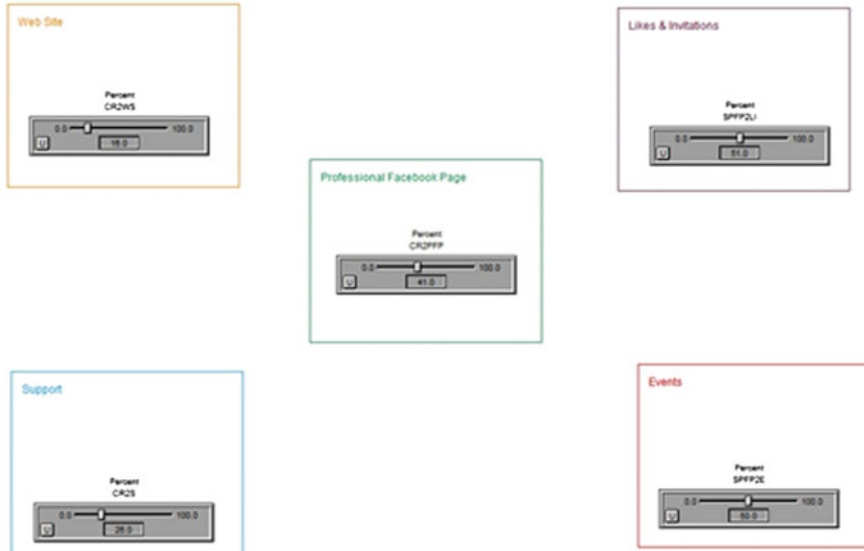


Fig. 5 Manager environment

Conclusions

In this research paper was made an attempt to simulate procedures of merchandizing the IT products via social networks. The nature of social media analyzed and both examined that they are growing up their fame and place for marketing day to day. Also was investigated the fact that they are dynamic because the job market is changing, too. Furthermore, this article attempts to show that in the case of using social media for merchandising the cost reduces dramatically and a company can have a profit by selling and merchandising products via this method in comparison with others traditional methods (Crumpton 2014). The daily use of social media as a networking tool leads the client to the ease of access in products/services

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The Contribution of Social Media in the Management of Social Relations with Customers. Modelling and Simulation of the Problem

John Hlias Plikas, Dimitrios K. Nasiopoulos
and Despina S. Giakomidou

Abstract We live in an era where science and technology are at their peak. Tremendous changes and the basic need of mankind to interact with others, led social relations to follow another path. That path is social media. In the beginning, they were used for communication, but quickly gained reputation in other fields. Because of the number of people using social media, companies started to use them with clever strategies, in order to attract people to buy their products (Qualman 2011). A question quickly comes in mind. That question is, in what way social media could be used to maximize company's profit. That question this paper seeks to answer. The purpose of this paper is to analyze that contribution of social media in the management of social relations with customers and use Dynamic Models, in order to simulate that analysis. Thorough research through the paper revealed that using social media combined with clever strategies, the company could achieve high reputation within its customers and therefore significant profit.

Keywords Simulation modeling · Social media · Management · Social relations · Customers

Introduction

Human race based its society in economy. Companies adjusted to the new era using clever strategies and managed its social relations to gain profit. That achieved in high level, by manipulating social media. Imagine putting companies, existing from the past and social media, present and future dominant in one basket (Fowler et al. 2013).

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Technology brought forth simulations, which are used to conduct an experiment safely and with high reliability to a real one. IThink iSee Systems, consists of all the necessary tools for simulation modeling.

But, there is a core problem. Most companies manage their social relations with customers through social media but they do not use the right strategic moves (Bolton et al. 2013). The question is what strategic moves could be used to maximize company's profit. That question this paper comes to answer.

There has been 197 studies during the past 3 years, as regarding the contribution of social media in the management of social relations with customers. This paper makes the difference because no other search has been conducted to study that contribution and modelize that process and that makes this paper unique (Deepdyve 2015).

The objectives of this paper are to study the importance of social media, in the management of social relations with customers and depict that importance in a model in order to find the optimal solution.

Five Main Factors Comprise that Contribution of Social Media in the Management of Social Relations with Customers

Advertisement

Mostly every company has a professional page. Connecting this page in social media pages, could work as a link path. Sharing those links and even interrelating that link in profile description would create appeal. Profile picture should be appealing enough as the description. The company should share images and videos presenting the product. Last but not least, tagging friends is a very effective advertisement technique (Kadir 2013).

A programmer is needed to create the professional page. A social media executive should be dealing with advertisement and a marketing consultant should advise both the programmer and the social media executive.

Social Media Newsletter

Newsletter should be appealing enough. Images and highlighted letters are easily captured by human eye and subconsciously create a happy mood (Copitch and Fox 2010).

A programmer, combining strengths with the marketing consultant, could create a newsletter using images and certain description.

Online Constant Support

The company could get its workers to create social media accounts and have them opened during their working hours so there always be someone available to answer questions. When the company closes, two other persons could work when the company is closed and in the nighttime period (Pawel 2013).

Registration and Purchase Through Online Discount

This, could be used as a different page and be associated with the social network's one. Sharing with an associated description, even tagging friends are useful methods (Manthorpe et al. 2013).

A programmer could create this page and the database holding the passwords and the number of people been registered. Images and descriptions of the products should be used in that page, for further appeal. Sponsors could entrust their money and a sales executive would be very suitable to manage those purchases.

Like Percentage

Every social network allows to like or to follow notifications. A company could create a database to be connected to the social network company's page, renewed every time a new customer likes or follows the company's page. By that, the company could reform its strategy accordingly (Pelletier and Horkey 2015).

A programmer is needed to create the database to be connected in the social media account.

Dynamic Simulation Model Analysis

The theoretical research is put into practice, with the Dynamic Simulation Model (Kuchi 2004). As seen in Fig. 1, the tank "Company Resources" supplies with resources the five subsystem counterparts consisting of Advertisement, Social Media Newsletter, Online constant Support, Registration and purchase through online discount and Like percentage.

Advertisement. "Company Resources" supply the "Number of staff," "Marketing consultant" and the "Programmer" create "Social network page" and "Professional page." That is indicated by the appropriate flows and stocks. Next, details are added, as seen in Fig. 1, in order to create branding and advertisement. All lead to "Advertisement methods" stock which is supported by the "Sponsors,"

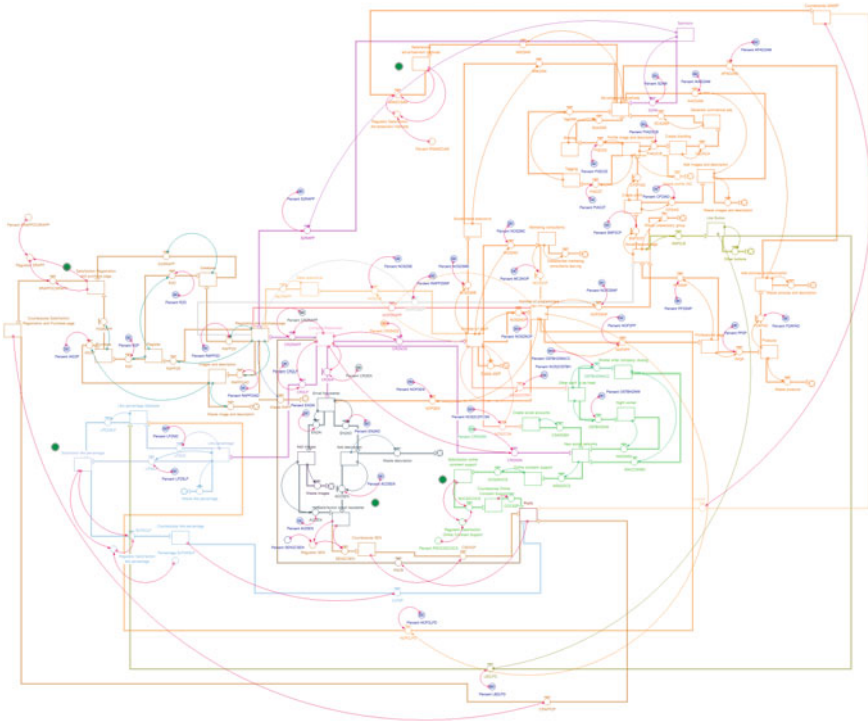


Fig. 1 Dynamic simulation model

giving satisfaction, increasing company's "Profit" and replenishing the "Company Resources" stock.

Social Media Newsletter. In order for the newsletter to appeal, "images" and "description" are added. That is indicated by the EN2AI and EN2AD flows. Newsletter gives a satisfaction level and leads eventually to "Profit".

Online constant support. The important stocks here are the "Other Staff to be hired", which regards the "Worker after the company is closing", "Night Worker" and the "Create Social Accounts", the ones been managed by those two workers. That factor gives a satisfaction and a certain "Profit".

Registration and purchase through online discount. RAPP2D, RAPP2IAD and RAPP2R lead to "Images and description", "Database" and "Register" stocks. R2P is the flow connecting the last stock with the "Purchase" stock. All give apply to the given "Profit" and "Company Resources" increasing people's satisfaction.

Like percentage. LP2ND connects the "Like percentage" and "Like percentage database" stocks. And that last factor gives a satisfaction level and a "Profit".

Figure 2 indicated that the satisfaction percentage as regarding all the five factors, is rising significantly during the first months and then those satisfactions gain

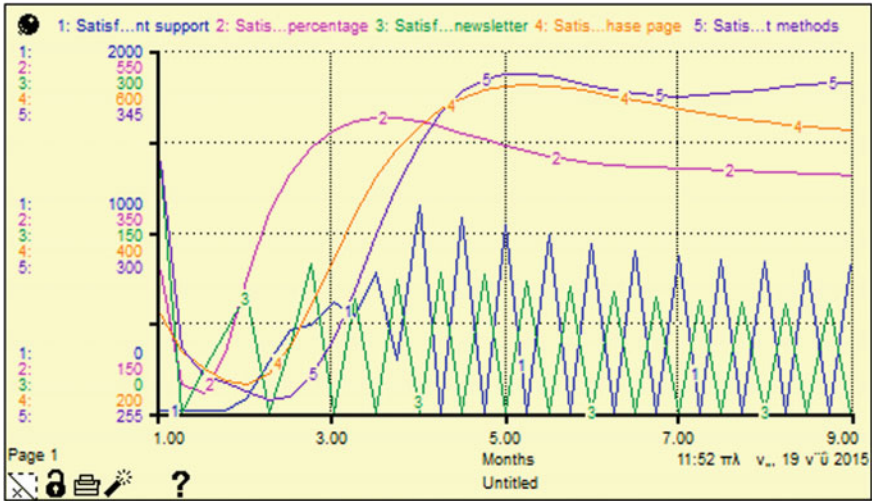


Fig. 2 Satisfaction online constant support in conjunction with satisfaction like percentage, email newsletter, registration and purchase page and advertisement methods

Months	CompanyRes	Profit	Online const	Email Newsl	Like percents	Registration a	Advertiseme
Initial	100.00	22,213.19	1.80	101.20	100.00	102.80	317.40
1	8,110.14	16,832.13	819.26	469.24	1,771.25	2,276.87	329.30
2	5,002.22	9,336.87	3,368.06	655.36	2,397.42	3,465.53	422.79
3	3,160.27	7,040.44	4,310.09	576.47	1,841.89	3,106.37	548.67
4	2,954.82	7,419.61	4,041.65	493.13	1,400.47	2,608.82	576.25
5	3,181.41	7,887.61	3,627.35	459.20	1,284.56	2,381.91	561.48
6	3,258.05	7,870.41	3,407.50	448.45	1,294.67	2,317.36	557.74
7	3,180.73	7,604.27	3,310.15	439.67	1,296.36	2,280.56	565.23
8	3,063.58	7,327.25	3,234.70	428.06	1,268.38	2,227.44	568.99
9	2,961.77	7,101.50	3,148.90	415.35	1,228.90	2,163.46	563.22

Fig. 3 Company resources in conjunction with profit, like percentage, online constant support, email newsletter, registration and purchase page and advertisement methods

stability. Social media as regarding the contribution of social media in the management of social relations with customers give successful and satisfied results.

Figure 3, shows that company resources in the beginning, given in the five leading factors, lead to company resources replenishment in a steady rate and the five factors are eventually tending to stabilize their resources.

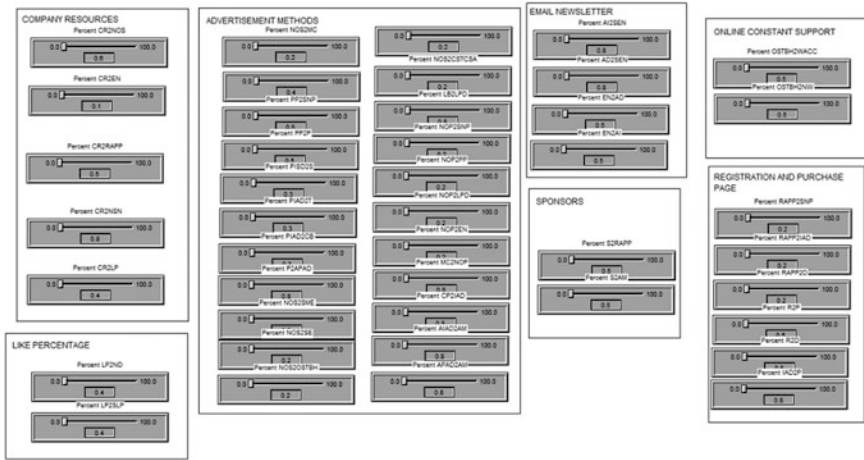


Fig. 4 Main user interface

Support for Decision Makers

The “COMPANY RESOURCES” section allows the decision maker to determine the amount of company resources available. The “LIKE PERCENTAGE”, “ADVERTISEMENT METHODS”, “EMAIL NEWSLETTER”, “ONLINE CONSTANT SUPPORT”, “REGISTRATION AND PURCHASE PAGE” and “SPONSORS” sections allow to sustain a desirable satisfaction level and prestige. The user chooses all the values of the inputs desired and then clicks the run button. The simulation displays the effects of the decisions made. Support is provided by the prototype to guide the decision maker through the decision making process (Fountas et al. 2006). The percentages have been chosen and tested wisely to provide the optimal results and that is indicated by the green lamps. Different percentages, in other words yellow or red lamps, would indicate dissatisfaction (Fig. 4).

Conclusion

The purpose of this research is to record the social media factors that play a significant role in the management of social relations with customers. The dynamic simulation model aims to provide an optimal solution for that social media role. In this research, in-depth exploration is being conducted for the contribution of social media in the management of social relations with customers, and a complete record of the variables related to the main variables. Through the theoretical analysis and modelization we tested with great success, the leading factors, aiming the contribution of social media in the management of social relations with customers. Our

study is a comprehensive attempt to record and develop the scientific variables of that contribution, which leads to the creation of a strategic model for the successful contribution of those social media.

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Modeling of Market Segmentation in Social Networks and Media

Alexandros A. Plessias, Dimitrios K. Nasiopoulos
and Despina S. Giakomidou

Abstract To reach his goal to market a product or service there is a need to introduce a competitive advantage which should characterize the product. This competitive advantage through various forms of communication of the company (or of the organization) with the customer needs to reach with targeted moves into the appropriate target group. The ultimate goal is to avoid unnecessary waste of resources. In order to find whether the results will have application in the market segmentation in social networks and media, we will make use of simulation models. Thereby, we have the separation of the market for social networks and media to target groups. The highest number of promotions is now based on the Internet which is estimated as faster, cheaper, and wider promotional tool. The research conducted on the Internet and statistics studied, highlighting as a means of communication between the company and target groups of social networks and media. It is reported that worldwide 74 % of adult Internet users have at least one account to them (Pew Internet Project's research). It followed so that there immediacy consumer contact with the company, which may use many different ways to promote the product. On the part of the company, analyzing properly the data and using social ROI (return on investment), one can pump elements for the success of the product. Finally, creating variables in the model can be done by using a different approach for social networks and media, which results in obtaining data on sales.

Keywords Simulation modeling · Market segmentation · Social networks and media

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Introduction

Market segmentation is a marketing strategy that groups consumers who have one or more common characteristics and necessarily have the same needs from a product. One of the main reasons essentially for a company segmenting the market into groups is to be able to create a marketing mix (Constantinides 2002) for the specific target group to have successful sales. Also, the target groups have their own needs and want to know which company (or organization) is in a position to manage resources efficiently and make better choices (e.g., strategies). It is worth mentioning that if a company (or organization) does not make market segmentation but target the entire market or does not make correct segmentation then it might not survive (Yankelovich and Meer 2006).

The social networks and media are some of the most visited sites worldwide daily (Hannaa et al. 2011) and their users share (Zheleva and Getoor 2009), both quantitative (i.e., measurable) information such as gender, age, income, education, and nationality and qualitative information such as interests, activities, and opinions. For the abstraction of such information tools offered by the same social networks and media could be used such as lists, groups, search filters, tags, and related topics with the product or service that needs to be promoted. Even the social networks and media give the chance to company (or organization) to broaden the client base with instant feedback from customers' perspective and to share content easily and fast with them.

It is worth mentioning that each market is different as every client is different for it and all the social networks and media should be taken into account, and continuous testing and customization in the dynamic simulation model should be made.

Bases for Market Segmentation in Social Networks and Media

There are plenty of criteria with which one can make fragmentation; here the following four were selected: geographic, demographic, lifestyle, and behavioral.

Geographic is simpler to understand and allows the company to break the market into sections as continental, country, state, city, and rural depending on the products or services they produce and want to promote.

Demographics is considered quite important factor, because it is easy to obtain information about this from the social networks and media; here the gender, age, income, education and nationality are used, since their users have the tendency to share.

Lifestyle can be divided into several ways, which one is to divide consumers into the following seven categories based on their needs (Edmund and Mike 2008). There is the explorer driven by a need for discovery and new frontiers; the aspirer driven by others' perceptions of them rather than by their own values; the

successors have a strong goal orientation and tend to be very organised; the reformer valuing their own independent judgement; the mainstreamer live in the world of the domestic and the everyday; the struggler lives for today and makes few plans for tomorrow; and finally the resigned predominantly older people with constant and unchanging values built up over time.

Behavioral segmentation, the last sector to be examined, has to do mainly with the choices of the consumer, in other words with the interests, activities, and opinions (Sathish and Mohan 2012). The patterns of purchases and visits, i.e., how much the consumer spends on average and how many times visited on average to the store (natural or virtual), the same type as what interests us are also examined.

Dynamic Simulation Model

After analyzing the key factors of the model and its subcategories of each factor, one can quickly create diagrams and tables dynamically (Richardson 2013) by taking into account the passage of time, so we work in a risk-free environment.

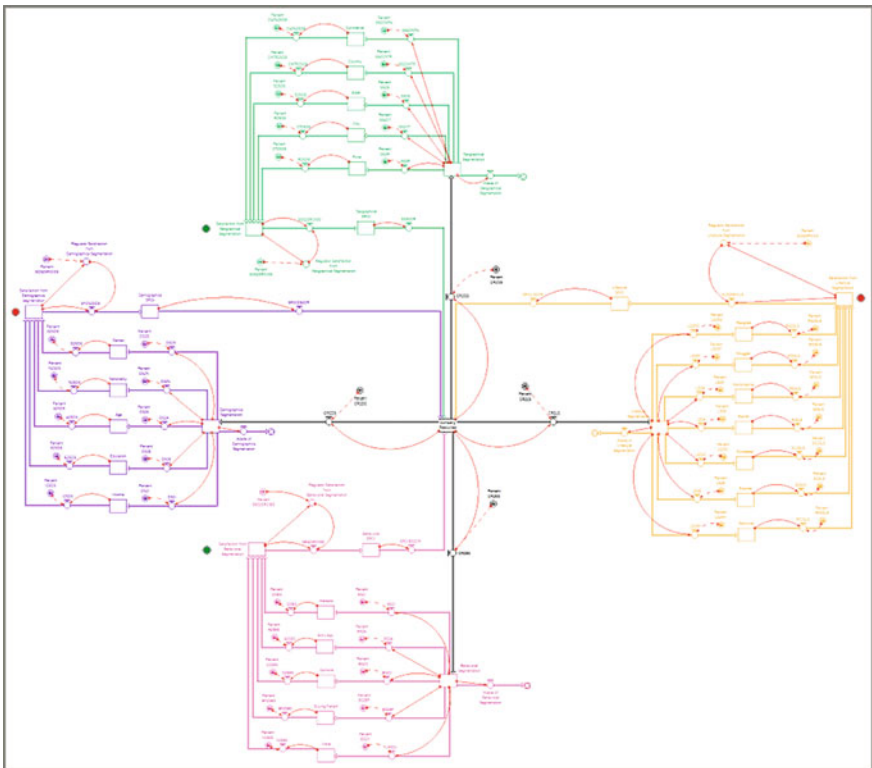
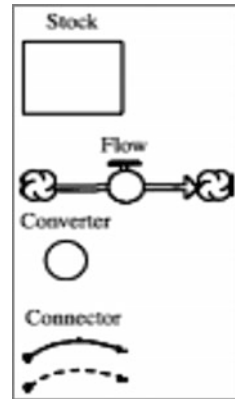


Fig. 1 Dynamic simulation model

Fig. 2 Dynamic simulation model parameters



As seen from the dynamic simulation model in Fig. 1, you can test hypotheses and policy interventions repeatedly until you achieve the outcomes desired. Furthermore you can explore hidden system perspectives leading to unexpected results.

Dynamic Simulation Model System Analysis

Here we describe the elements used in the dynamic model, and these are the stock, flow, converters and connectors. Each of these elements is functionality explained in the description below:

A stock represents the concentration of either a physical or nonphysical quantity.

A flow represents an activity, which fills or depletes a stock. The arrow suggests the direction of positive flow into or out a stock.

A converter can keep values stable or serve as an external input to the model or convert inflows into outflows through user-defined algebraic or graphical functions.

Connectors provide the connections between models data. Solid wire is an action link and dashed wire is an information link (Fig. 2).

Implementation of the Dynamic Simulation Model

The modeling software tool iThink, from iSee Systems, is used. At first the stock with company resources is created, which contains the capital of the company. Then with the help of converters and flows, the capital flows into the four stocks of segmentations with analogous quota for each. Once stocks of the segmentations are channeling resources and these in turn to subcategorize again, analogous quota ends up in each segment's stock containing the satisfaction of each segment.

Table 1 SROIs of one year form segmentations sectors

Months	Behavioral SROI	Demographics SROI	Geographical SROI	Lifestyle SROI
Jan	0.00	14.823.81	4.107.74	25.686.90
Feb	1.519.24	7.799.29	2.290.91	12.480.02
Mar	4.618.97	8.522.35	3.233.16	12.425.20
Apr	6.329.55	9.146.98	3.954.66	12.962.05
May	6.536.43	8.817.80	3.975.83	12.394.37
Jun	6.300.85	8.382.61	3.799.23	11.751.30
July	6.112.38	8.121.63	3.673.96	11.375.23
Aug	5.980.33	7.937.17	3.590.49	11.113.60
Sep	5.846.57	7.750.34	3.508.75	10.850.97
Oct	5.702.62	7.555.78	3.421.85	10.578.25
Nov	5.558.60	7.364.62	3.335.26	10.310.52
Dec	5.419.17	7.180.11	3.251.54	10.052.16

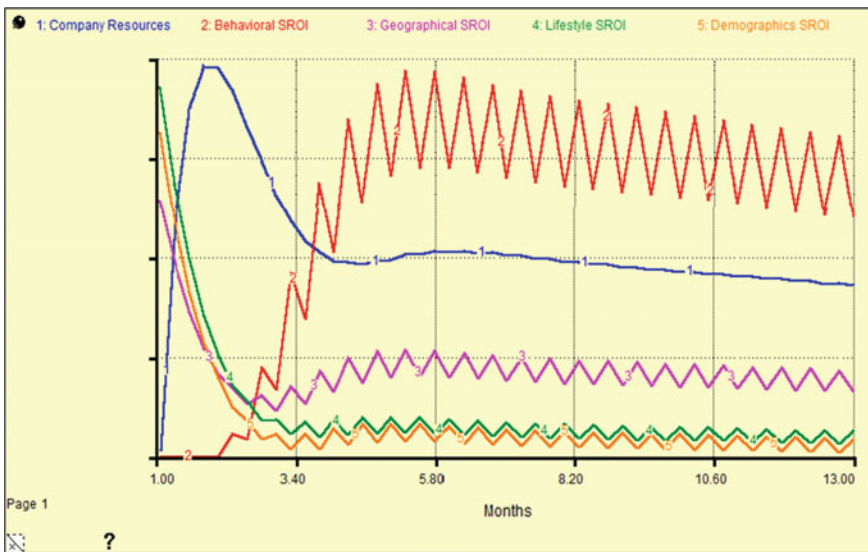


Fig. 3 Graph of company resources and SROIs form segmentations sectors in 1 year

From satisfaction stocks and with using an appropriate formula for each segment seeing the social ROI (Olsen and Lingane 2009) of each segment which goes back to the company recourses. This procedure is performed dynamically until the end of the simulation period. The quotas are set by the discontinuous connectors. Simulation results are shown in Table 1 and the graph in Fig. 3.

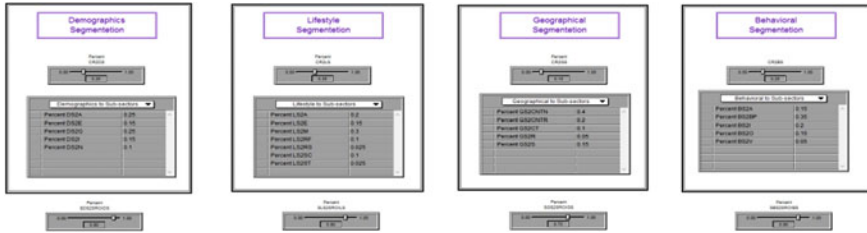


Fig. 4 Main Graphical User Interface (GUI)

Support for Decision Makers

The user can configure all the existing rates GUI (Fig. 4) and how much period of time according to wishes. At any time, the user may discontinue the simulation and examine the effects of the decision made.

Conclusions

Market segmentation in social networks and media are attainable in different ways. In this survey we have divided the market into geographic, demographic, lifestyle, and behavioral because we believe they are interrelated with social networks and media. The subcategories of segments can be modified dynamically as themselves social networks and media. Next the dynamic simulation model is developed.

From the simulation model enough conclusions, different scenarios, and strategic effects in a risk-free environment can be derived. In addition, a high customization freedom given to user through an easy and user-friendly GUI can be obtained (Fig. 4).

Always a model must be able to be adapted to the requirements, needs, and specificities of the product and target group. Finally, equally important are the objectives and the limitations of the company in relation to the potential market size.

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Modeling of B2C Communication Strategies in Electronic Commerce

Dimitrios K. Nasiopoulos, Deltouzou Ioanna, Galanis Lida,
Papailiou Paraskevi and Despina S. Giakomidou

Abstract In this paper, there has been an attempt to present the B2C Communication Strategies in Electronic Commerce (e-commerce). The factors of success, as they have emerged from the study of successful e-commerce models until our days, are analyzed. We shall study the interactions between business and customers, by setting variables and by using dynamic simulation models as a key decision tool. Through a thorough study of the interactions between business and customers, and by setting variables and using dynamic simulation models, we wish to demonstrate the need for researching such a matter, in a wide range of factors that affect B2C communication strategies in e-commerce. By using the simulation models, we seek to find the optimum solution, with the ultimate aim of maximizing the wealth of a business.

Keywords Dynamic simulation models · B2C · e-commerce · Communication strategies

e-Commerce in Business to Customer—B2C

Business to customer e-commerce is perhaps the most classic form of electronic commerce, which is addressed to the average consumer–user of the online environment and represents approximately a 30 % of total e-commerce activity (Allen and Fjermestad 2001).

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B2C e-commerce is distinguished, according to the disposal of products to consumers, in pure or direct and in partial or indirect. The pure e-commerce includes products that can be delivered directly to consumers via the Internet, without the mediation of third parties. Such products are all those that have digital format and digital services. The other products, such as the natural ones, which do not require the mediation of others, belong to the partial e-commerce (Alzola and Robaina 2007).

B2C e-commerce offers a number of advantages to both the company and the consumer. It is of high significance the reduction that is brought about in the administrative and operating expenses of the business. By reducing the costs of creating, processing, distribution, storage and re-printing information, the company reduces significantly the cost of marketing. Moreover, it enables enterprises to expand their market position in national and international markets. Another very important advantage gained by companies involved in e-commerce is that of greater competitiveness in terms of price due to the elimination of mediators of the traditional trade (wholesaler, distributor, and retailer) (Sakas et al. 2015).

Many advantages exist also for the consumers. With the implementation of electronic commerce, the consumer has the right to find and choose several purchasing opportunities and discounts, as the market extends beyond local geographical boundaries and consumers are able to compare and choose the best for them. The time savings and the ability to trade 24 h a day are two major important advantages of e-commerce (Cho and Park 2003).

Analysis of Communication Strategies' Factors

With the aim of creating a competitive advantage over other online competitors, online business needs to develop a comprehensive range of communication strategies, which will be able to attract new customers but also keep the "loyal" customers.

Marketing in e-Commerce

The design of the advertising campaign is a critical process for the success of the advertising message. This process starts by identifying the target-market (target group) and the consumer's incentives, after an analysis of four basic characteristics (geographic, demographic, psychographic, and consumer behavior characteristics).

Typically, this first stage is combined with a record of the general characteristics of the product and the company to the method SWOT Analysis (Strength–Weaknesses–Opportunities–Threats) (Helms and Nixon 2010). Then follows the decision-making for five major points, known as the 5 M of an advertising campaign:

1. Definition of the objectives of the advertising campaign (Mission)
2. Determination of the advertising budget (Money)
3. Development of a draft of the means to be used (Media)
4. Creation of the advertisement (Message)
5. Evaluation of advertising effectiveness (Measurement).

Public Relations in e-Commerce

The public relations constitute an essential activity of the company, which aims at designing strategic communications programs, in order to create coherence between business objectives and expectations of the public with which the company communicates and not only of its customers. Public relations are a very important tool in the development of advertising and the “building” of a good corporate reputation in the market (Ratnasingam 2005).

Some basic actions forming the function of public relations of a company active in e-commerce are those of development of personal relationships with potential customers, through emails and chat rooms, publication of articles, or commentary of third with positive content about the business in the various social media (Twitter, Facebook, etc.).

Functionality and Web Security in e-Commerce

A company active in B2C e-commerce could not overlook the necessity of functionality and security of its website as this is one of the most critical communication strategies.

The usability of the website of a company lies in several factors, some of which are purely subjective. Key role in the functionality of a website holds the user-friendly environment of the site and the low frequency of users’ errors. Equally important factors are the effectiveness, i.e., the achievement of defined objectives or expectations of the users, as well as the effectiveness of the website that can be defined as the percentage of successful execution of the users/clients’ objectives to the resources consumed by them, in order to achieve their goal (Choi and Nazareth 2014).

Security is a serious issue in the development of the B2C e-commerce, since this is the main reason why consumers are reluctant to make online purchases of products that require the disclosure of the credit card number as well as personal data from the potential client.

Brand Name of the Company

A strong brand name is now necessary in the ever globalized market. The options of modern consumers are growing at exponential rates, while in combination with e-commerce, which allows access to the global market consumers who are able to acquire products that will bring significant benefits.

The brand name of a company can be called not just as the business identity, but as the personality and philosophy of that company (Hillenbrand et al. 2013). The branding is one of the most effective communication strategies, which is at the companies' disposal, in order to attract new consumers, but also to maintain the existing ones. In summary, the strategy of developing a strong brand name consists of the creation of the sense, among consumers, that the services or products of the company are the only reliable solution that will fully meet consumers' expectations.

Construction and Analysis of the Dynamic Simulation Model

There was an attempt to feature the variables that are considered to affect communication strategies, which were identified through the theoretical framework and the research. This shall be accomplished with the aid of the dynamic simulation model.

The concept of the model follows the modern business activities. The tank "Company Resources" channels resources to the reservoir "Communication Strategies" for analyzing communication strategies. These resources can be of any form, for example, economic resources, technology resources, and human resources, i.e., working hours allocated by people, such as public relations department, in order to carry out this objective. All these resources are available on communication strategies aiming at satisfaction, utilization, and fulfillment of related activities (Fig. 1).

These resources are either transferred through the flows (flows), by the main tank "Company Resources" toward each secondary tank or they are introduced to the central tank "Company Resources," when it comes to resources that are added directly to the system. The tanks of marketing, public relations, functionality and security of the website and brand name constitute the secondary tanks.

A very important advantage of the dynamic simulation model is the element of the capacity of the model. This means that the model has the ability to be adjusted depending on the way the administrator wishes, with new data, even during the "run" process.

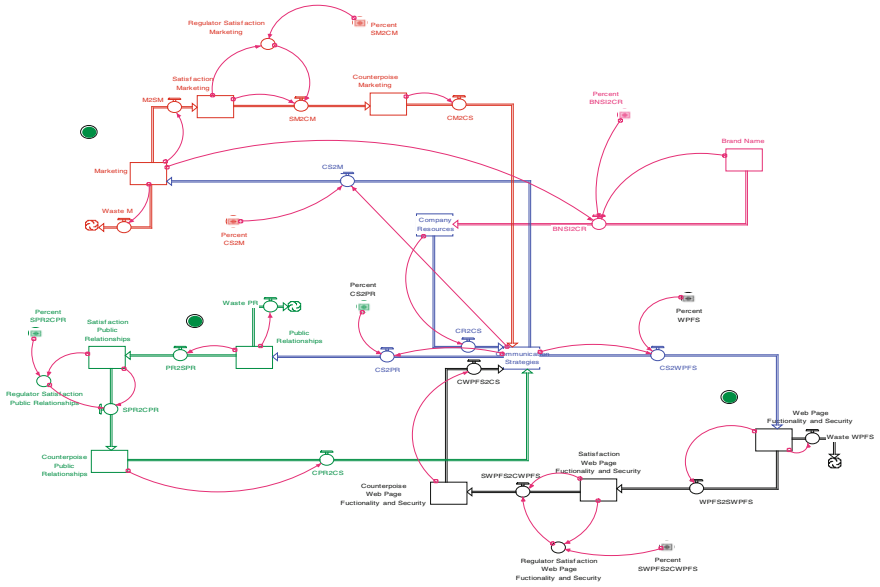


Fig. 1 Dynamic simulation model

Matrix Analysis and Charts

The results of the Dynamic Simulation Model that we have created are shown in Figs. 2 and 3.



Fig. 2 Variables' satisfaction

The image shows a spreadsheet titled 'Table 1 (Satisfaction, %)' with columns for 'Marketing', 'Satisfaction Marketing', 'Web Page Functionality and Security', and 'Satisfaction (Web Page Functionality and Security)'. The rows represent months from 1 to 12. The data shows a general upward trend in satisfaction percentages over time for all categories.

Months	Marketing	Satisfaction Marketing	Web Page Functionality and Security	Satisfaction (Web Page Functionality and Security)
1	8.32	7.20	10.00	9.02
2	10.12	14.80	12.70	16.00
3	13.64	21.20	17.00	21.60
4	15.52	25.24	18.44	27.78
5	16.20	32.81	20.28	35.84
6	16.20	47.12	20.20	50.80
7	15.88	51.63	18.68	70.32
8	15.78	53.23	19.72	84.21
9	15.64	54.20	19.88	78.12
10	15.88	54.70	18.48	82.78
11	15.50	58.10	18.30	77.70
12	15.48	58.39	19.33	83.34
12	15.42	47.23	18.28	76.15

Fig. 3 Satisfaction of the variables of marketing, functionality, and website security

Conclusions

The purpose of this research is to record the key variables that play a crucial role in the implementation process of the communication strategies of a business that is active in electronic commerce, in order to “reach” the customer. Dynamic simulation model aims to provide the optimal solution for the development of these communication strategies, in order to bring about the best results (Markakia et al. 2013). In this study, we have performed a thorough investigation of key variables, as well as a complete recording of variables that are directly related to the main variables.

Through the theoretical framework and the comparison of various “runs” of the model, communication strategies that play significant role in the process of client’s rapprochement by the company were identified and tested successfully. The ultimate goal is the successful communication with each other, in order to promote the products or services that the company may offer, satisfying at the maximum possible percent the benefit of the business. This survey is a comprehensive effort to document and develop communication strategies in B2C e-commerce, which leads to the creation of a strategic model for the successful promotion of products and/or services of business to its customers and therefore the long-term maximization of the company’s wealth.

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Robots in the Hospital Setting: A Case Study

Kalyani Ankem and Joshua Turpin

Abstract Robots in healthcare have emerged in functions ranging from assisting in surgery to offering pediatric companionship. In the United States, robots are considered one of the top health information technology (HIT) trends to watch in hospitals. We employ a case study approach to report the innovative ways in which robots are deployed in one large hospital in Cincinnati. At this hospital, robots assist in laparoscopic and urological procedures. As part of the pharmacy team, the pharmacy robot delivers patient-specific doses of medication. Robotically driven orthosis helps children walk. Still in exploratory stages at the hospital, robots process DNA to spot gene mutations associated with a disease to resolve disorders. The findings of the case study will illustrate the effectiveness of robots in the hospital as well as determine precursors in healthcare operations that are suited for robotic-assistance.

Keywords Robots · Health Informatics · Emerging Technologies

Introduction

Robots are revolutionizing many aspects of healthcare today nationwide. In the United States, robots are considered the number 1 healthcare IT trend to watch in 2015 (Monegain 2015). McNickle (2012) lists 10 medical robots that can transform healthcare. Lee (2013) includes a slideshow of robots that hospitals are using. Robotic applications in healthcare range from therapeutic robots, disinfection robots, and rehabilitation robots to surgical robots. Boston Children's Hospital and Northeastern University created a robotic teddy bear; "The Huggable project aims

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to close a gap between human supply and demand by creating a social robot able to mitigate stress, anxiety and pain in pediatric patients by engaging them in playful interactions” (Jeong 2015). In the next few years, thousands of service robots are expected to roam hospital corridors and navigate through elevators and departments delivering medications, linen, and meals among other items (McNickle 2012). Outside of the hospital setting, robots can enhance telemedicine. For instance, a remote robot is based in the Emergency Department at Hoag Hospital Newport Beach and Irvine in California. The remote robot “allows doctors to offer consultations to pediatric patients set to be transferred.” A doctor utilizing the robot “has a control station at his home and on his laptop and iPad so he can help the patient from a variety of locations” (CHOC Children’s 2014).

One of the popular uses of robots in healthcare today is in surgery. Robots are used to assist in various operations. The director of robotic surgery at East Carolina University’s Brody School of Medicine stated more than a decade ago that “Nationally, only one-fourth of the 15 million surgeries performed each year are done with small incisions or what doctors call ‘minimally-invasive surgery’ and robots could raise that number substantially” (Gerhardus 2003). Many healthcare organizations in the United States have yet to acquire the technology because of implementation costs and the lack of FDA approval for using the technology for certain types of heart procedures (Gerhardus 2003).

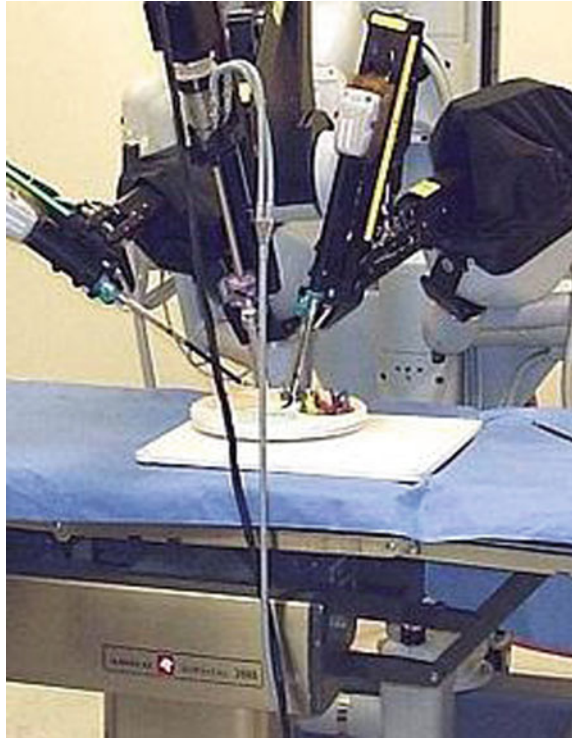
One of the hospitals that adopted robotic technology is Cincinnati Children’s Hospital Medical Center. Cincinnati Children’s Hospital is ranked number 3 in pediatric hospitals according to the *U.S. News Hospital Ratings*. At Cincinnati Children’s Hospital, robots are used in a variety of departments ranging from surgery to genetics. We employed the case study approach to report on innovation in robotics at Cincinnati Children’s Hospital. The second author, who works at Cincinnati Children’s Hospital, communicated with senior management within the hospital and gathered news and research published internally and externally that discussed the use of robotics at Cincinnati Children’s Hospital.

Case Study

Surgery

The Urological Surgery department at Cincinnati Children’s Hospital is not new to using robots for surgery. They bought the Si model of the da Vinci robot in 2009 and Cincinnati Children’s Hospital Medical Center was the first pediatric hospital in the world to obtain the da Vinci Xi which “provides a doctor with a magnified, three-dimensional view inside a patient’s body and precision control that avoids the possibility of hand tremors. The computerized arms of the robot, which can grip scissors and other instruments, are manipulated by the movement of the surgeon’s fingers or wrists” (Curtis 2010). According to *Cincy Magazine*, the price for the minimally invasive system is \$1.2 million (Curtis 2010) (Fig. 1).

Fig. 1 da Vinci Robot
(Source Medical Robots.
Available from: <http://www.robots-and-robots.com/medical-robots.html>)



Cincinnati Children’s Hospital also collaborated with Ben-Gurion University of the Negev in Israel to automate the insertion of needles. They built a prototype that consists of a robotic needle dispenser to make placing a central venous catheter simpler. “The operator lays the wireless device on a patient’s arm, leg or neck and views an ultrasound image on a nearby computer screen. The system then identifies the center and edges of each blood vessel, as deep as 15 cm inside the body and as narrow as 0.5 mm in width, making it particularly useful for treating children. Using a joystick, the operator aligns a target icon over a vein. The system uses a tracking algorithm to keep the blood vessel aligned. When ready, the operator simply presses a button to insert the needle” (*The Economist* 2015).

Rehabilitation

The Pediatric Lokomat robot is used by the rehabilitation department at Cincinnati Children’s Hospital. Again, the hospital was ahead of the others nationwide in obtaining a robot, this time being the third hospital to obtain the Lokomat. The Lokomat is described as follows:

The robot, an exoskeleton attached to the legs, hips and ankles by straps, with the chest supported by a pulley system, prods the patient in a natural walking motion. A computer programmed by a therapist controls the pace and measures the body's response to the movement. The goal is to almost overtrain the muscles in patients with moderate to severe motor impairments (Curtis 2010).

According to *Cincy Magazine*, the Lokomat costs \$350,000 (Curtis 2010).

Genetics

Cincinnati Children's Hospital expanded its genetics department by installing the Illumina HiSeq 2000 and the HiScan system. According to Cincinnati Children's Hospital, these DNA analysis systems have the highest output and fastest data generation in the field and the machines cost more than \$800,000. The HiSeq 2000 can process one entire human genome in 8 days. The HiScan can genotype 1 million single nucleotide polymorphisms (SNPs)—DNA pieces—for one patient in 9 min. The HiSeq 2000 and the HiScan function as follows:

The robots process human DNA samples onto slides containing as many as a dozen tiny squares—or microarrays—each with hundreds of thousands of gene markers. When exposed to microscopic laser beams, these markers produce matrices of green and red fluorescent dots so dense they look like static on a computer screen. It requires powerful computers to “read” the static and report which genes are active and which are not (Cincinnati Children's Hospital Medical Center 2011).

The goal is to identify gene mutations associated with a disease.

Pharmacy

The clinical side of healthcare is not the only one to benefit from a robot. The Outpatient Pharmacy department at Cincinnati Children's Hospital has been using a robot for a while. Currently, the robot can affix labels and dispense up to 200 different solid medications and “since information flows directly from the computer to the robot, accuracy is at 99.9 %” (Cincinnati Children's Hospital Medical Center 2005). In 2005, the pharmacy robot, the Intellifill i.v., prepared saline flush syringes, and Cincinnati Children's Hospital “was the only pediatric institution in the Midwest to use the robot for patient-specific doses” (Cincinnati Children's Hospital Medical Center 2005).

Discussion

Healthcare providers believe that robots can increase efficiency as well as reduce costs (Lee 2013). Approved by the FDA back in 2000, the da Vinci surgical assistant has since performed more than 20,000 surgeries and has led the way for many other developments in robotics for assistance in healthcare (McNickle 2012). Cincinnati Children's Hospital was "among the first in the world to acquire the latest version of the da Vinci surgical system, a device with four robotic arms and a high-definition camera controlled by a doctor" (Brunsmann 2014). Robotic-assisted surgeries at Cincinnati Children's Hospital have proved to be effective and safe (Bansal et al. 2013; Noh et al. 2011; Riachy et al. 2012). Robots reduced operative time (Riachy et al. 2012). Compared to standard surgeries, the outcomes were similar as they did not increase complication rates (Riachy et al. 2012). As early as 2003, Gerhardus believed that the use of robot-assisted surgery can improve quality of care because it results in less pain due to smaller and more precise incisions.

The pediatric Lokomat used by the rehabilitation department has been hugely successful in helping children walk. Lokomat helps children tolerate more intensive training and feel more motivated while eliminating their risk for falls. Robotic DNA analysis is still in its early stages of research at Cincinnati Children's Hospital. The service and pharmacy robots, as seen in other hospitals, perform tasks with greater effectiveness and precision. Fewer robots are also needed to do the same tasks compared to their human counterparts thereby cutting costs. The Intellifill i.v. reduces medication errors, improves patient safety, and cuts costs for the hospital (Cincinnati Children's Hospital Medical Center 2005).

According to Lee (2013),

The robots that have joined the U.S. hospital workforce tend to fall into two categories: ones that replace a job previously handled by an employee, such as packaging drugs or delivering lab results, and telemedicine-based technologies that connect clinicians and patients in ways that previously didn't exist (Lee 2013).

The integration of these robots in hospitals requires cost analyses and a close look at the changes to the traditional workflow and its effect on reimbursements and physician work and clinical outcomes (Lee 2013; Maleski 2014).

Whether the robotic application is to replace an existing process or to create a new one that lends itself to successful automation and robotics, Maleski's (2014) recommendations for a successful implementation apply. Maleski (2014) calls for "a thorough review of the state of the technology, regulatory approvals and requirements, departmental and interdepartmental impacts, safety measures, physician and staff training, staffing impact, infrastructure demands, service and maintenance needs, and information technology requirements."

Conclusion

Large academic medical centers and large health systems are the early adopters of robots in varying degrees. The trend, however, indicates that soon robots will be commonplace in healthcare. They increase operational efficiency and are cost-effective. However, smaller and medium-sized hospitals lag behind, and how these hospitals integrate robotic technology remains to be seen as this sector of healthcare is still evolving but with great interest and promise.

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A Case Study on the Use of 3-D Printing Technologies in an Educational Institution

Vishal Uppala and Kalyani Ankem

Abstract In the United States, universities are increasingly adopting 3-D printers. At these institutions where this technology is being adopted, students are using 3-D printing technologies to create physical 3-D objects as a part of their learning experience. The creation of physical objects is common in some disciplines like the arts, architecture, and engineering, where design and production play a vital role. We would like to examine the phenomena of 3-D printing, and we would like to answer the following research question: how do students use 3-D printing technologies implemented at universities? To answer this research question, we employ the case study methodology with face-to-face interviews at one implementation location at one university.

Keywords 3-D printing · Education · Emerging technologies

3-D Printing Technology and the Educational Context

According to Bourell et al. (2009), 3-D printing technology is not new, and it has a history tracing back to over 150 years. However, due to recent advances in 3-D printing technologies, there has been an increased availability and use of these technologies. For example, 3-D printing is used to create components for high-end, specialized automobiles in the automotive industry (e.g., Formula 1 race cars), low-volume parts in the aerospace industry (e.g., NASA spacecraft parts), customized orthodontics (e.g., Invisiline braces), and customized hearing aids (e.g., devices by Siemens and Phonak) (Campbelle et al. 2011). As an emerging technology,

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3-D printing has been hailed as the next big disruptive innovation with the potential to impart a transformational change in most industries (Campbelle et al. 2011). The use of 3-D printers promotes a unique capability; it allows transition from restrictive design to ideal design in the production of goods (Basilieri 2014). Also, this technology allows for the manufacturing of highly customized 3-D products for end users by allowing direct creation of physical objects from digital models (Berman 2012; Mpfu et al. 2014). Therefore, the development of 3-D printing capabilities in the industry will allow more flexibility in design due to the waiver of some requirements associated with manufacturing capacities, equipment capabilities, and knowledge capabilities; for instance, through the procurement of third party 3-D models. However, this technology is not perfect in its current state, and a number of factors impede this technology such as low print precision and quality, restrictions on printing materials, and high costs for large production (Berman 2012; Lemu 2012). Day-by-day, the use of this technology is growing due to advances in the technological space associated with 3-D printing. As universities prepare students for the workforce of tomorrow, it will be increasingly important for students to develop skills working with these innovative technologies.

The arrival of 3-D printing at universities will require creative ways of teaching and learning, and research must be conducted to understand the phenomena associated with 3-D printing. Along with its artifacts, 3-D printing has not been studied much outside of the physical sciences and engineering disciplines. Mpfu et al. (2014) examined the impact and applications of 3-D printing in a general context. In the context of education, there are very few studies. Colegrove (2014) and Groenendyk (2013) describe and explore implementing 3-D printing technologies as a library service. Garcia et al. (2014) examine the adoption of 3-D technologies in university libraries as tools for engagement. Thus, we would like to extend this stream of research by exploring the use of this technology by students at one location in one university.

We summarize the structure for this research-in-progress as follows. First, we state our research objective, the methodology, and the case selection. Second, we elaborate on the landscape of 3-D printer adoption at one university and the implementation of 3-D printers at one location within this university. Third, we describe the use of 3-D printers by students at this location. Finally, we conclude with directions for further development of this stream of research.

Research Objective

We focus on one particular question to allow us to examine the phenomena associated with emerging 3-D printing technologies. There are a number of potential contributions from answering the research question: how do students use 3-D printing technologies implemented at universities? Answering this question will allow us to understand the role of 3-D printing in learning environments. It will give insights into the behavioral aspects associated with general use of this technology.

We might be able to understand antecedents to using 3-D printing technologies. Additionally, we gain insights into the interaction between this technology and the tasks performed by students.

Methodology

Interpretive research paradigm would be appropriate for this study because there is no clear, objective way to evaluate 3-D printing technologies and their use. Interpretive paradigm allows for the understanding of a phenomena based on the meaning assigned to it by the participants (Orlikowski and Baroudi 1991). Benbasat et al. (1987) and Lee (1989) recommend the use of the case study methodology for exploratory research. The case study can describe, explore, and explain a phenomenon during the process of knowledge accrual (Yin 2013). Per Yin's (2013) framework, we are acquiring knowledge by describing the 3-D printing phenomena in its initial stages at a university.

Case Selection

Since we are focusing on technology used by students, we chose to collect our data at a university. The selection of the location at the university was based on convenience. The individuals implementing the 3-D printing technologies at the library were open to our research efforts. The site has Makerbot 3-D printers. They allowed us to collect data, and two people volunteered for a face-to-face interview.

Adoption and Implementation at the University Library

The library adopted this technology about 2–3 years ago. Initially, there was only one printer. This printer was obtained using a grant from the library association. A second one was obtained using funding from the library itself. The library adopted this technology for a number of reasons such as to stimulate creativity, to interest people in this technology, to introduce people to new technologies, and to improve access to new technologies. The current process for 3-D printing employed at the library is illustrated in Fig. 1.

The 3-D printing process consists of two phases: a design phase and a manufacturing phase. In the design phase, software and tools (e.g., 3-D scanner) are used to create 3-D models necessary for the manufacturing phase. In the manufacturing phase, the hardware and software of the printers materialize the desired product. The process illustrated in Fig. 1 uses the following 3-D printing hardware and software: modeling software to design and edit, communication channels and an IT

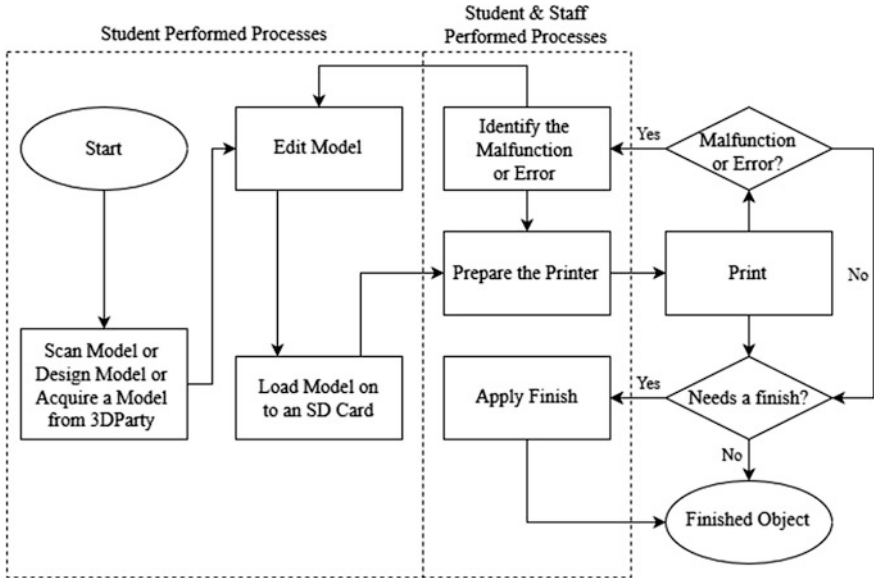


Fig. 1 Current process for 3-D printing at the library

platform for sharing models (e.g., thingiverse.com), 3-D scanning technologies, and the printer itself.

Student Use of 3-D Printing at the Educational Institution

If a student is interested in printing an object, this student will make a reservation. If it is the first time for the student using this technology, the facilitators will provide a walkthrough. If it is a long print, the facilitators will watch and take it off the printer once it is completed. However, a student who is printing is expected to take responsibility for his/her print and participate in the printing process as a learning experience. Since the printing filament is expensive, starting this year, there will be a charge of 10 cents per gram of filament based on the amount used in the printing process. We find that when students use this technology, they face two main issues leading to failed prints: (1) technical issues with the printer and (2) issues with improper model design. The failed prints are important to consider because they involve significant plastic waste and loss of time. The quality of the print is also determined by the printer’s capabilities and effective utilization of design. Prints of lower quality might need finishes.

Students at this educational institution use the 3-D printer for a variety of purposes. Table 1 lists these purposes. The interview quotes highlight the varied domains of use for this technology in educational settings.

Table 1 Purposes for using 3-D printing technologies by students

Purposes	Quotes
Prototype	“Someone wants to print computer parts.”
Experiment/Tinker	“People print out novelty items. There is a site called thingiverse that has files that you can freely use.”
Creation of final goods for leisure	“We have one guy designing his own game pieces for board games and things. He was originally printing things from thingiverse, and now, he is doing his own thing.” “This other guy printed a part from a game in several pieces. It was for a costume.”
Classwork	“A student in biology had put in a request for a project; it involved creating a model of a cell.”
Scanning 3-D objects	“The laser scanner is the most useful tool. You don’t have to go into a program and build a model from scratch.”
Replication of objects	“If you had a skull and you wanted to know how it looked like, you can scan it in because you don’t want to mess with the one of a kind original skull.”
Reduction of skill level for specialized production	“Now, people could do what they could not do necessarily by sitting down and building it. They might be able to build it in a computer program.”

Conclusion

In this research-in-progress, we attempt to lay a foundation for generating meaningful insights into the 3-D printing use phenomena at universities. We only look at 3-D printing technologies at one university, and we only focus on one implementation location. In subsequent development of this stream of research, we plan to examine the entire campus at this institution and others like it to get a better understanding of the phenomena. The aim of this study is to provide themes and trends regarding the present use of 3-D printing technologies and share insights into the antecedents influencing the use of these technologies.

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Information Systems Phases and Firm Performance: A Conceptual Framework

Maria Kamariotou and Fotis Kitsios

Abstract Strategic information systems planning (SISP) has been identified as a serious management issue. SISP is fundamental for organizations to succeed in current competitive global marketplace. This paper, based on a methodology about literature review, examines the phases and the measurement of phases success in order to understanding the process of SISP. Identifying 60 scientific articles, between the period 1980, when the concept of SISP appeared, and 2015, we present a composition and an analysis of the findings of a literature review and we focus on SISP process and its impact on firm performance. This paper makes two contributions. First, it explicates relevant fields about the query and concludes to a theoretical model. Secondly, this literature review analysis offers opportunities for future research.

Keywords Strategic information systems planning · Phases measurement · Business strategy · Firm performance · Competitive advantage · Literature review

Introduction

The concept of strategic information systems planning (SISP) appeared by the end of 1970 (Basu et al. 2002). Strategic planning of information systems is one of the most important research topics (Lederer and Sethi 1988a, b). SISP aligns IS with business goals, supports the opportunities occurring from the use of IS and includes the resources needed for IS applications (Doherty and Marples 1999). A limited number of researchers have examined the relationship between the phases of the process of strategic information systems planning and its success (Newkirk et al. 2003; Newkirk and Lederer 2006a, b). Therefore, there is a need for further research. Knowledge of the phases of the strategic planning of information systems has dominant importance for businesses, because in this way stakeholders focus on

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the objectives and factors that affect each phase, thus maximizing the benefits that derive from the process of their business (Newkirk and Lederer 2006a, b). The purpose of this paper is to examine the phases and the measurement of phases' success in order to understand the process of SISP and finally the impact of these factors on firm performance and competitive advantage as well as to end up in a conceptual model.

To manage this goal, the above scope of issues of SISP was theoretically analyzed by adopting the methodology of Literature Review (Webster and Watson 2002). The next sections discuss the phases of the methodology followed. First, the stages of Literature Review are presented. Next, authors display the findings of the literature review through a way which effectively states these results. Finally, authors end up with a theoretical model for further research.

Literature Review

Stages of Literature Review

The steps based on Webster & Watson LR methodology, are: Searching, which includes the selection of keywords, databases, topics and timeframe, backward search, involves searching of references of the papers, and forward search, which contains the searching of citations (Webster and Watson 2002).

Literature Review Searching

Searching was done in databases Scopus, Web of Science και ABI/Inform. The keywords and a combination of them which were used are: Strategic information systems planning, phases, success, innovation, firm performance, competitive advantage, information systems strategy and business strategy alignment.

Certain criteria were used for the selection of articles that had to meet the selected articles. Papers had to be published between 1980 and 2015, they should be focused as article or conference paper or conference review, they should have at least 15 citations, they should be in English and they were limited to the field of Business Management in each database.

Search yielded 326 papers in Scopus database, 360 papers in Web of Science and 401 papers in ABI/INFORM database. Their titles were examined and they were limited down to 514. Then, authors studied their abstract further and they received 309. Eventually, authors tested their available full text and they ended up to 176. A large number of papers were rejected in this stage due to lack of access to the full text. Next, out of 176 of these papers, authors deleted the same articles and they emerged a set of 50 papers.

After the initial search, authors examined the literature of 50 papers and selected common references for further analysis. They had selected all of those which had full text relevant to the subject under investigation. Thus, 3 papers added to the previous set of 50 papers.

In the last step of methodology, authors examined the citations of the 50 papers, according to their content and availability of the full text. Further, 7 papers were added and so authors included a number of 60 articles, which are analyzed. The searching was completed after authors made sure that the articles of all searches in all databases were common. The analysis of papers about the SISP phases, SISP success and their impact on firm performance is presented in Table 1.

The concept matrix analysis highlights issues related to SISP and presents a linkage between these concepts.

The SISP phases and success and their impact on firm performance are analyzed in the next section.

Suggesting an Information Systems Phases Performance Based on Conceptual Framework

The meaning of SISP has appeared to be important for the researchers since 1980 up to today. Topics that accompanied the meaning of SISP are the alignment of business and IT strategy, the IT capabilities of the organization and the influence of them in competitive advantage (Cao and Schniederjans 2004; King and Thomson 2000; Newkirk et al. 2003; Newkirk and Lederer 2006a, b). Benefits for enterprises from the use of SISP are improvement of sales, market growth, new, and innovative products, lower costs and optimization of the relations with customers. The methodology of SISP is a vital issue for businesses. It includes phases, and stages and it emphasizes the alignment of business strategy with Information Systems and the involvement, the support and the communication of managers in the process. Computer technology is used by businesses as a strategic tool to achieve competitive advantage. Each phase of SISP has goals, shareholders, technical, and concrete results (Mentzas 1997). The process of SISP consists of phases and dimensions of success. Researchers have examined the relationship between the phases of the process of SISP and success (Newkirk et al. 2003; Newkirk and Lederer 2006a, b).

SISP contains the following phases: strategic awareness, situation analysis, strategy conception, strategy formulation, and strategy implementation planning. In the first phase, the goals, the systems that are going to be used and the processes are set. In the second phase, an analysis of the current situation, critical success factors and analysis of the goals are accomplished. In the third phase, different scenarios and their strategic and technological impact are evaluated. In the last two phases the decisions of previous phases are concluded (Mentzas 1997; Mirchandani and Lederer 2014; Newkirk and Lederer 2006a, b).

Table 1 The number of selected articles and their concept matrix analysis with related concepts

Authors	Year	Method	Alignment	Concepts											
				Firm performance/competitive advantage	e-Business	IS resources	SISP	SISP phases	SISP success	IS planning	Innovation	Management commitment			
Basu et al.	2002	Survey					x								x
Bechor et al.	2010	Survey					x								
Bergeron	2000	Survey	x												
Booth and Philip	2007	Literature Review	x								x				
Brancheau and Wehrbe	1987	Literature Review		x				x				x			
Cao and Schniederjans	2004	Survey	x			x									
Doherty and Marples	1999	Survey						x							
Earl	1993	Survey and Case studies							x						
Galliers and Whitley	2007	Literature Review										x			
Heo and Han	2003	Survey								x					
King and Thomson	2000	Survey	x						x						
Lederer and Kearns	2000	Survey	x												
Lederer and Sethi	1988a, b	Survey							x						
Lederer and Sethi	1988a, b	Survey													
Mentzas	1997	Literature Review	x										x		x

(continued)

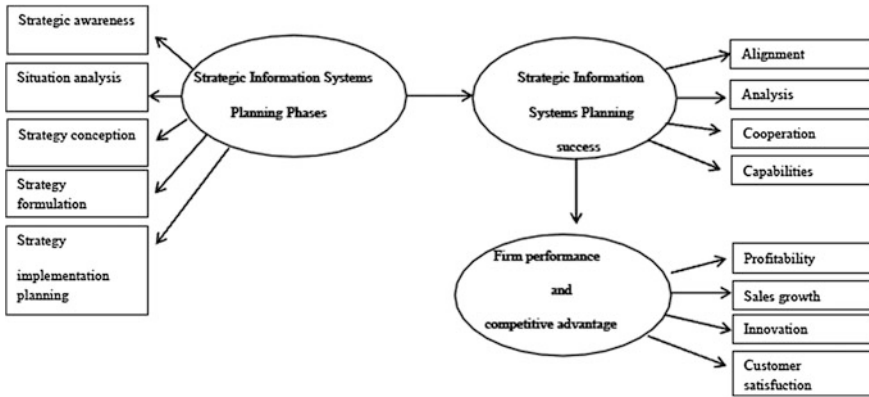


Fig. 1 The conceptual model

The measurement of SISP success is achieved with four dimensions: alignment, analysis, collaboration and capabilities (Newkirk and Lederer 2006a, b; Pai 2006). The success of the SISP is defined as the degree to which the objectives of SISP are achieved (Pai 2006).

To derive a competitive advantage from the strategic use of information technology needs support from the administration and alignment between the business strategy and the strategy of Information Systems (Mirchandani and Lederer 2014). Firm performance is calculated with four variables: profitability, sales growth, innovation and customer satisfaction (Bergeron 2000; Cao and Schniederjans 2004; Thomson and Too 2000). Knowledge of the phases of SISP is important, because with this way stakeholders focus on the objectives and factors that affect each phase, thus maximizing the benefits that derive from the process of their business (Newkirk et al. 2003).

Papers use both theoretical analysis and empirical survey, in order to investigate this research area. Thus, from the composition of the literature review is proposed the following theoretical model research, reflecting the analysis of these issues. Figure 1 presents this model, which includes the previous relationship between SISP phases, SISP success and firm performance. The authors feel that the chosen simple and visual way of presenting the framework is of the best service to the study as a whole.

Eventually, by identifying these relationships, authors will be able to predict the potential success or failure and performance of future projects.

Conclusions

This paper highlights the importance of SISP and explains how this process leads to competitive advantage. 60 articles were studied according to a Literature Review methodology of Webster & Watson to achieve the purpose of paper. Authors noted

the topics that accompanied the meaning of SISP. Knowledge of the phases of SISP is important, because in this way stakeholders focus on the objectives and factors that affect each phase, thus maximizing the benefits that derive from the process of their business. SISP phases are strategic awareness, situation analysis, strategy conception, strategy formulation, and strategy implementation planning. Researches measure the success of SISP by means of alignment, analysis, cooperation and capabilities. The impact of SISP process on firm performance can be measured in profitability, sales growth, innovation, and customer satisfaction. So, a theoretical model is suggested for further research of these relations and opportunities for quantitative research are proposed.

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Complex Dynamics of Single Agent Choice Governed by Dual-Channel Multi-Mode Reinforcement Learning

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Abstract According to the modern theory of adaption of socioeconomic systems to unknown environments only the interaction between agents can be responsible for various emergent phenomena governed by decision-making and agent learning. Previously we advocated the idea that adopting a more complex model for the agent individual behavior including rational and irrational reasons for decision-making, a more diverse spectrum of macro-level behaviors can be expected. To justify this idea we have developed a model based on the reinforcement learning paradigm extended to including an additional channel of processing information; an agent is biased by novelty seeking, the intrinsic inclination for exploration. In the present paper we demonstrate that the behavior of the single novelty-seeking agent may be extremely irregular and the concepts of chaos can be used to characterize it.

Keywords Reinforcement learning · Intrinsic motivation · Novelty · Complex dynamics · Emergence · Agent-based

Novelty Seeking as Intrinsic Motive

A fundamental feature of human beings is the trait of novelty seeking (Cloninger 2004) and they exhibit it across a diverse range of circumstances, ranging from choosing a vacation destination (Lee and Crompton 1992) to main critical financial

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decisions (Kuhnen and Chiao 2009). In the context of learning novelty seeking propels humans to actively learn and explore (Deci and Ryan 1985; Ryan and Deci 2000).

Recently (Zgonnikov and Lubashevsky 2014) we developed a dynamical model of single-agent adaptation as a richer alternative to standard reinforcement learning. In the simplest situation, a single agent faces an unknown environment, which is represented by a number of rewarded actions. The agent gradually learns the initially unknown rewards by making a repeated choice between these actions; in general, the rewards may change over time. Canonically, the ultimate goal of the agent is to maximize the total sum of the rewards gained throughout the process. In constructing the model we introduced the additional channel of information processing to reinforcement learning. We then analyze in detail how the adaptation dynamics changes when the agent behavior is governed not only by the external factors (that is, rewards), but also by the agent intrinsic motives, namely, the inclination to engage in novel activities. As shown, the behavior of the novelty-seeking agent may be inherently unstable and under certain conditions the increase of the novelty-seeking level may cause the agent to switch from the nonrational to the strictly rational behavior. In the present work we demonstrate that the individual behavior of a single novelty-seeking agent can become complex when the set of possible alternatives (or actions, or options) of its repeated choice contains more than two elements.

Model

As previously (Zgonnikov and Lubashevsky 2014), an agent is assumed to make repeated choice between finite number of alternatives (or actions, or options) x_i , $i = \overline{1, N}$. Through the channel \mathbb{Q} of deliberate analysis each alternative is associated with the corresponding reward r_i and the cumulative “objective” estimates q_i of its quality (Fig. 1). The estimate q_i is, first, updated with currently received reward r_i , and, second, subjected to the memory loss effect characterized by a time scale T_q . The novelty of the action x_i is assumed to be evaluated via a

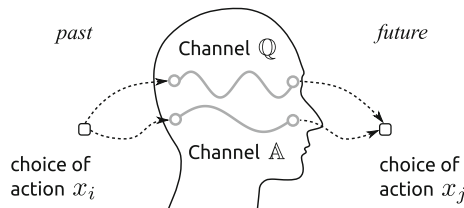


Fig. 1 Two channels of information processing. Channel \mathbb{Q} which processes the information about the rewards continuously interacts with channel \mathbb{A} which deals with all the information not directly related to the rewards

channel \mathbb{A} and is quantified by the choice probability p_i ; the actions with low probabilities are considered as novel. On the other hand, it may be interpreted in a sense that the agent becomes bored of the predominant choices, even if they are highly valued in terms of rewards. The “boredom” of the action x_i is quantified by the cumulative value a_i subject to increase by a value ϕ_i each time the action x_i is chosen and the memory loss effect with the time scale T_a .

Using the mean field approximation (Sato et al. 2002; Sato and Crutchfield 2003; Lubashevsky and Kanemoto 2010) this model is reduced to the following coupled equations and the expression for the probability of choosing the action x_i determined by information processing via the channels \mathbb{Q} and \mathbb{A} (Zgonnikov and Lubashevsky 2014):

$$\frac{dq_i}{dt} = r_i \cdot w(p_i) - \frac{q_i}{T_q}, \quad \frac{da_i}{dt} = \phi_i p_i - \frac{a_i}{T_a}, \quad p_i = \frac{e^{q_i - a_i}}{\sum_{j \in [1, N]} e^{q_j - a_j}}. \quad (1)$$

Here the factor $w(p)$ takes into account the effects of the forgone payoff extrapolation and the human over/undervaluation of rare and frequent events, respectively. Both of them cause a sublinear dependence of the factor $w(p)$ on the probability function p ; following (Lubashevsky and Kanemoto 2010; Kianercy and Galstyan 2012; Leslie and Collins 2005) we use the generalized ansatz $w(p) = p^{1-\gamma}$ with the exponent $0 < \gamma < 1$.

Complex Dynamics of Multi-Mode Learning

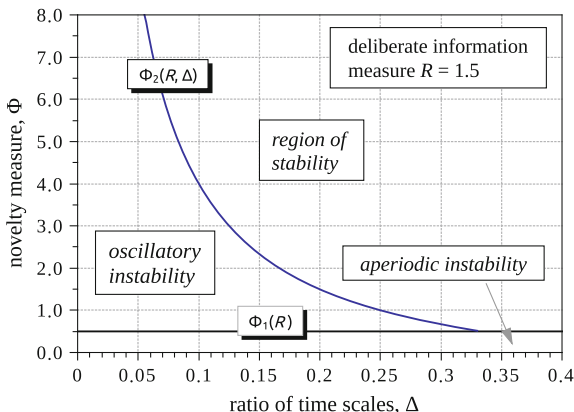
The goal of the present paper is to demonstrate a possible complexity of the agent choice dynamics affected by intrinsic motivations. So we confine our consideration to the situation when the agent has to make choice between the equivalent alternatives by setting

$$r_i \equiv r, \quad \phi_i = \phi \quad \text{for } i \in \{1, N\}.$$

The difference in the rewards of these alternatives endows the system with additional complexity (Zgonnikov and Lubashevsky 2014) which is worthy of individual investigation. The situation at hand shall demonstrate the effect of the novelty-seeking on the possible strategies of the agent choice, for example, a stable preference of choosing some one alternative, the equiprobable choice of all the alternatives, or change of this preference in time regularly or chaotically.

The linear stability analysis of the given model gives us the instability diagram, as shown in Fig. 2 in the space of the following system parameters:

Fig. 2 The instability diagram



$$R = \frac{(1 - \gamma)rT_q}{N^{1-\gamma}}, \quad \Phi = \frac{\phi T_a}{N}, \quad \text{and} \quad \Delta = \frac{T_q}{T_a}, \quad (2)$$

which in dimensionless units quantify the intensity of the channel \mathbb{Q} —the parameter R —and the channel \mathbb{A} —the parameter Φ . As shown in Fig. 2, there can be three characteristic regions of the system behavior near the origin of the phase space $\{q_i, a_i\}$, i.e., the stationary point $\{q_i = 0, a_i = 0\}$. In the case under consideration this point may be treated as the Nash equilibrium of the agent choice provided its actions are strictly rational and no other factors like emotions or different evaluation of rare and often events affect it. It turns out that for $R < 1$ this Nash equilibrium point is stable and there is only one possible strategy—the equiprobable choice of all the alternatives being stable even without the novelty-seeking effect. So in what follows we will assume the inequality $R > 1$ to hold beforehand.

For small value of Φ :

$$\Phi < \Phi_1(R) := R - 1, \quad (3)$$

The novelty-seeking effect is weak and the Nash equilibrium is unstable, which gives rise to the *steady-state preference* of the agent choosing some one alternative more often than the others. The particular choice of the preferred alternative is determined by initial conditions and is random in nature. It is interesting that the finite amplitude oscillations appear already inside the aperiodic instability region near its boundary. Therefore, the transition from this region to the oscillatory instability region, first, must be characterized as the subcritical bifurcation, when finite amplitude oscillations appear stepwise, and, second, has to exhibit significant hysteresis.

When the time ratio Δ is less than the critical value

$$\Delta < \Delta_c := \frac{R-1}{R} \quad (4)$$

There is another type of instability region matching oscillatory instability of the Nash equilibrium point in the linear approximation. It is bounded by the curve $\Phi = \Phi_1(R)$ from below and by the curve $\Phi_2(R, \Delta)$ from above (Fig. 2); here

$$\Phi_2(R, \Delta) := \frac{R-1}{\Delta} - 1. \quad (5)$$

The region above the curve $\Phi_2(R, \Delta)$ corresponds to the stable Nash equilibrium when the agent considers all these alternatives to be equivalent and, so, has no preference in choosing the next one. In contrast to the previous case, the transition between the region of the Nash equilibrium stability and the region of oscillatory instability is characterized by the supercritical bifurcation when after crossing their boundary the amplitude of the developed regular oscillations increases smoothly.

Inside the domain of oscillatory instability the system dynamics can be highly complex in properties. In particular, this domain divides into a collection of islands adjacent to one another such that inside one island the system dynamics qualitatively remains the same, whereas in the neighboring adjacent islands its properties change qualitatively, for example, the number of attractors or their type becomes different. The obtained above results allow us to expect that the properties of the steady-state oscillations can change via subcritical as well as supercritical bifurcation in crossing an island boundary. If in a given island the system dynamics are regular, we may speak about limits cycles characterizing the agent behavior strategy. In the case when it is chaotic there is no order in the variations of the agent preferences. Beside, the arrangement of these islands can be also rather complex, e.g., for some values of the system parameters there are islands spanning over the whole domain of oscillatory instability from the lower boundary up to the upper one. For other values, in crossing this domain as the parameter Φ changes, given the other parameters being fixed, we meet many islands with different properties.

Highly complex behavior of the three-mode system ($N = 3$) has been found for $\Delta \approx 0.2$. Figure 3 illustrates the evolution of the found attractors when the oscillatory instability domain for the same system is crossed upwards at $\Delta = 0.2$. In this case in crossing the domain of oscillatory instability many different islands of regular and chaotic dynamics are met. The found features of the agent choice dynamics are exhibited also by systems with a larger number of alternatives, however, it is likely that the chaoticity is depressed as the number of alternatives increases.

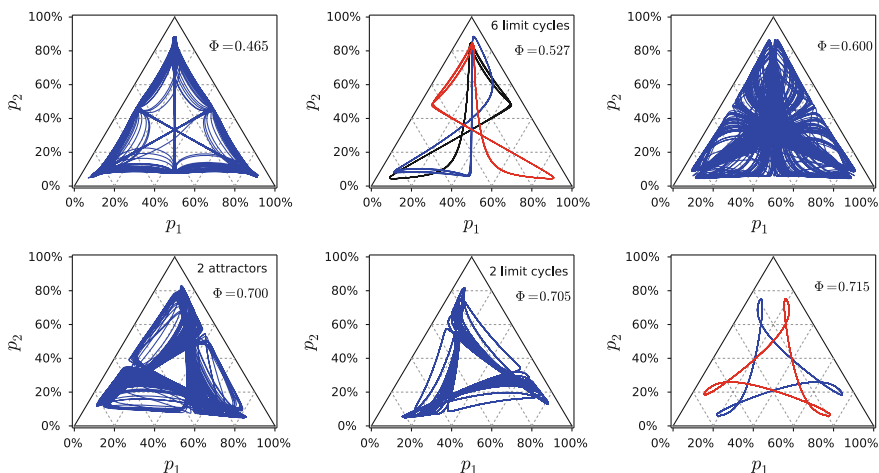


Fig. 3 Examples of the possible attractors in the $\{p_1, p_2, p_3\}$ -space for the three-mode system ($N = 3$) as the parameter Φ (the parameter ϕ) increases, given the others being fixed. The parameters used in simulation are $R = 1.5$, $\Delta = 0.2$, $\gamma = 0.5$, for these values the analyzed interval of the Φ —variations is bounded from below by the point $\Phi_1 \approx 0.462 < \Phi_1(R) = 0.5$ located inside the aperiodic instability region, where oscillations arise for the first time via subcritical bifurcation, and from above by $\Phi_2(R, \Delta) = 1.5$, the *upper boundary* of the oscillatory instability region

Conclusion

Our results have demonstrated that accounting for more mental complexity of the human evaluation of his/her actions greatly extends the spectrum of dynamical behaviors captured by the reinforcement learning model. It can enable the basic explanation of transitions between these behaviors depending on the parameters. Moreover, as demonstrated numerically, when the number of choice alternatives exceeds two, the system dynamics can be highly complicated. In particular, it reflects in the fact that the space of the system parameters divides into a large number of islands with different regimes of the agent choice dynamics, including regular and chaotic agent behavior with subcritical and supercritical transitions between them. Besides, the arrangement of these islands is also rather complex.

For multi-mode systems of choice alternatives the steady-state time variations in the agent behavior, regular or chaotic one, may be described in the following way. Due to the competitive interaction between the two channels \mathbb{Q} and \mathbb{A} of evaluating a given alternative x_i , their quality measures q_i and a_i , respectively, undergo continuous cyclic or quasi-cyclic time variations. In cases of chaotic dynamics the amplitude of these quasi-cyclic variations exhibits irregular but rather smooth time fluctuations. The agent choice transitions between the alternatives with the highest priority at the current moment of time may be convinced of as a certain synchronization of such cyclic or quasi-cyclic variations.

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Blended Learning and Business Modeling in Technical Translation Studies

Ekaterina Sosnina

Abstract Our work describes blended learning initiative and joint activity of the Department of Applied and Computational Linguistics and the regional Translation Service Provider and its Training Centre. We develop and support the special UNITECH-platform based on Moodle e-learning system to model the typical business processes in translation business practice. In this paper, we focus on the aims, tasks, and structure of the UNITECH-platform and its potential applications. The UNITECH-platform provides support for several academic courses in Translation Studies. This platform for blended learning also stimulates the usage of professional translation and linguistic tools, e.g., ABBYY SmartCAT Computer-Aided-Translation. We also present the results of the UNITECH-platform pilot testing for the course in Technical Translation for two groups of learners studying Linguistics and Translation at the Faculty of Humanities, Ulyanovsk State Technical University.

Keywords Blended learning · Translation business processes · Technical translation · Learner profiling

Introduction

The project of blended learning, we describe in this paper, supports the business initiative to solve the problems in university training at the linguistic departments and faculties of Translation Studies. Application of blended learning techniques in translation teaching became good tradition last years (Galán-Mañas and Albir 2010; Lederer 2007).

We should note that there exist typical translation business issues and processes that should be learnt and understood by those studying or specializing in translation.

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These processes are considered in the popular standard BS EN ISO 17100:2015 Translation Services: Requirements for translation services, which replaced the earlier standard, EN 15038:2006, in May, 2015. These documents are to “chart the best practice processes involved in providing a translation service through commissioning, translation, review, project management and quality control, to delivery” (EN 15038:2006). The standard addresses the issues of Professional competences of translators, Continuing professional development, Translation process, Checking, Proofreading, etc.

Employers on the emerging translation market often process and handle business and technical documentation for wide varieties of industries, but the personnel of most translation service providers are graduates of different linguistic departments with humanitarian skills and knowledge. They often know foreign languages, translation theory, and basic translation strategies, but do not understand business processes in a translation company and have little knowledge of industry domains and the tools. So there is a gap in education processes and a lack of real competences that are close to expectations of translation business and consumers.

Our department has several standard academic courses in Translation, and the graduates sometimes choose the work on translation market. New generation of Russian state educational standards also aims to develop the competences close to market requirements and providing individual trajectory of a student. Support of such individual educational trajectory is mainly aimed at forming an environment for mapping a personal success as professional fulfillment through forming virtual educational space which interlinks offline courses and online materials, generated by experts and practitioners (Taratuhina 2014).

Translation market and global translation business is rapidly changing and demands new approaches and projects involving academic institutions and there appear new issues for translator training, using intended learning outcomes as a means of formulating the connections between the current state of the language services industry and the professionalization element in university translator training program (Olohan 2007). These academic and market trends stimulate us to search and apply new models of blended learning and smart e-learning techniques integrated with the business solutions, requirements, and intentions. One of such initiatives is realized as the joint project of our department and the regional translation provider and the on-going activity and development of the e-learning structure and methodology for the UNITECH Training Centre (Sosnina et al. 2015).

e-Learning Platform and Methodology

The UNITECH Training Centre supports e-learning initiative and joint activity of our Department of Linguistics and the regional Translation Service Provider, Unitrans, and its Training Centre. The UNITECH Training Centre tries to support

efforts of regional employers and university teachers in development of adaptive academic programs to model the business processes of the organization, so the main aim of the project is to match professional knowledge and skills of students with the business requirements of the employers. The UNITECH Training Centre also aims to model and simulate business activities, demonstrate business objectives as to increase translation quality, reduce time for translation operations, solve the problems of human resources in translation business.

The project is developed on the Moodle distance learning platform. The website of the project www.unitechbase.com (the website just now is in the Russian language).

Our paper considers the pilot testing of the first project module, *General course for beginners in Technical Translation*. This course aims to model business situations, involve young translators into basic business processes of a translation company, demonstrate translation problems, the principles of terminology management processes, and use of emerging technologies at modern translation market.

The full academic course is realized by the university faculty at the pilot universities, the staff of the Training Centre provides technical and information support for all members.

The main purpose of the course is also to model and support the processes of cognitive development of a student, to improve general technical literacy of learners, develop their cognitive skills, logical analysis, and technical translation. Students are also trained to work with cloud CAT-tools.

The course consists of 30 academic units (30 classroom and 30 self-study hours). The course is recommended to learners at the third and fifth years of their university program. Implementation of this course into the curriculum of a university organizationally is rather easy and does not require much time and efforts from stakeholders.

One of the main pluses of the course is the involvement of all the university members in real business processes. When a student successfully passes the final test and completes the course he may get the Certificate from the employer, TSP Unitrans.

The Course Modules

Module 1. Top-30 articles from Unitech Knowledge Base

Experienced translators, who work in industry, have understanding about a set of basic devices and equipment together with the principles of their operation and application. Accumulation and development of this cognitive background often occurs at practice and could be associated with rather great difficulties, e.g., short work terms that could reduce translation quality.

In the survey done by our academic partner and employer, LSP Unitrans, discovered 30 most widespread technical devices, which are well known by experienced translators, e.g., *a control equipment, an electric motor, a bearing, a hydraulic and pneumatic systems, lubricant* et al. We also tested the students studying Linguistics and Translation at the Faculties of Humanities and noted that students usually did not realize the features and operation of these devices.

So to start the work, the project members developed the Unitech Knowledge Base of descriptive articles about these 30 basic technical devices. Each article is presented as a text in the native language (Russian) and contains illustrations or/and video to form the concept images of a learner.

Module 2. Texts for translation practice

To practically apply the theoretical information from the Unitech Knowledge Base, each unit has a practical module including English text on a topic of an article to be translated by students into the Russian language. TSP Unitrans experts could provide tutors of the course with their example translations of all texts; the tutors could also use their own example translations, add and develop the lesson with additional materials and assignments. A tutor assesses the completed learner translations in any grade scale.

Module 3. Master-classes and webinars.

The e-learning course contains short (5–10 min) video materials to develop necessary translator's competences and understand business processes, e.g., Translation process, Proofreading.

Module 4. Video-support.

Each course module also includes one open source video unit that demonstrates technologies of manufacturing of familiar products and visualizes operation of a broad range of industrial equipment, production, and quality control technologies.

The members of the project also get information about interesting courses held in popular MOOCs, e.g., Coursera, Universarium, through their profiles.

Module 5. Assessment.

Today we use two tests to check the quality of learning and assess student works: intermediate test after the tenth lesson and the final test at the end of the course. The intermediate test could be done in e-learning environment. When a student passes the full course he gets access to the final test of 120 questions conducted in the computer class under supervision of the tutor.

Module 6. Final survey.

At the end of the course, the student passes a final survey and answers the questions that help us: to evaluate personal satisfaction with the study process, with the contents of the course and learning environment; to track the dynamics of interest in technical translation; to determine personal plans on further deep study of special technical disciplines or industry.

The overall review of answers could be accessed by stakeholders on the e-learning Unitech Training Center.

Modeling of Translation Business Processes

Typically a translation service provider controls the issues in Human resources management, Professional competences of translators and their professional development, Professional competences of revisers and reviewers, Technical resources, Quality management system, Project management and more specific, e.g., legal and financial, issues.

A translation service provider also considers different aspects critical to its business processes, e.g., Administrative, Technical, and Linguistic aspects. But the most attention TSPs pay to inner business processes and procedures, such as

Preparation; Translation process; Checking; Revision; Review; Proofreading; Final verification; Managing translation projects.

Our project and teaching methodology when implementing the course tries to demonstrate our students these business issues on practical examples and to model these typical business processes.

The Unitech Knowledge Base and its usage develop professional competences of young translators and provide their professional and cognitive development in technical translation.

The use of technologies and the choice of Translation Memory toolkit are also rather critical issues of professional development, as translation business and its service providers often use Machine Translation software and modern Computer-Aided Translation tools and require the staff to be skillful in such applications. Russian universities began to use translation software in their curricula, but till now it is not a widespread practice, as these computer programs (and even their academic software licenses) are still rather expensive for students and tutors. To solve the problem we use an open cloud Translation memory environment, ABBYY SmartCAT, appeared in July, 2014. As a result, our students create their technical and professional profile and get practical translation skills using emerging Translation memory system, translation management tools, and quality control systems.

In our academic curriculum, we study the typical translation business processes and the Unitech Training Centre gives the opportunity to apply the theoretical issues at practice and check their ins and outs. The students also take part in collaborative activities as terminology management, verification, and editing.

Implementation of the Course. The First Responds

At present our department uses blended learning in most academic courses of the linguistic curriculum. The Unitech Training Centre, the project and the courses were presented to academic community during the APL International Conference in October, 2014. The pilot testing of the learning environment and its modules took place from November, 2014 till May, 2015. The General Technical Translation

Course for beginners was built into the curriculum of our faculty and academic schedule and presented for two student groups, which had chosen Translation as the term course. The first group consisted from 10 learners of the last year of study, and 14 learners of the third year of study were the second group. We should note that our university Translation course includes several learning modules except Technical Translation, so we could use only the schedule and academic hours for this module only, which goes in parallel (2 h once a week) with the other translation modules (6 h a week).

The results of the course were different and rather interesting in two groups. The students of the junior group were more motivated for learning, but less qualified with worse skills in linguistics and translation. It took twice more time to understand the business processes, technical topic, the device and its functions, so the schedule and the academic time were not enough as they had been planned by developers and the tutors. The overall dynamics of learning in this group was positive, motivation kept stable.

The students of the elder graduate group were less motivated for learning, but more qualified with better skills in linguistics and translation. The academic planned time was enough to pass the course modules. The overall dynamics of learning in this group was very positive, but about 30 % of students said they would not choose technical translation as their future work.

The personal learners' responds in both groups were also positive as the students understood business processes and issues, business aspects in model situations, and also their individual problems and preferences, got and developed their professional skills and learnt new cloud software toolkits.

Conclusions

Just now the project passed the pilot testing at several local universities and is being effectively used in 18 Russian universities by the linguistic departments and 250 students annually. The Training Centre involves translation business into educational processes, models the popular business processes on the technical translation market and demonstrates the ways to overcome the difficulties of the domain. In 2016–2017, the team of the project plans to involve more than 20 universities into the project.

The technical staff of the project continues developing software including collaborative work environment, knowledge management system, and toolkit to model the flexible database profile with different personal indicators, i.e., language and expert skills, academic grades, experience, interests, motivation, completed courses. Employers' access to such database could provide information about specialists in certain domains of industrial translation, and graduates of translation majors could accumulate and develop the personal profiles in their field of study.

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Creation Technologies for Smart Hypertextual Tutorials in Intercultural Educational Space

Tamara V. Kuprina and Natalia Yu. Nevraeva

Abstract The chapter deals with new ways of improvement of students' bilingual education. In particular, a student group is considered as a separate "learning organization" composed of several teams engaged in educational projects. A modern form of the "learning organization" is a hypertext organization that creates knowledge. The concept is built on the research proposed by Japanese experts I. Nonaka and H. Takeuchi. The authors of the article emphasize that the teamwork has a number of advantages over the individual one. The lecturer does not only teach students but also coordinates the efforts of the team (group), directs them towards development and improvement of the quality of the acquired skills. The result of this study is the creation of the hypertextual methodical tutorial by students themselves corresponding to their wants and needs.

Keywords Hypertext technologies · Hypertext organization · Learning organization · Smart tutorials

Introduction

In today's global world, more and more people are interested in expanding contacts with representatives of different countries and cultures. It helps to study, work, travel, and just communicate in real and virtual space. Unfortunately, our communication is not always successful, even with a good knowledge of foreign languages. The problem is much deeper; it is in traditions, customs, and cultures,

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which must be considered in order to achieve mutual understanding and successful cooperation.

In addition, it should take into account that the current generation of young people is very different from previous generations. They are often referred to Generation Z, who was born between the early 1990s and the middle 2000s. The common features of Generation Z are determined by the fact that they are “connected” to each other due to such things as the Internet, YouTube, mobile phones, SMS, MP3-players, handheld devices such as PSP. Therefore, Generation Z becomes synonymous with the English language term Digital Native. In most cases, Generation Z was born in the days when the Internet came fully into the life of contemporary people. In addition, Generation Z is the first generation born in the days of full globalization.

Thus, first, it is necessary to change the teaching technologies because traditional “passive” ones, based only on memorizing and reproducing the material under study, can no longer fully meet the psychological type of students. Second, in the Generation’s Z life there are many virtual gaming moments. Consequently, it is more and more necessary to introduce interactive technologies into the learning process. Third, one of the demands of globalization is the ability to adapt to a new unfamiliar environment and be able to communicate with those who are not like us.

Educational Migration and Open Online Courses as Basis for Development of Innovative Educational Technologies

At present, the competition of countries—exporters of education is entering a new round, there are new players. By 2025, the total number of students in the world will increase from 97 to 260 million people. According to the forecast of UNESCO, at that time, the number of foreign students will be 5–7 million. Two-thirds of them will be from Asia. Leadership for the supply of students will belong to India and China, therefore, the fight will be precisely for these regions (Ryazantsev 2015).

Absolutely new direction of training and attracting foreign students are mass open online courses (MOOC). In this regard, one can speak of a so-called virtual educational migration. Education not only changes the distribution channel, but also high-quality format by digital channels of learning, such as gamification, simulators, virtual reality 3D.

Virtual technologies allow creating flexible individual training scenarios tailored to the rate of assimilation of each student. Moreover, with the help of web cameras it can also be monitored nonverbal communication, and using smart phone and “smart” watch—even the change of the physical state of the student. It allows keeping the track of the time of losing focus, adapt, and optimize the flow of information.

However, there are several problems in using MOOC-platforms. For example, not all specialties can be taught virtually (e.g., area of medicine). Due to the lack of

real communication there is a loss of training socialization. “Although, perhaps, for a generation of gadgets online communication skills and training will be an important part of the socialization while growing popularity of virtual communication and remote operation” (Saraev 2014).

There are also MOOC-platforms in Russia. The closest analogue of Coursera is “Universarium” launched with the support of RIA “News” and ASI, although its content is not enough. However, the support for such Russian platform provides an opportunity to promote the Russian language and culture, Russian education in the global market for online learning.

At the same time, it may appear increased competition in the domestic market of educational services. It should force educational institutions to innovate in order to improve their quality, focusing on the achievements of universities with a worldwide reputation, which may serve as a benchmark. Therefore, this situation will force educational institutions to design and develop educational innovations, thereby increasing their competitiveness (Kuprina 2014).

Creation of Hypertextual Teaching Technologies in Learning Hypertext Organization

Social and economic changes that characterize the present period, force to revise curricula, their purposes and content, which leads to changes in teaching and technologies. The question concerns the knowledge that must be submitted in universities and their introduction into the training process to ensure the most effective learning process.

The content of education contains the whole culture of mankind: the system of scientific knowledge, emotional and imaginative world of art, historical traditions, system of activity, including creative, attitudes, and value orientations. They are very different components and mastering them requires not only the perception, understanding, memorizing, reproduction of actions for samples, but also an emotional response, their own research, assessment activity, and much more (Zagvyazinsky 2004).

In addition, the knowledge of the culture is inextricably linked with the knowledge of language as language skills help better understanding and accepting the lexical, grammatical, finally, the psychological characteristics of the countries of studied languages. Acquiring linguistic experience, there is a gradual change in thinking in relation to ongoing training in the “switching” of thinking, since the transition from one language to the other is not just replacing one word with another, but a transition to a different structure of pronunciation, grammatical structure, and meaning of concepts. Bilinguals consciously or unconsciously compare languages, analyze them to avoid interference. Language is perceived as one of the many that provides them with a special responsibility to their own speech (Bekasova and 2014).

Thus, the introduction of new technologies based on psychological characteristics and professional interests of the students are essential in a modern higher school. The process of engaging students in the learning activities, the use of innovative technologies play the enormous role.

In general, the newest models of education are oriented to an independent educational and cognitive activity of an individual, a fundamentally different relationship between a lecturer and student, research and application of innovative teaching methods, combining to provide the relationship of educational and developmental functions of education. It is necessary to pay special attention to such technologies of education, in which students compare the educational material, take part in the proposed situations, showing active steps, experiencing a state of success (Kadyrova 2014).

Today, the concept of “learning organization” is a project of how the organization, including a training one, should be structured in the twenty-first century.

According P. Senge (*The Fifth Discipline*, P. Senge, 1992), one of the main founders of the concept of “learning organization”, “from time to time, most of us play the role of a certain member of a team or a group of people acting together in an extraordinary way, trusting each other, complementing strengths and weaknesses of each other and compensating inherent limitations of other team members; these people have common goals overcoming their individual goals, and produce extraordinary results. This exciting event in their experience is an example of learning organization activities” (Parsloe and Wray 2003).

The modern trend of a learning organization is a hypertext organization, which consists of three different contexts. First, traditional knowledge (the traditional context) may be in the system itself, for example, readymade training materials. Second, the project teams provide another context, which allows team members (group of students) to consider traditional knowledge from a different perspective. Third, formed by the previous two layers, the knowledge base (new context) in which it is stored, evaluated from different perspectives, and improved (Adapted by T. Kuprina according to I. Nonaka and H. Takeuchi, 7, p. 221).

The lecturer not only teaches, but also coordinates the efforts of teams (groups), guides them toward the improvement and mastering the quality of the acquired skills: cooperation, interpersonal communication, decision-making, the ability to justify decisions, and even the ability to listen to and talk with arguments. It may also include knowledge of intercultural relations, which is important in terms of broad international cooperation (Kuprina 2006).

Thus, we can talk about bilingual education when they study not only a foreign language, but perceive the basis for the future professional context with the help of it. Bilingual education has a number of advantages in the development of the student’s identity: the flexibility of cognitive processes, intensification of linguistic abilities, ability to perceive without disturbing conflicting information (actual tolerance), and development of creative skills (Petrikova et al. 2013).

Delano et al. (1994) notes that innovation in the study of the English language (or any other language.—Approx. T. Kuprina) as a foreign language is a full change, underlying philosophy of learning (learning a foreign language), brought

by the direct experience, research, and other means, that result in restructuring of the educational process so that the new program improves the process of language learning (Kennedy et al. 1999).

The students should be encouraged to try changes and evaluate the result. Evaluation is vital to support the adoption or rejection of the new. It is a tool to help make an informed decision and to participate in the change process. This assessment also helps to increase the students' motivation and changes the audience behavior.

As a result of discussions the students may have valuable ideas and opinions on the matter to be considered in the preparation of the training program. Thus, future specialists perform an active role in the decision-making process with the respect to their own training activities. At the same time, it is a method of teaching for decision-making and responsibility for those decisions as a whole, which is necessary for future professional activities.

Taking into account the above situation, we have drawn up a pilot program for creating hypertext professionally oriented materials by students themselves who are enrolled in IT engineering specialties. Students had to choose the theme of the section, grammatical, lexical, and audio-visual materials (Kuprina 2006; Nevraeva and 2014).

As a result, the groups selected several sections in the appropriate directions. It should be noted that the students themselves formed subgroups to work on specific parts of the section. And every student was engaged in only one direction. Thus, the work was done in a hypertext organization.

Students have developed the following topics: "Social Networking", "Cyber-Bullying", "Modern Technologies", "Facebooking" and others. Thus, they have identified the topics that are relevant and, most importantly, are a keen interest for the students. Grammatical aspects were also selected and analyzed by students. Thus, we have received information about the material, which is defined as difficult by students themselves.

The material has been designed as a hypertext. Usually the hypertext is represented by a set of texts that contain nodes of transition between them, which allows choosing readable information or a sequence of reading. In the broader sense of the term, hypertext is a text snippet, dictionary, or encyclopedia, where are links to other parts of the text, usually associated with the term.

Hypertext is used to create the effect of the game, because the number of values of the original text is expanding, due to the formation of the reader's storyline, which is important for the Generation Z.

So, in our view, this joint project can be considered successful, because the end result has met our expectations and tasks. We have identified relevant topics and difficulties in applying different linguistic aspects.

Conclusion

Thus, expanding international contacts, including in the field of education, as well as the specific cognitive features of the Generation Z, preferring the virtual and creative forms of work, require creating new educational technologies. It is necessary to pay attention to such education technologies in which students are actively involved in the proposed activities. So, the student group can be viewed as a learning organization that unites talents and resources applied to the project of new knowledge creation.

A modern learning organization is a hypertext organization consisting of three contexts: the traditional knowledge, new context, and new knowledge. The technology can be carried out in the foreign language classes in the implementation of bilingual education when students get their professional skills with the help of a foreign language. In this context, the lecturer is the manager of innovative knowledge.

Taking into account the above situation, we have drawn up a pilot program to create hypertextual professionally-oriented tutorial materials by students themselves. As a result, we have got information about the relevance of materials for the Generation Z, identified problems and their possible solutions.

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The Use of Individual Learning Styles in e-Learning

Y. Taratukhina and Sarapulova E. Lavrenova

Abstract This chapter deals with the long-time problem of the individual approach to teaching researchers and has many creative solutions. With the advent of the era of e-learning, this problem is even trickier, since we are dealing with the primacy of electronic systems. This article discusses the problems of the use of individual learning styles in e-learning. It describes existing approaches and analyzes their strengths and weaknesses.

Keywords Personal learning style · e-Learning · Personal learning styles in ITS

Introduction

Research on learning styles has a long history, but with varied and contradictory conclusions. A learning style can be defined as a kind of model of stable individual cognitive functions and features that defines the preferred way to motivate the individual. According to Kolb's concept (Kolb and Fry 1975; Lewis 1999), individual style of activity is a system of the hallmarks of human activity that are reflected in the style of education (particularly of motivation, cultural-cognitive profile of individual core competencies, etc.). Accordingly, taking into account the personal characteristics of the student (particularly cognitive and mental abilities) and an understanding of his style of training will be a major component of the individualized approach. We believe that the individual educational trajectory can be designed in high school (elective courses), with individual tuition, etc., and outside, fully using all the possibilities for access to global educational resources, that perhaps take into account personal learning styles of the student made easier

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with electronic or mixed learning, when the same information can be presented in different forms. In fact, an individual approach can be carried out with the help of technologies of designing “smart,” culturally sensitive online media, and through the training of cultured and qualified tutors. It can be possible to create an environment that will allow the design of individual educational routes and individual educational trajectories, making the learning process a non-linear variability, which is the most adaptive. Thus, each student can design his or her personal competence profile, relying on the doctrine of the “zone of proximal development,” the concept of personal style training under the guidance of a mentor (tutor), or a “cultural intelligence” environment (and recommendation service); in other words, the individual can build skills to model his/her competence profile.

The Models of Personal Learning Styles

In the literature, there are many models of educational styles, and all offer different descriptions and classifications. Coffield et al. (2004) highlights the 71 model styles of education and believes that 13 of them lead to the theoretical models of the importance and breadth of the field of their use and their impact on other models of image styles; this is despite the fact that in this area, much research and some important questions still remain open. First of all, there is no single term for “learning style.” Honey (Kolb 1999) and Mumford, for example, determine learning style as “the description of the attitudes and behaviors that determines an individual’s preferred learning style.” Felder and Silverman (1988) defines educational styles as “characteristic strengths and preferences of the ways in which students learn the process information.” James Gardner (1989), Fischer (1998) and Barmeyer (2004) define learning style more closely, arguing that it is “an integrated method and the conditions in which students perceive and most effectively treated with store and reproduce what they are trying to learn.”

Depending on the definitions and values of the educational aspects of the style of other authors, this is called “educational strategy” or “cognitive style.” Educational strategies can be regarded as some of the methods that students use in certain situations; these strategies may vary depending on the teacher, the subject, and the situation.

Caulfield pitched five models that such large groups in this classification are based on; the idea is to try to reflect the views of the main theorists in the field of learning styles. In the first group, based on the idea of learning styles and preferences, there are four modalities: visual, auditory, kinesthetic, and tactile (Grinder and Bandler 1983). The second group deals with the idea that learning styles reflect the underlying characteristics of the structure, including the types of cognitive abilities of students. The third category includes the learning styles as a single component of a relatively stable personality type. In the fourth group, learning styles are considered to be relatively stable preferences in education. This last

category is according to learning styles to educational approaches, strategies, orientation, and training concepts.

The Relationships Between Cultural Values and the Learning Style Preferences of Students

Let us see what exactly the difference in the learning styles of students from different cultural groups is, according to some of the researchers. Zhang (2002) investigated cultural differences in cognitive styles in teaching in international schools, watching the students from Northern Europe, North America (USA and Canada), Europe, and Southern and Southeast Asia (China, Taiwan). The author analyzed the processes of perception and processing of information, educational strategies (relying on H. Gardner's Theory of Multiple Intelligences (Gardner 1989, 1991), and the response to information and ways of solving problems, and he introduced the concept of the "cognitive style of learning;" this, according to the definition of the researcher, involves a process of analysis and knowledge representation. It is understood that the concept of cognitive style is very closely intertwined with the concept of learning style, which is usually a result of the cognitive style.

The researcher argues that based on the "Theory of Multiple Intelligences," the ability of adults of different cultures represents various combinations of various types of intelligence. Although all normal individuals, in varying degrees, can possess all kinds of intelligence, each individual has a unique combination of more- and less-developed intellectual abilities that explain the individual differences among people. The author notes that the effectiveness of a didactic model that is based on the theory of multiple intelligences depends on the cultural and semiotic variation. We, in turn, can assume that logical-mathematical intelligence will dominate as a component of the Western rationalist approach to information processing (individualistic types of crops); personal and existential intelligences will be the dominant component of information from representatives of collectivist-type cultures, and so on (Bennett 1986; Honey and Mumford 1992).

The main criterion that contributes to cognitive style, according to some researchers Nisbett (2003) is the "field dependence" and "field independence" of Americans and Europeans is mostly field independence, while in the majority of Eastern cultures it is field dependence. During training, representatives of the Asian countries are more sensitive to the needs and reactions of colleagues and show good results, especially when they get positive reinforcement, e.g., praise from the teacher.

If we talk about the role of the modalities of perception (by Grinder), Zhang noted that students from the Nordic countries combined the use of learning styles (visual, kinesthetic), and prefer verbal and mathematical approaches and classroom training. Students from North America prefer presentations, role-playing, and group

discussions, which is very typical of the American and Canadian education systems on the whole. American students prefer the visual approach, with a lot of interactive content in the learning process, and discussions, which allow them to express themselves and their own points of view. Students in Southern Europe are remarkable in that they are very partial to real-life training cases. Asian students prefer the theoretical system, which is a logical step-by-step approach. The dominant visual modality explained by the Asian students belongs to the ideographic language group. Spanish students prefer the kinesthetic approach with highly structured material, and they love to cooperate in solving educational problems. For blacks, the characteristic kinesthetic learning style, with a lot of practical components, dominates. They like to work together with the teachers, field dependence. Most blacks mainly use the analytical style, whereas Hispanics prefer the synergistic style. They are representatives of a polyactive type of culture that can be engaged in a few things at the same time, yet miss when it takes a long time to do just one thing. As for the study of the learning styles of students in East Asia (Japanese, Chinese, Vietnamese, Korean and Filipinos), it may be noted that all the representatives of these cultural groups were motivated group training. Eighty-six percent of Chinese students prefer to “organize” by the formal (routine) learning style, as opposed to the flexible style of teaching in a game format.

Sharma (2009) investigated the learning style of Indian students and identified the following patterns: Members of individualist cultures are characterized by high-power distance, pressure, social conformity, a high index of collectivism, and others, which dictate the specifics of learning style preferences. As for the specifics of the information, we can say that they feel more comfortable in the format of “recipient of knowledge” rather than “pioneers.” As in China, in India, the teacher is a figure who enjoys unquestioning respect. Indian students are quite adaptable, have a strong visual preference to work with educational material, and their information is processed sequentially, preferring logic and clear structure, like the facts. The training is dominated by an inductive style of work with the information. They like to work in teams and to solve group problems. With regard to decision-making, it should be noted that they have a reflexive way of thinking, a tendency to the analytical style (showing good results in the exact sciences), and the lack of a bright pronounced propensity for innovation and creativity. Indian students are mainly pragmatic, making decisions on the basis of objectivity, utility, and functionality.

The Problems of Using Personal Learning Styles in ITS

Adaptive educational systems deal with this exact problem, i.e., the use of individual learning styles. Their goal is to provide the students with courses that meet their individual needs and characteristics as well as their learning styles. Despite the fact that adaptability is a great advantage of these systems, they have serious limitations. For example, adaptive systems lack integration because they support

only some of the features' web-formation, and the course content is not suitable for reuse. Consequently, use of these systems is rare. On the other hand (insert name LMS) are still widely and successfully used. They aim to support teachers and make on-line teaching as easy as possible. However, despite the fact that educational and psychological theories support the idea of adapting to individual differences, the pupils' LMS provides adaptability or small, or in most cases, do not provide for their adaptability.

The most productive theoretical framework that implements and develops adaptive educational apps is "reasonable" (programmable) training systems, adaptive educational hypermedia environments, and adaptive educational systems, which are available through the web-version. This framework (basic structure) actually represents a paradigm (intelligent educational system), which is based on the general concept of data that includes a domain knowledge expert model, student model, teaching model, and communications model.

There are three areas associated with the paradigm of adaptive educational web-systems. The first is improving the educational model, especially its learning style. The second is improving the educational model of adaptive models, modes, and control. The third area focuses on developing a new type of interaction between the learner model, the pedagogical model, and content. The most significant contribution of this paradigm is possible in the development of technique adaptations that occur in the process. Systems developed within the framework of this paradigm of intelligent educational systems have led to significant progress with respect to their use and promotion of more modern instructional techniques that adapt the learning process to a variety of learning styles, although there are some important issues that still remain unexplored. The problems associated with the definition of adaptation and conceptualization of learning styles can be identified in the development of adaptive software within this paradigm.

In some cases, no distinction is made between knowledge that is a type of cognitive level approach to the design and style of learning, which can be defined as the preferred type of cognitive structure. Some authors do not distinguish between learning styles and instructional strategies; besides, most of the systems used tool measures that are characterized by low and unreliable indicators of validity. Existing projects are now adaptive educational hypermedia environments that tend to combine instructional strategy models of learning. In most cases, the instructional approach does not reflect the current trends of modern instructional theory and practice.

Conclusions

As for people's learning style preferences (not their level of knowledge, skills, and cognitive abilities), people with different abilities can be found in a variety of learning styles. Furthermore, even when placed in the non-preferred terms of perception and processing of teaching material, people on the same level are able to do

what is required of them, as they include the necessary cognitive mechanism adjustments perception.

Creating a prototype of adaptive software is the best way to work with theoretical constructs such as learning style, adaptive learning scenarios, models and control. The learning style is a cognitive structure-type preference. Concurring (practical) behavior students as a cognitive phenomenon has given a good explanation of the relatively in small differences in people with different learning styles.

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On Communicative and Didactic Aspects of Mapping An Individual Study Pathway in Electronic Educational Environment

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Abstract The paper dwells on theoretical grounds for mapping an individual study pathway in electronic educational environment. Here, individual study pathway is viewed as a purposeful plan of a person's competence profile. Also, the chapter points out parameters for designing a model of individual study pathway. Currently, one can easily state that the major objective of the modern education is to get a person prepared for living in the rapidly changing world with its global-oriented multi-cultural environment. In its essence, global education unites various educational systems and models, based on divergent cultural, religious, philosophical outlooks. Building up a unified educational environment is one of the top priorities for the nearest future. However, this is not an easy task, and is based on preserving national identity on the one hand, and involving cultural and educational integration on the other. Today's concept of education means lifelong learning. These processes cause the knowledge-based approach in education to be gradually replaced by competence-based one. Nowadays we can witness a number of educational processes migrating into the Internet and, consequently, they are becoming more transparent and more or less multi-cultural. It is obvious that with the application of electronic educational environment (EEE) the didactic functions of a tutor will be changed, and the whole educational process will become autodidactic. And, before mapping an individual study pathway, one must decide how this individualistic approach will be applied in EEE where there is no immediate communication between students and tutors. When studying via the information technologies, a student is supposed to develop individual learning skills and to get well acquainted with the up-to-date online education technologies, which means that the student's self-motivation becomes a more important factor.

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Keywords Individual study pathway · Electronic educational environment · Constructive learning

Introduction

Nowadays, the paradigm of education is experiencing great transformations. Educational system is steadily becoming intercultural, which is mostly due to the integration processes in socioeconomics sphere. The concept of education has transformed to the so-called “lifelong learning.” Because of such change tendencies, “knowledge” approach in education has been steadily drifting toward a “competence” approach. The whole education format has started to incline toward tailoring personal educational strategy according to one’s intellectual capacities and preferences.

Nowadays we can witness a number of educational processes migrating into the Internet and, consequently, they are becoming more transparent and more or less multi-cultural.

It is obvious that with the application of electronic educational environment (EEE) the didactic functions of a tutor will be changed, and the whole educational process will become autodidactic. And, before mapping an individual study pathway, one must decide how this individualistic approach will be applied in EEE where there is no immediate communication between students and tutors. When studying via the information technologies, a student is supposed to develop individual learning skills and to get well acquainted with the up-to-date online education technologies, which means that the student’s self-motivation becomes a more important factor.

A tutor’s role here will be taken by the EEE itself. We believe that, in order to fulfill this individualistic approach to education via EEE, it is necessary to introduce several parts (stages) which will identify the best study method for each student. At the first stage of working with EEE, it is reasonable to run a criteria-oriented testing (a set of tests) to identify a student’s cultural-cognitive profile, as well as other basic parameters: motivation, basic knowledge level, information and communication skills, and professional interests. Of course we must take into account, the possible interactions between these parameters and their changes and variations in the educational process. Bearing this tendency in mind, it is reasonable to run retesting periodically in order to correct the selected pathway. We believe, the received information must contribute to developing an individual study pathway based on the best suitable study technique for each student. Speaking of didactic functions of EEE, we can point out the possibility of the student teaching the system. This may run the following way: the system’s intellectual component processes the data received when analyzing the tests and the student’s feedback after the courses were complete, and corrects the selected study pathway. Then it collects the statistic parameters to form a data base, thus forming a certain set of tendencies. Later, these collected data can be used for personalizing the study process of further students at

the earliest stages of mapping their individual pathways, i.e., for adapting the educational content and its forms to the culture-cognitive profile of each student. The EEE smart content is supposed to be formed according to the output rules, adjusted to a student's culture-cognitive profile (Blanchard and Frasson 2005; Taratuhina and Aldunin 2013; Taratuhina et al. 2014).

The Major Principles of Constructive Learning

Designing a smart environment is, first of all, based on adapting and filtering the educational environment to fit a student's cultural-cognitive and competence profile. Thus, we can see that on the first level it is essential to develop cultural intellect of the participants of educational communication. The second level involves designing the EEE, with its own cultural intellect and capable of presenting knowledge according to a competence profile. The third level means composing an adaptive—in some cases invariable—educational content (courses' semantic maps, minimal thesauri for disciplines).

We assume, that with this approach a student will mostly use information handling techniques best fitted for his/her own style in the learning process. It is worth noting that both internal (from own faculty or university) and external courses could be graded and presented to a student this way, with system providing student with recommendation on his/her competence profile improvement using all relevant and available sources.

In the end, completion of such personal education course would form up a certain competence profile of a specialist. Undoubtedly, the problem of mapping students' individual study pathways is currently one of the topical issues in modern education, and, in order to choose the most effective models of designing ISP, a thorough research into the global experience in this sphere is essential.

Analysis of the Relevance of the Development and Design of a PSP-Modeled Web Service

Students of higher educational institutions often face the problem of designing an individual study pathway. The following analysis will not be about general electronic educational courses with open access but rather focus on local level, i.e., when the student can choose education courses from a concrete higher education institution (faculty).

It is important to understand by what criteria a student designs his personal study pathway and what factors influence in this choice (Lazarov 2013).

We will investigate the research conducted by the company SAP together with VCIOM which was devoted to the development of young IT specialists in the IT industry of the countries of the Euroasian union (Russia, Belarus, Kazakhstan).

This research analyzes more than 5000 CVs of young specialists, more than 1400 students of Higher Education Institutions were questioned as well as 400 working recent graduates under 30 years. Moreover, opinions of more than 30 experts from the IT community were collected.

The research revealed that for 87 % of students the choice of the future profession was in many respects *coincidental* and that the choice was usually taken by the following criteria:

- A long-term employment guarantee (for 42 % of total of the interviewed students and 49 % of the interviewed young specialists).
- Social prestige of the profession: choice of a prestigious fashionable specialty (20 % of total of the interviewed students and 40 % of the interviewed young specialists)
- High salary of the chosen profession (32 % of total of the interviewed students and 37 % of the interviewed young specialists).

It is worth mentioning that the idea of “being predestined for the profession” comes on the fourth place (31 % of total of the interviewed students and 38 % of the interviewed young specialists). Consequently, the research indicates the strong influence of public opinion and the condition of the labor market on the choice of the students. The mere fact of receiving higher education also plays a role due to social prestige.

According to third generation-FGOS and the FGOS 3, higher education institutions present to students not only a pool of obligatory basic disciplines but also the right to select various training courses in order to create the individual curriculum (IC). This yields the opportunity for students to coordinate the exact outline of their education, thereby improving the personal study pathway (PSP). On top of the aforementioned opportunities, the student has the right to choose classes from the open classrooms.

These are optional training courses which serve as addition to the general educational program and give the chance to students to engage themselves in additional spheres that are interesting them. It is reasonable to assume that the students, who make their choice about PSP in a coincidental manner and therefore without concrete educational goals, are not following criteria that are necessary for an effective/meaningful PSP.

It is necessary to consider the probability that even students, who chose their future profession back in school years, will experience difficulties in designing their PSP.

Given the aforementioned potential issues, we want to introduce the creation of a web service for supporting students in their choice for a suitable PSP. This service is required to have objective and universal criteria which can be used for all educational programs in order to help designing and realizing effective PSPs for

each individual student (Issledovanie problmatiki razvitia kadrovogo potenciala v IT-otrasli stran Evropeiskogo Soyuza 2014).

Design of the Web Service

In our opinion, the main design criterion for the web service is that it must be in line with the aim of receiving necessary knowledge, skills, and competencies for future employment (Issledovanie problmatiki razvitia kadrovogo potenciala v IT-otrasli stran Evropeiskogo Soyuza 2014).

The service is supposed to focus on a sphere in the labor market or on a concrete profession within this sphere. Communication with the user is carried out as follows:

In the initial stage, the service offers the user the most relevant professional areas and professions depending on the education program.

Afterwards takes place the search of the most relevant education courses from available elective courses.

It is important to notice that, once decided upon, the choice of the user remains for the entire period of training and can be changed only in the next academic year and only if choosing a new IUP. In this process it is necessary to solve the following problems:

- to define the match between the education program and professional sphere (profession);
- to define the match between education courses and professional sphere (professions) chosen by the user.

Based on this information, it will be easy to define the “matching” between two objects, thereby defining and allocating the most relevant matches. In other words, between each registered professional sphere and each of the education courses there must be established a certain relation of relevance $R(p, c)$, where p is the name of professional sphere, c is the name of a course, and R is the relation which is an ascribed positive number. The latter indicates the degree of complementarity of a course for concrete professional sphere. Courses with the highest indicators are offered to students in order to create the most effective PSP. To prevent redundant education courses, their names are taken from a set of $\cup c_j$, where c_j is the name of a education course which holds the relation $R(p_i, c_j)$, at the fixed p_i , and has one of the greatest admissible values (see Fig. 1).

We offer two methods for the solution of the above tasks.

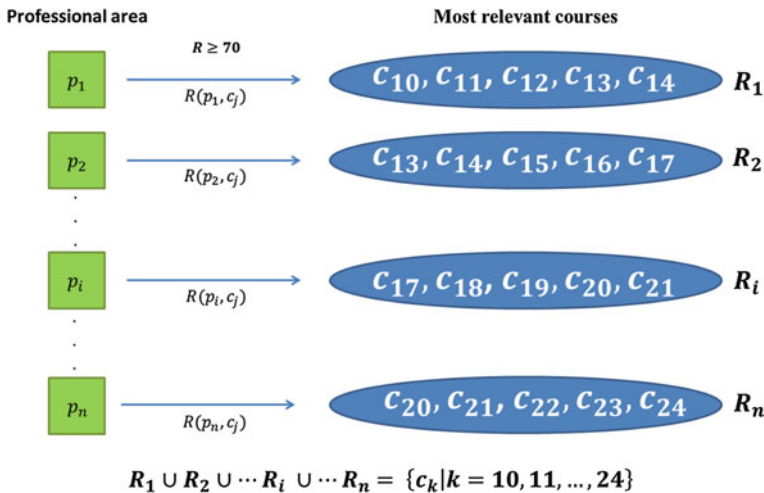


Fig. 1 Definition of most relevant courses for many professional areas

First Method

The following principle is the cornerstone of the first method: for each professional sphere and profession to define and allocate the list of the necessary competences. Competencies can be defined as basic qualities of people that determine the behavior or the way of thinking in various situations lasting a considerable period of time.

Naturally, if the profession is included in a professional sphere, the required competencies for the profession can be derived from the professional sphere. Additionally, the professional sphere defines competencies for a given profession and distinguishes between other professions from different spheres. Following the same logic, one can define and match competencies for all considered education courses. Based on the identified competencies, one can present all education courses available in the form of a semantic network. The semantic network is a network graphic for orientation. The knots of the network graphic show the concepts and objects, the connecting lines correspond to the “matching” and the relations between the objects.

Once defined, such semantic networks and competencies for each profession will make it easy to program a service for finding relevant objects (the higher the match of competences, the higher the relevance (see Fig. 2)). Additionally, the service will store information about competencies which the student acquired during his educational path.

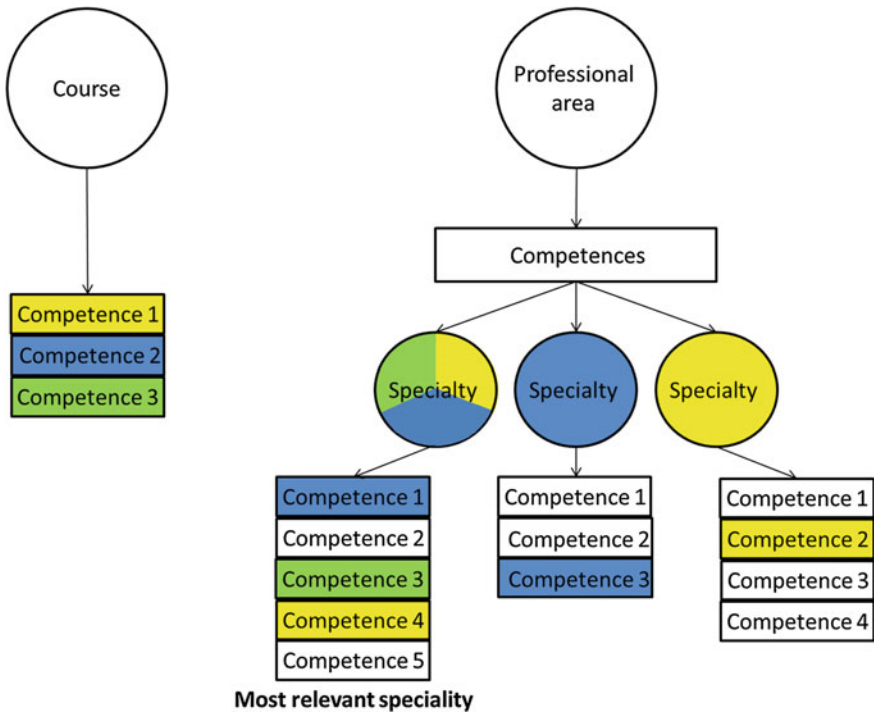


Fig. 2 Definition of relevance between courses and specialties, first method

The advantage of this method is the information which we receive as a result, as well as the speed of finding relevant courses. The semantic network includes not only optional education courses but all courses in the student’s program, thus a complete analysis of the student’s whole IUP is possible. Having analyzed the student’s progress, we will be able to point out the competencies the student has acquired during their studies. As we have defined the competencies for each profession, we can now easily say what professions fit the student according to their competencies or what competencies the student must acquire to fulfill the requirements for a given profession.

Thus, as a result, we obtain a model of a competence-based profiling which will be very helpful for the *student when looking for employment*, as well as for *companies when hiring graduates*. In other words, the service defines the competence-based model of the student and offers the most suitable education courses.

The drawback of this method is the complexity of mapping the semantic network described above, in particular, if there is a large number of education courses.

Second Method

The second method suggests that each profession is characterized by a precise professional standard in which all functions of each profession are accurately specified. The professional standard is a normative document applied to numerous areas, including: the selection and placement of personnel, the planning and standardizing of work activities, the development of employee management systems, the advisory for finding solutions of profession specific tasks, the establishment of a voluntary certification and assessment system of employees' competence level, the development of educational standards and programs according to the requirements of employers, the vocational training, retraining, and professional development of the employees.

Each labor function in its turn defines knowledge and ability functions, which are necessary for the correct implementation. In order to define the relevance of a course to a given profession, it is necessary not only to indicate knowledge and abilities for each course, but also to determine their relevance by the relevance parameter (see Fig. 3).

The advantage of this method is that it is easier to carry out than the first method, since there is no need to define the required knowledge and skills for each

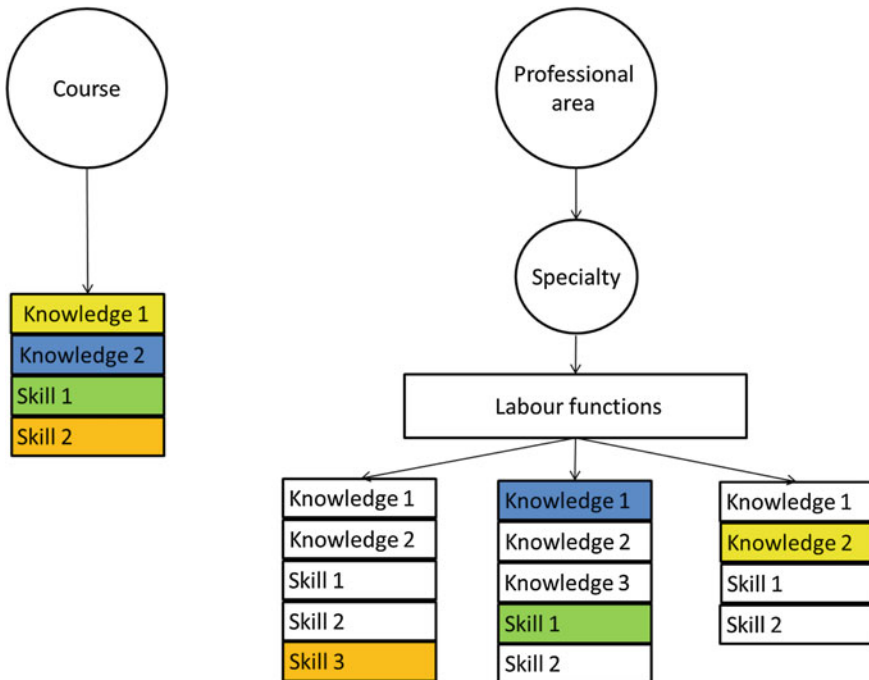


Fig. 3 Definition of relevancy between courses and specialties, second method

profession. However, the second method excludes possibility of obtaining additional information at the end of education about the student's acquired competencies. And, in the case of a large number of courses, this method will be slower in defining relevant courses than the first method.

Conclusion

Both methods are supposed to create a recommendatory service which will serve as a navigator for designing the PSP and modeling an actual competence-based profile for a student. The described web service will help to solve the problem of designing an individual PSP for each student of a higher educational institution. This will help create effective PSPs in the electronic educational environment, taking into account the "designing" of a student's competence profile.

Certainly, this service will not solve all problems which we face in the educational process. However, the proposed web service will definitely promote a more conscious approach to education on behalf of the students, modeling the student's future and the strategy for the student's future life in the context of continuous education (lifelong learning).

Undoubtedly, the problem of mapping students' individual study pathway is currently one of the topical issues in modern education, and, in order to choose the most effective models of designing ISP, a thorough research into the global experience in this sphere is essential.

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Information Communication Technology (ICT) in Open and Distance Learning (ODL): A Tool with Potentials in the Field of Education. The Case Study of Greek Educational Institutions

Lamprini Trivella

Abstract Information Communications Technology (ICT) is the main factor upon which Open and Distance Learning (ODL) bases its development as an alternative way of learning, mainly for adults. It enables the educational institutes to adapt to the constantly changing environment and aligns the learning procedure with the demands of the international market and the needs of the adults who want to keep up with current knowledge of society and world markets. Thus, it boosts “Life-Long Learning” (LLL), which is a part of the strategy of e-Europe “A knowledge society for all” (European Council, Lisbon 2000) (Zafiropoulou 2009; Karakirios et al. 2009). In these circumstances, the utilization of ICT in ODL is supported financially through programs by the European Union (EU) and other international organizations such as UNESCO, to support economy, to fight digital illiteracy, and to improve and/or update the already obtained knowledge that upgrades human resources nationally and internationally (Papadimitriou 2014; Sipsas et al. 2013; Trivella 2015). In this framework, my study can be a point of reference as it intends to provide useful information for the future successful use of ICT in ODL that is gaining space in the field of learning activities on all levels of the educational systems in both the private and public sectors. Also, it highlights the need to utilize properly, and benefit from, the unlimited potentials of ICT in learning, specifically in Greek educational institutions.

Keywords Information communications technology · Open and distance learning · Education · Educational institutes · Potential of ICT

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ICT

Information communications technology (ICT) has been a factor that has changed the way the learning procedure is conducted. It consists of two elements: the software, and the context of the learning material. It is used by most of the educational institutes to attract students, to obtain value added cost, and to obtain a comparative and competitive advantage over other institutes, since they provide a great amount of learning materials on the same subject and there is a demand for quality and guarantees for the successful accomplishment of learning procedures. This situation forces the educational institutes to utilize ICT and expand their services to ODL.

ICT and ODL

ICT is strongly related to the policies of life-long learning (LLL), the skills' competence for the knowledge society and the ODL. Therefore, ICT is of utmost importance for ODL and its effectiveness. Its importance is highlighted by the fact that the use of ICT in ODL is encouraged by the EU, the World Bank, and other international organizations (Karakirios et al., 2009; Trivella 2015).

In the field of ODL, many scientists consider ICT to be a powerful means or tool that facilitates the development, delivery, storage, and presentation of information (Lionarakis 2009; Pantano-Rokou 2009). Many governments, educational institutes and even adults rely on the use of ICT in the procedure of ODL because it offers financial development, saves time and money compared to conventional face-to-face learning, and offers flexibility on the rhythm, way, time, and place of the learning procedure (Trivella 2015).

ICT as a Tool with Potentials for ODL

ICT is used in ODL with many ways to attract and convince adults to use it to achieve their aims and to make the learning process easier. In addition, it minimizes dropouts and manages the operation of the organizations, thereby eliminating bureaucracy and facilitating evaluation procedures.

ICT as an Educational Tool

ICT, which is constantly changing and developing, offers great potential in the sphere of education. As far as it concerns the learner, it provides information and

data for his or her research, makes the learning process easier, and the access and navigation can be simple and user-friendly. It exists in many forms, with the most preferable being video, CD-Rom, Skype, teleconferencing and audiovisual items. As far as it concerns the authors/creators of the learning material for ODL, ICT is used as a tool to design learning material specifically for ODL (McGreal and Elliott 2008). As a designing tool, it has many forms, such as eXe-learning from New Zealand's Auckland University (Sofos and Kostas 2009), the Articulate Storyline 2 from the USA (Hartofylaka 2015), and the Blender (Siakas 2015).

ICT as a Tool of Communication

ICT facilitates one-on-one or one-on-many interactive communication. It reinforces communication between students, students and their counselors, students and the organization, and the counselors and the organization. It boosts cooperation in collective studies through virtual learning environments (VLEs), such as Moodle (Papadimitriou 2014). In this way, it eliminates the sense of isolation and tends to attract the attention of the student/user to have a social presence through ICT.

ICT as a Management Tool

ICT facilitates the operation of educational organizations insofar as it mainly concerns the authoring and technical production of the learning material of each program, storage of the digitalized information or/and learning material, delivery and management of the papers, grades, evaluation, and security of all data and learning material.

The Impediments of Utilizing ICT in ODL

The use of ICT in ODL has so far pinpointed some basic obstacles that do not allow the utilization at the utmost of the ICT. These obstacles are:

- Inefficient know-how for using ICT for ODL by the staff of the organization, by the students, and by the authors
- Lack of efficient financing for equipment and for properly trained staff
- Time-consuming creation of educational material that is specifically modified for use through ICT
- The delay of proper and utmost utilization of ICT in ODL

The Impact of Utilizing ICT in ODL

Under these circumstances, there looms a concern and an uncertainty for the effectiveness of ICT in ODL for the following reasons (Pantano-Rokou 2002):

- Massive homogenous production of learning material and consequently of learning procedures
- Transformation of learning into a marketing product according to the offer and demand of the job market
- Transfer of the cost from the educational organizations to the learner

Initiating the Utilization of ICT in ODL in Greek Educational Institutes

In Greece there is widespread improper and/or simplified utilization of ICT for ODL in most of the educational institutes in the public and private sectors, mainly in the secondary and post-secondary educational systems (Nasiopoulos 2014). This means that the majority of the above-mentioned institutes use ICT as a tool for delivering digitalized printed material of the conventional educational system and/or a means to bridge the distance between the teachers and the students through Skype and interactive blackboards. Apart from that, the organizations that have expanded their services via ODL have just begun to use ICT more effectively as they face competition from abroad and there are many dropouts due to unsuitable learning material through ICT (Nasiopoulos 2015). This situation brings up many questions, but I will focus on the following three, which I consider to be among the fundamental ones:

- Is the usefulness of the potentials of ICT essential in the ODL of the educational organizations?
- What elements are needed for the usefulness of ICT's potentials in ODL of the educational organizations?
- Can the usefulness of ICT's potentials in ODL be achieved?

The Usefulness of ICT's Potential Is Essential to ODL in Greek Educational Organizations

Taking into consideration the constant improvement in ICTs' potentials, the economic crisis, the competitiveness, and the demanding learners, the Greek educational organizations are forced from their environment to change the way they use ICT for ODL to be more effective and qualitative according to the norms of the EU

and of the other international organizations. The latest improved versions of software offer more possibilities for enhancing the provision of educational services for ODL, in a quicker and less costly way (Nasiopoulos 2015) cheaper.

The Necessary Elements for the Usefulness of ICT's Potentials in ODL

Above all, the usefulness of ICT's potentials in ODL needs four elements to function: the people involved (authors/creators, learners); the knowledge and the skills to utilize ICT potentials (training); the simplified, user-friendly software; and the specifically modified context (Trivella 2015).

The Usefulness of ICT's Potential in ODL in Greek Educational Organizations Can Be Achieved

The Greek educational organizations must change and evolve more substantially to use the ICT more effectively in order to be a twenty-first-century competitor. This will enable them to be involved with the knowledge society, the market, and to be aligned with European standards of education. Therefore, the usefulness of ICT's potential in ODL can mainly be achieved in the following ways:

By Changing the Organizations' Policies for the Usefulness of ICT's Potential

- Accept the fact that they must turn to a more lucrative and qualitative use of ICT, which consumes time and money but is paid back in the long run.
- Invest in human resources (training staff).

By Utilizing ICT's Potentials in a Holistic Way

- Choose the best ICT form or a variety of ICT forms for a specific course.
- Use ICT to manage the creation, storage, and presentation of learning material in ODL.

By Utilizing ICT to Create New Material Suitable for ODL

- Transform existing material into innovative, new material ready to be used by ODL learners through ICT.
- Design the learning material by keeping in mind the characteristics of ICT and ODL.

The Case of Greek Educational Organizations

Greek educational organizations have begun to change their attitudes towards a more professional and qualitative use of ICT as far as it concerns ODL for its competitive advantage (Nasiopoulos 2015), but only at a very slow rate. The study is limited to those organizations that are involved with the ODL, offering courses for exam preparation at all levels of education and training. Of all the 250 organizations, only 110 have responded. The survey was conducted in June, July, and August of 2014 in Attiki, Greece.

All use ICT as storage for digital textbooks that are used in the conventional education system (in classrooms), as a tool for delivering reading material, and as a means of communication between the teacher or the supervisor and the learner, and between the organization and the learner. The results of the survey are shown in the figures.

Figure 1 shows that ICT is used in ODL mostly for post-secondary school and life-long learning courses, while the instructional and postgraduate courses are not widely demanded in ODL. This means that there are young learners scattered far from the center of Athens who prefer taking ODL courses through ICT rather than from large private organizations, and they have no intention to attend face-to-face teaching at smaller local organizations near their own homes. The demand for postgraduate courses in ODL is not as great, and ICT’s usefulness is not very focused on these courses.

Figure 2 shows the percentage of utility of ICT’s potential as far as ICT is an educative tool, as a communication tool, and as a managerial tool within the universities, the educative centers, and the private organizations. The potential is very high as regards management, while its utility as a communications tool is at the lowest level. There have been some serious attempts to benefit from ICT’s potential as an educational tool.

Fig. 1 Percentage of ICT use at various educational levels in Athens

Athens: use of ICT in providing services in ODL

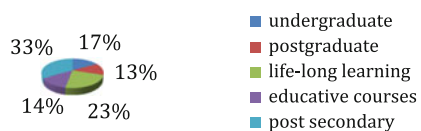
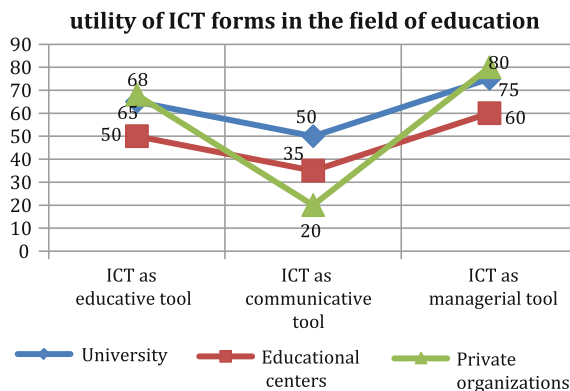


Fig. 2 Percentage of the utility of the three basic forms of ICTs in educational organizations



Conclusions

In Greece there are few educational organizations that use ICT to provide learning material and other educational services for students. The best example is the Hellenic Open University, which has the framework for using ICT's potentials in its ODL. Other major private educational organizations have begun to benefit from ICT's potentials, but so far they are far from achieving their goals. What they need is trained staff and changed policy about time, money, and the qualitative use of ICT in order to benefit from its potentials.

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Instrument For Coordination of Social Groups For Increase in Effectiveness in Smart Education

Y. Taratuhina, Z. Avdeeva, S. Filatov and F. Paputinsky

Abstract When an enrollee becomes a university student, he enters a new social group that is better educated and more highly cognitive than the one he was in at school. But as soon as he becomes a member of the higher-level cognitive group he is hardly able to adapt to new environment. This chapter deals with the questions of practical realization of coordination of social groups for increasing the level of their education. The prototype of a mobile application was developed under the concept of “smart education.”

Keywords High-level cognitive environment · Low-level cognitive environment · Cross-platform application · Educational environment

Introduction

Didactic constructivity is an educational method that allows, via up-to-date means, drawing an individual “educational trajectory” or an “individual road map” for a student. It is obvious that the most important part of this definition is “educational method.” In a broader sense, the educational method is the ability of an educator or of an android (electronic) system to react and predict (forestall) the reactions of both students and their closer (micro-) and farther (macro-) environments during the educational communication. Individualization in the educational process consists of building personal learning programs. Every educational institution should propose implementing personal educational programs that would include, in addition to learning activities, each student’s personal parameters. Individualization means that a student actively chooses his or her own learning content (Berners and Lassila 2001; Blanchard and Frasson 2005).

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High-level and Low-level Cognitive Small Groups

Considering a large group of people in a defined society, it can be said that the society is divided into highly cognitive groups and lowly cognitive groups. When entering an environment of highly-cognitive groups, lowly-cognitive groups aim to socialize and find their place in the new environment with the help of acquiring new skills, knowledge, and opportunities (Holodnaya 2004; Nisbett and Richard 2003; Robert 2007).

Such processes occur in the university environment. When an enrollee becomes a student, he often experiences difficulties with some of the subjects in the educational program. This is due to the fact that he moves from a low-level cognitive environment into a high-level cognitive one. These two environments differ in the amount of information and knowledge they provide for the student. And a new member of a highly cognitive environment needs help and the opportunity to adapt to new conditions.

However, the student can get this help from another source: a tutor. Tutors are those who contribute to a more rapid adaptation of new members to a society, people who are able to pass on their knowledge to the students using understandable language.

“Smart” Tutor

The main functionality of the support system for mapping of a personal study pathway in Electronic Educational Environment (EEE) from the perspective of a role model should include adaptation functions, such as those mentioned in Taratuhina (2014) and Taratuhina et al. (2014), the functions for supporting the student learning process in an active electronic educational environment, such as the mapping of a personal study pathway, includes supporting the various levels of selection (planning of the educational process according to the choice, and execution and control of the strategy), and the functions of the interactive support of the tutor’s work are tools for the detection and construction of systematic linkages between courses and competencies and tools for monitoring space of the course that are manifested as a relationship between actual knowledge and the results of didactic processing of such knowledge for a certain specialty, which are synchronized with the applied aspect (practical utility).

The spectrum of functions was realized in the prototype: the output of the timetable of additional classes, an output of information about the tutor, editing of the database of tutors, editing of the time-table database, news tape with the changes in timetable, a form for asking for additional classes, and the topics that were not understood.

Besides communicative functions, an application has an analytic component. Based on the principle that the greatest number of students attend classes to analyze the topics that are the least understandable, conclusions can be reached about the work efficiency of the tutor and about his competence in various fields.

This application is an analytic instrument not only for the research of the educational student environment, but also for research on the teachers' and tutors' environment.

Environment Research

One of the authors of this article, Sergey Filatov, has been a tutor for additional classes in linear algebra and analytical geometry for the freshmen at the university for the last 2 years. In his research, the focus group included more than 150 students. Two strategies were chosen for training: one of "democratic" training, and the other of "totalitarian" training; this was due to the fact that low-level cognitive groups are similar to traditional society by their nature of perception. A form of government in such societies is almost like a dictatorship; people cannot be distanced from the influence of power, and the society is strictly differentiated by social and class sign. In contrast, when speaking about a progressive system, there is a tendency toward democracy and the saving of personal freedom, positioning every group member as an equal and having social influence on power (Tables 1 and 2).

Table 1 Strategies of training

	Totalitarian strategy	Democratic strategy
Interaction	One-way	Two-way
Character of discussions	Clarifying questions	Debates
Timetable	Lessons are assigned at the time appointed by the teacher	The time of lessons are decided on according to the request of students
Lesson plans	Made and published in advance	Are formed during the lesson
Rules	Are published before the beginning of the training session and must be strictly followed	Are formed during classes, taking into account individual features and context
Type of teacher	The image of a stern, pedantic, and arrogant man	The image of an open, good-natured man devoted to his high ideals
Type of impact on the students	Direct instructions for actions	A recommendation based on experience with a sample
Image of teacher	Imposed by tutor and supported during classes	Made by students and supported by tutor in his spare time
Spare time of tutor	All questions are analyzed at the set time	It is possible to address questions to tutor at any time

Table 2 Outcome of totalitarian and democratic strategies

Parameters of strategy	Totalitarian	Democratic
Number of people who came to the first lesson	32	5
Behavior	Responsible; with a few remarks, the silence was quickly restored	The remarks on discipline were made from the students
Speed of learning	Fast	Slow
Problems with tasks with changed conditions	+	–
Necessity of reduction to common algorithms	+	–
Basic part and methodology	Learned quickly	Learned more slowly, required thorough analysis and understanding
Attitude to the subject	It is an obligatory subject	An extracurricular event
Duration of contacts	Short	Long
After class activities and leisure time spent together	–	+

Mixed Strategies of Training

The findings of the research made it possible to analyze the educational environment, showing that in the early stages the classes need to be arranged according to the totalitarian strategy, and afterwards becoming more and more democratic. This is due to the fact that Group T (totalitarian) was learning more quickly in the first stages by template methods of solving, while a lot of freedom was given to Group D (democratic) to express and explore themselves via interaction with the tutor.

It should be noted that in any case, the presence of a tutor and applying of one of the strategies is conducive to the adaptation of the group, while an old structure that excludes the tutor from the educational environment turns out to be less effective. Such a viewpoint has quantitative indexes with average marks for the last 5 years for the subject under consideration (Table 3).

The analysis also shows that despite a large number of unsatisfactory marks, Group D has indexes of an absolute maximum compared to Group T, which has a lower rate of incompletes. A strategy of gradual weakening of control is also acceptable, despite the fact that weekly analysis of the students figured out that Group T had become more inclined to ask questions and try to find the truth rather than Group D. At a certain stage, no discussions about the course that was taught were required for the latter. In Group T, serious discontent began to arise due to the fact that a level of cognitive skills of respondents had increased, and they began to better understand the material; questions that had to be clarified appeared, but there

Table 3 The progress of students of NRU HSE, business informatics, linear algebra

	2010–2011 2nd half-year	2011–2012	2012–2013	2013–2014 (Group D)	2014–2015 (Group T)
Annual average mark (1–10)	4.2	6.09	4.92	5.3	4.65
Number of students at the beginning of the year	152	114	144	221	188
Number of unsatisfactory final marks	77	25	59	40	13
Students who regularly take additional classes (60 % of the overall number of classes)	0	10	24	32	45
The number of “10”s for the subject	0	0	0	3	0
The number of unsatisfactory final marks from all the marks (%)	50	21	40	18	6

were answers. In contrast, Group D had a higher level of discontent at the beginning, when the material did not have clear borders and required permanent clarification.

Conclusions

To sum it up, there is a way to leave low-level cognitive groups and adapt to high-level cognitive environment: tutors who are often just more successful members of lowly-cognitive groups. These tutors can help their group raise their level of cognition, which has been proved by a few examples in informal institutions of additional education in a university environment.

This paper shows that the above-mentioned theory was realized in practice—a mobile cross-platform application for additional courses. The application allows automating relationships between tutors and students. Designing a smart environment is, first of all, based on adapting and filtering the educational environment to fit a student’s cultural-cognitive and competence profile. Thus we can see that on the first level it is essential to develop the cultural intellect of the participants in educational communication. The second level involves designing the EEE, with its own cultural intellect and capability of presenting knowledge according to a competence profile. The third level means composing an adaptive—and in some cases inflexible—educational content (courses’ semantic maps, minimal thesauri for disciplines). The studies showed that a mixed strategy is optimal for increasing the

common educational level. It enables improving the general level of the students' education (Group T), forming flexible thinking to allow them to achieve exceptional results.

Based on the behavior of the groups for communication between students and tutors, a special application was developed that not only performs the function of sending notices about the classes, but is also a powerful analytic instrument for defining the general background of the efficiency of tutors and level of the teaching of professors at the university.

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Legal Aspects of the Use of Educational and Scientific Information Posted on the Internet for Organizing e-Learning According to the Russian Example

Z. Anna and E. Vladimir

Abstract In our research, questions about the legitimacy of using information that was posted publicly explored the features of the use of open licenses and other agreements for the to provide open content for e-learning in Russia. It was shown that the universities (in Germany, Russia, the United Kingdom, the United States, and France) considered the right to use the results of intellectual activity that was created by their employees in different ways. Emphasis is placed on the practice in Russia.

Keywords Law · e-Learning · Russia · Creative common · Results of intellectual activity

Introduction

The using of publicly available information, including information that is available on the Web page of the teacher for providing new and useful knowledge, raises questions about the legal protection of such information as well as the legality of its use by students or people who receive access to it. The teachers use their own intellectual work and create the results of intellectual activity (RIA) anew.

The relationships arising in global network have particular qualities that must be considered. For example, it is difficult to determine the physical entity of relationships and the jurisdiction that is connected with the powers of a judicial or administrative authority and the legal assessment of the conflict (Zharova 2014).

The law “On education in the Russian Federation” understands e-learning to be the organization of educational activities with its use contained in the database information and technology that provides the processing of information, telecom-

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munications networks providing the transfer of information, and the interaction between the students and the teaching staff (article 16 of the federal law “On education in the Russian Federation”).

However, Russia has restrictions on the implementation of e-learning. Therefore, the Ministry of Education and Science of the Russian Federation has approved the list of professions and specialties of secondary vocational education that cannot be recognized only through e-learning (The Order of the Ministry of Education 2014).

The Practice of the Universities Provides the Rights of Intellectual Property for Its Own Employees

The Constitution of the Russian Federation determines the right to freedom in all spheres of creative activity as the most important (Art. 44).

However, the universities consider the right to use RIA that is created by their employees in different ways.

Therefore, in Germany, for example, the view was that “since university teaching staff makes free—in its legal terms—inventions, these belong to the scientists and not to the university, and therefore the university has no responsibility in intellectual e-learning property issues. In the United Kingdom, the United States, and France, the view was that universities should retain ownership of intellectual property in inventions developed by members of their staff” (Gabriela Kennedy 2002).

In Russia, for example, HSE defines the right of the teacher or lecturer at a university to use his or her exclusive rights to RIA, such as [the project of the distribution of rights]: To conduct classes at other universities with RIA that were developed in the HSE; the submitting of RIA at public events; placing online learning manager systems; initiating of commercial projects based on the RIA; entering into contracts for the placement of RIA in periodicals and the Internet; entering into contracts with publishers for the publishing of RIA; concluding agreements with other universities and companies on the use of RIA, including commercial; the right to dispose of the RIA; the right of authorship; the right to a name; and the right to inviolability of the work.

However, the HSE defines the responsibilities of the author, such as indicating that RIA was developed in the HSE and requiring such an indication from people using this RIA, and informing third parties about the rights of HSE to RIA.

Russian law determines the relationships between the employer and employees differently. “The exclusive right to RIA belongs to the employer if the contract provides otherwise” (Art. 1295 of the Civil Code). The assertion of ownership of copyright by universities in academic output may also go against a well-established tradition whereby academics sign over their ownership rights to publishers who, in return, print their writings in scholarly journals.

Gabriela Kennedy of Hogan Lovells writes that “even one specifically employed to give lectures, such as a doctor at a teaching hospital, a university lecturer or a

teacher at a school, belonged to the employee. The basis for this was that the employee was employed to deliver the lectures orally and, if for his own convenience he chose to write them out, that was no reason for giving the copyright to the employer” (Gabriela Kennedy 2002). We totally agree with her position. The teacher creates RIA in the form that is convenient for him or her to operate within. The position of the Russian law—that exclusive rights should belong to the employer—is contrary to the constitutional norm. So, the creating of a lecture in some form is not an obligation of the lecturer and this requirement does not appear in a job agreement.

Features of the Use of RID Without a Contract

The general provision of Russian law establishes the right of the rights holder to authorize or prohibit other persons from using the results of intellectual activity or means of individualization. The absence of prohibition is not considered to be consent or permission (item 1 of Art. 1229 the Civil Code). In our case, the teacher or student who has produced the results of intellectual activity is the rights holder.

The use of RIA is determined by the licensing agreement between the author of the RIA and the third party, which is defined as the amount of permitted actions to intellectual property by third parties. However, the civil code provides exceptions to this rule that include the use of RIA that is in the public domain, such as cases of uncompensated free use of RIA (Articles 1273–1276 of the Civil Code). The implementation of these exceptions—free use of RIA in the Internet—is complicated, due to the conditions laid down by the law.

What can we consider as legally published RIA, especially in the case of a global space? The rights to disclosure and publishing of a work initially belong to the author of the RIA; the author gives consent to the actions that make the RIA accessible to the public by publication, public display, public performance, broadcasting, or by cable or any other means. By publishing an RIA, it is understood that the issuance of copies of this RIA, and making copies of it in any material form, are sufficient to meet the reasonable needs of the public.

However, returning to the peculiarities of the publication of works on the Internet, we cannot be confident that RIA on the Internet have met with the agreement of the author. If this RIA is on the official Web site of the educational institution, we must remember that the Web site can be hacked and RIA is available to the public and open to third-party use. For this reason, in cases where uncompensated free use of RIA is posted in the Internet, we need to eliminate the possible ambiguity of relationships and we must obtain permission from the copyright holder. It is possible if the rights holder puts information about these opportunities on his Web site and specifies the terms under which the RIA can be posted on the site with his permission.

We also need to remember that cases of free and gratuitous use of RIA are strictly limited and related only to the activities of citizens.

Using the Results of Intellectual Activity on the Internet in the Case of Concluding an Agreement

The main problem in the conclusion of agreements on the Internet in Russia is the consideration of relationships organized in an electronic environment through the obligatory existence of a paper form of the agreement (Goloverov and Kemradzh 2002). The “On Electronic Signatures” law requires the use of electronic signatures for the recognition of the electronic document equivalent of a paper document. In Russia, the law first acknowledges the paper document and after it the electronic document. Thus, in the Russian Federation, if the licensing agreement is concluded by signing a paper document, we can be assured that the relationships arising over the use of RID will be legitimate. The exception to the requirements of the paper form of the license agreement is an agreement concluded between author and publisher on granting the right to use an RIA in a periodical. This agreement can be concluded orally (Art. 1286).

Russian law also makes exceptions for software or databases (par 3, Art. 1286 of the Civil Code). However, this article does not apply to a contract on alienation of the exclusive right; it stipulates that “the terms of agreement for the right to use these objects can be applied on the acquired copy of the program or database or on the packaging of this instance.” But this article does not regulate relationships on transfer of copyright and related rights on the literary work. Thus, based on the norms of the civil code about the licensing agreements in paper form, it follows that the transfer of rights in the digital environment can be carried out only under certain conditions.

Within the Russian Federation, if the license agreement is concluded by signing a paper document, we can definitely say that the relationships are valid; however, in the case of Internet relationships, we cannot be sure. Let us assume that in his Web site the author expresses his wish to provide the right to copy the results of intellectual activities to all parties who wish to conclude an agreement. In this case, the conditions of validity of the contract must contain the requirement that parties should be using technologies that reliably establish that the document comes from the particular person. Then the parties must agree on the choice of such a technology.

The Federal Law of the Russian Federation states that “by electronic signature” means a requirement on the use of electronic signatures for the legislative recognition of the electronic document equivalent of a paper document. Thus, to determine the legality of the contract that is based on the norm about the paper form of agreement on the transfer or alienation of the intellectual property rights, we must answer the question of whether the Internet form is paper form. If an e-agreement concluded between the parties did not provide for the possibility of using an e-signature, the transfer of rights in the digital environment cannot be fulfilled. Hence, the norms of the legislation of the Russian Federation allow for organizing the electronic exchange of documents, but do not disclose the specifics of such a relationship; these specifics must be defined by the parties in a separate agreement.

In 2014, a new article (1286.1) of the Civil Code was adopted; This article allows deciding on the problem about paper forms of licensing agreements, but only for literary works, science, and art. It is called “the open license to use the works of science, literature or art.” Features of the implementation of this article will be considered further.

Types of Licensing Agreements for the Right to Use Copyrighted Objects

Therefore, if parties use electronic signatures, they must determine the type of e-signature and terms for use of this signature. The most countries actively used the model of licensing agreements as creative commons. However, using GNU in Russia is impossible because the unofficial translation of this license is in Russian [Unofficial Translations]. The text of this license is copyright-protected. In the GNU Web site, the operating system specified, “You label your translation as unofficial to inform people that they do not count legally as substitutes for the authentic version. You agree to install changes at our request, if we learn from other friends of GNU that changes are necessary to make the translation clearer. The translation is not hosted on a commercial site and does not refer to any company” (unofficial translation).

In other words, its use in English without translation into Russian in the Russian Federation is impossible. The conclusion of an agreement in English in other countries can diminish the legal protection of Russian citizens; accordingly, this problem can be solved if the parties use the license in two languages—English and Russian. However, such a model contract may be considered to be just an analogue of creative commons.

In 2015, a new article (1286.1) of the civil code was adopted. This article is called “The open license for using the works of science, literature and art.” Its introduction allows accomplishing the relationships similar to those of the creative common. The article specifies that the licensing agreement is concluded between the author, other copyright holder, and third parties for use of the work in science, literature, or art. This article gives a third party the right to create a new result of intellectual activity on the basis of the existing RID.

The use of this form of the agreement suggests that the licensor has made an offer to anyone who wishes to use the new intellectual property that is based on the RID of the licensor, and that will be created by the licensee. The terms of use for the third parties of a new RID must correspond to the terms that the licensor has identified in an initial open source license. The licensor grants the licensee the simple and non-exclusive license.

This article determines that all the terms of this agreement will be open to the public and posted so that the licensee will be able to acquaint them with the terms before the start of the related work. The open license may contain an indication of the action commission that will be considered acceptance of its terms. If all the

above requirements of the civil code were specified in the contract and were made by the parties, the civil code considers such an agreement in writing.

In addition, this license expands the territory of the agreement. All the other licenses define the territory of the Russian Federation if agreement does not indicate the territory. Article 1286.1 of the civil code stipulates that if in an open license, the territory in which the permitted use of the relevant RIA is indicated, such use is permitted throughout the entire world. However, if the licensee violates the terms of this license, the Civil Code of the Russian Federation to ensure the rights of the licensor and rights holder is allowed to fully or partially withdraw from the contract.

Conclusions

Thus, in Russia there are still a significant number of legal difficulties in the organization of e-learning. Despite this, Russia is actively trying to find ways to adequately implement relationships that arise in this sort of learning.

The introduction of a new article (1286.1) has solved the problem of unimpeded use of RIA but only for works and art in order to process and further use RIA by third parties. For example, this will allow the teacher to give the right to process his articles or books, and allow the students to create their abstracts, for a bachelor's or master's thesis. Students as authors of the processed product will be able to provide the right to use the RID as third parties.

In the remaining cases, for the organization of educational environment, we have to take into account all the analyzed legal features of the legislation that determine the procedure for the conclusion of agreements on the Internet.

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Protection of Confidential Information in Educational Information Environments

Zharova Anna and Elin Vladimir

Abstract The article discusses the possibility of providing students with confidential information for e-learning. We have examined the legal regulation of the regime of trade secrets. There were shown the technical methods of protection and accountability for violations. The paper concluded that the need to adopt a number of legal norms, which specify the procedure for the use of confidential information in e-learning environment.

Keywords Electronic document · E-learning · Confidential information · The principle of free flow of information · Commercial secrets · Know how

Introduction

Considerable amount of information has being sent to students in the form of e-document in order the implementation of educational activities with the use of electronic educational environments. It is not only educational materials but also the author's educational programs, textbooks and teaching materials. Personal data of employees of institutions and other confidential information (trade secrets) are converted to electronic form and must be transferred. The uncontrolled storage and use of this information could cause serious material and moral damages, copyright infringement and other illegal consequences. The law defines the responsibility for the illegal duplication, distortion or illegal use of confidential information.

It should be borne in mind that the Russian Federation is constitutionally enshrined freedom of information principle. The essence of the principle lies in the

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fact that access to information may be limited only on the basis of the federal law. In general, the Federation of Russia legally defines 70 categories of information with restricted access (secrets).

Some Russian scientists wrote on the need to protect confidential information in the exercise of electronic educational activities (Baranov 2009).

The security policy is developed taking into account national laws relating to information security management, thus,

- protects personal information contained in the data that are part of their information institutions;
- It defines reasonable and acceptable practice in the use and preservation of information resources of the school;
- establishes liability for non-compliance or incorrect compliance in the field of information security.

Implementation of security policy agencies should be divided into two stages

- Protection of trade secrets;
- using the know-how in practice.

These parameters are the basis for the information security program and to provide guidance offices a real opportunity to implement policies, standards, methods and procedures necessary to implement a successful information security programs.

This article identified the legal basis and practical application of specific procedures for the protection of trade secrets in e-learning environments.

The legal status of confidential information in e-learning environments

This area of the relations regulated by the following official documents. “Strategy for Information Society Development in the Russian Federation” (Strategy for Information Society Development), especially brings to the fore the problem of improving the quality of training and the creation of a continuous training system for civil servants in the field of information and telecommunication technologies. It defines main directions of development of science, technology, equipment and training of qualified personnel in the field of information and telecommunication technologies. Law “On education in the Russian Federation” defines e-Learning term as follows: “The creation of educational activities on the use of the information contained in the databases, information technology, and information and telecommunications networks to provide educational programs, as well as for the interaction of students and faculty members” (Art. 16 of the Federal law “On education in the Russian Federation”).

The procedure for use in educational institutions e-learning and distance learning technologies for educational programs is determined by the regulatory - legal acts of the Ministry of Education and Science of the Russian Federation (Ministry of Education 2014A, B).

However, Russia has restrictions on the implementation of e-learning. For example, the Ministry of Education and Science approved the list of professions and specialties of secondary vocational education, which can not be realized only through e-learning (Ministry of Education 2014A, B).

One of the mandatory requirements of the legislation in the implementation of e-learning is the responsibility of educational institutions to ensure the protection of information constituting a secret protected by law. In accordance with the Russian Federation on access to information, this category is divided, such as public information and limited access to information, which is limited by federal law.

Grounds for restriction of access to information are: the protection of the constitutional order, morality, health, rights and lawful interests of others, national defense and security of the state, but only if there is a requirement of the law on this issue.

There are different legal classification of information with limited access, but legally we can provide: a state secret; confidential Information; other Information limited.

Confidential information should be divided into: personal data (includes sensitive information about the facts, events and circumstances of citizen privacy, enabling the identification of his personality); information constituting secrecy of the investigation and legal proceedings, official secret, professional secret (eg, medical, notary, attorney secret, secrecy of correspondence, telephone conversations, postal, telegraph and other communications, and so on); Trade secret; a secret invention, utility model or industrial design (Article 9 of the Russian Federal law "On information, information technologies and protection of information").

But existing approaches allow us to determine the specific categories of information with limited access, which are subject to legal protection. We can talk about the equivalence of the terms "mystery" and "Information with restricted access" (Kuzmin 2000).

Protection of trade secrets in e-learning environments

Continuous development of technology is accompanied by a variety of processes that can be improved, optimized, supplemented in order to achieve effective and efficient results (Sitishko 2009). It is acceptable for the classification of information, related to processes such as a trade secret. It is believed that the trade secret information can optimize processes, save money and become a valuable commodity.

Trade secrets can include any data (industrial, technical, economic, institutional), including the results of intellectual activities in science and technology, as well as information on how to carry out professional activities (Federal Law of the

Federation of Russia “On Commercial Secrets”). The ability to classify data as a trade secret depends on the actual or potential commercial value of the information by virtue of its being unknown to third parties, to which the third parties do not have free access to the legal basis and in respect of which the holder of such information is entered commercial secret regime.

This mode protects information resources on the basis of the risk of accidental or unauthorized disclosure, modification or destruction, and to ensure the confidentiality, integrity and availability of data (Zharova et al. 2014).

The importance of trade secrets can be characterized by its protection. The protection of trade secrets is reflected in the rules of the Labor Code of the Russian Federation. The ban on the disclosure of trade secrets is a condition of employment.

Violation of the law on trade secrets also entails criminal liability (Article 183 of the Criminal Code.). Fouls: collection of information constituting commercial secret, by abduction of documents, bribery or threats, unlawful disclosure or use of a trade secret information without the owner's consent.

Trade secret includes five mandatory steps:

1. Determination of the list of information constituting a commercial secret;
2. Limit employee access to information;
3. Personnel accounting;
4. Mode of use of trade secrets by employees and contractors;
5. Stamping on the documents stamped “Commercial secret.”

The owners of information, which educational institutions can also use the tools and methods of protection, such as the organizational, technical and specific.

Organizational methods include the following: work with the personnel, control of the protection regime of documents, the determination of the form and content of documents, classification of documents and stamping “commercial secret” on documents (Baranova and Babash 2015).

Technical measures include: installation of signaling and control over its work, the use of special locks and other devices, the use of devices for the destruction of documents, safes, as well as special containers for storage of documents.

Specific measures include: the use of the copy-protection documents, hidden recording devices, unauthorized access to documents, industrial espionage, and conduct an official investigation into the case of loss of documents.

These measures are used in the Kazan State University (<http://www.pandia.ru/text/77/31/316.php>) and Belgorod State Technological University (<http://www.docme.ru/doc/915036/polozhenie-o-sluzhebnoj-i-kommercheskoj-tajne-v-vuze>).

The next step is the development of information security systems, based on the use of the experience of the leading universities in the structure of which there are information security departments. For example, management of information security in University of Texas at Austin has developed and implemented the structure of the “information resources” and the “Privacy Policy”, “acceptable use Policy” (<https://security.utexas.edu/>).

The use of trade secrets in e-learning environments

In Russia, the rules for the use of trade secrets are defined by Part 4 of the Civil Code of the Russian Federation, which regulates relations in the sphere of intellectual property. Since the definition of “know-how” coincides with the essence of commercial secrets, then with respect to such information, institutions should introduce a special legal regime.

Just know-how makes it possible to ensure that trade secrets to third parties.

At the same time, know-how has all intellectual property characteristics and has a number of specific features. The monopoly of a certain person for a certain amount of knowledge is at the center of know-how. The legal knowledge monopoly regulated by the know-how. Differences exist between the know-how and other objects intellectual property, which are: universal, legally defined requirements, the possibility of patent protection, the possibility of registration of rights.

The bearer of know-how has the exclusive right to use it.

Exclusive rights to know-how lasts as long as the confidentiality of information constituting a commercial secret content.

Since the loss of confidentiality of relevant information, the exclusive right of the know-how ceases all owners.

Conclusions

Russia has made the protection of property (exclusive) and moral rights, trade secret information of electronic educational environments.

In the future, we must take a number of regulations, clarifying the concept of “forgery” for commercial confidentiality in e-learning environments.

Civil liability protection of trade secrets in e-learning environments need to be further tightened.

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Best Practices for a Scientific Seminar in Business Process Management for Master Students at Russian University

Nikolay Kazantsev, Yaroslav Gorchakov, Yulia Bilinkis (Stavenko)
and Dmitry Torshin

Abstract This paper summaries the experience of a group of tutors making research-oriented seminar for masters' students during the period of 2011–2015 years. For standard curriculum enhancement, the following methods were used: the balanced scorecard, subject-oriented approach for learning process modeling, e-learning platforms, virtual seminar concept, and many others.

Keywords Higher education · e-Learning · Research-oriented classes

Introduction

Higher education (HE) is rapidly changing nowadays affected by a number of trends such as internationalization, e-learning, student mobility, and rapid technological changes. That is what pushes tutors to adapt to the new realities, while they are stuck between the demands of universities and their students requests. The famous “5 forces” model (Porter and Millar 1985) inspired us to apply the same layout of forces to the current courses development (and a tutor in fact) (Fig. 1, Table 1).

The goal of this paper is to describe the ways how classic educational process could be enhanced to create conditions of *active learning* in compliance with the latest trends we found in Business Process Management (BPM) and other best practices. Active learning is a process whereby students engage in activities, such as reading, writing, discussion, or problem solving that promote analysis, synthesis,

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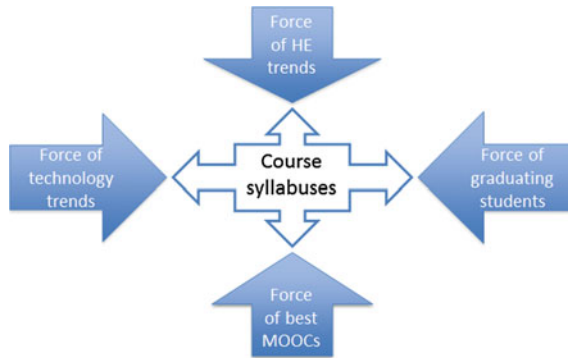


Fig. 1 Impact of “5 forces” on your course syllabus

Table 1 Detailed description of forces

1 Force	<i>Technology trend</i> implies that the course need to be changed accordingly to the development of IT (appearance of new methodologies, software tools, etc.)
2 Force	<i>Graduating students requests</i> for: latest practical cases, ready-to-use competences, etc.
3 Force	<i>Internationalization of Higher Education</i> : priorities on international research-orientation from Universities, inclusion of content taught in English, etc.
4 Force	<i>Best Massive Open Online Courses (MOOCs)</i> threat to substitute tutors role—since best tutors courses are available on e-learning platforms online
5 Force	<i>Tutors’ courses syllabuses competition</i> reacts on the four previous forces and defines which syllabus is better suited for the current educational market demand

and evaluation of class content. In active learning, students choose their own educational track, depending on the required competences for a future job.

Defining Learning Objectives—The Balanced Scorecard (BSC)

The problem of rigid educational programs performance is often connected with measuring instruments (KPIs) used in the practice of tutors that often do not correspond with real requests and feedback from students. The danger of false indicators is that they create *parasitic stages of educational process* that result in student overload; spending resources (time) to achieve objectives that are not directly related with student’s professional success. Moreover, students get dissatisfied with their performance and lose motivation for further studies, start missing classes because of work, etc.

Modern management concept, Balanced Scorecard (BSC), has a set of potentially effective means to solve these problems, especially while executing these techniques with information technology (IT). Defining targets (inc. KPIs) in each of the four perspectives: *Learning and growth* (for tutors); *Processes* (collaboration between tutors and students); *Customer* (for students); *Financial* (for university); and finding interrelations allows to select right priorities for a particular student group.

For instance, *to take internship in leading consultancy organization not later than in 1 year* is often mentioned as a target by our students. That creates a starting point for drawing a customized educational track.

Customized Learning Process Modeling—Subject-Oriented Approach

In order to negotiate the educational content there is a need of trust-worthy environment between tutors and students. To facilitate this we applied Subject-oriented Business Process Management (S-BPM) to the learning process to make it customized with demands of university, tutors and students. Similarly to the Balanced Scorecard it imagines organization as a collection of subjects: stack of layers, where targets, processes and outcomes are combined (Table 2).

Therefore, a learning process is presented as a joint activity of participants in the process of assimilation in the organization of the discipline, getting subjectively new or new substantive and procedural knowledge.

Based on our experience in BPM seminars, we identified the following requirements for the customized learning process:

1. rapid adaptation to changes
2. adaptive management, taking into account a variety of teaching methods
3. the constant interaction of the participants of the learning process (opportunities for creativity)
4. reflection, to participants in the subject-oriented process

To simulate the process we used diagrams of interaction and behavior of subjects that are realized in S-BPM tool Metasonic. This tool helped to define the separation principles of a generalized learning process into small processes, which models are designed in form of charts and diagrams of interaction behavior of subjects. Taking into account the generation of an executable application in Metasonic S-BPM both tutors and students can start process instances where, i.e., students may propose to include the required competence into the current instance of course syllabus. Therefore, course content for them could be changed dynamically in agreed frames with University.

Table 2 Detailed description of forces

Balanced Scorecard perspective	Subject-oriented perspective
Financial	Communication result and reaction on requests
Client	Students
Process	Communication of subjects (tutors and students)
Learning and growth (employees)	Tutors

For the Lacking Content—e-Learning Platforms (Open2Study)

Another emerging trend in Higher Education is University internationalization. According to Hans de Wit (2012): *Internationalisation of higher education is the process of integrating an international/intercultural dimension into the teaching, research and service functions of the institution* and includes several important elements: process, response to globalization and both international and local intercultural elements.

It could happen that some of the requested course content is missing (e.g., latest software that has no academic license yet). Therefore, to comply with students requests there should be conditions to involve e-Learning into educational process.

The best option here is to select small, but actual research or business–task in the area together with university partner that is able to share the knowledge. Local industry partners might also help in shaping the research task to enhance it with business significance. Additionally students are welcome to use the massive open online courses (MOOCs) on platforms Coursera, open2study and many others. Their results in certain cases may be approved as official certificates for the knowledge gained.

International Collaboration—Virtual Seminar Concept (ERCIS)

Since technological and methodological competences are widely taught during traditional curriculum, the following abilities are rarely trained: Social skills, Intercultural competences (Rosemann et al. 2013). This abilities are enhanced during work in international *virtual project teams*. Brocke (2011) mentions main design principles that shape *interdisciplinary, intercontextual, interpersonal, interintentional* and *linguistic* abilities during such practice:

1. Common goal
2. Project-oriented work (limited time and actual topic)
3. Diversity of students (competences & cultures)
4. Virtual collaboration tools
5. National tutor to facilitate grading

All the work is expected to be accomplished by students from a number of university partners without meeting Face-to-Face. Students should be able to choose their own methods of communication, collaboration, and socialization and requested to report weekly about their success. Such collaboration is likely to be organized in large-scale network-oriented university partnerships, such as European Research Center of Information Systems (ERCIS).

Conclusion

Described solution delivers opportunities to increase efficiency of active learning for automation and virtualization of educational process and therefore for maximization of ROI (return on investments) in universities intellectual and social capital. It results in creation of virtual community with a multiple content centers presenting a prototype of intellectual neural network with distributed association nodes. These nodes are formed during nonstandard educational process similar to brainstorming where participants have quite different knowledge levels and limitation due to traditional thinking. In this process all steps except final (gathering of experts) are nondependent on human actors, which increase efficiency of this process in general.

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Part XI

Symposium on Integrated Information

Organized by: Georgios Giannakopoulos, Christos Skourlas
Technological Educational Institute of Athens

Aims and Scope

The symposium promotes the knowledge and the development of high-quality research in the field of information. It aims to bring its participants the best analyses and discussions in the developing and interdisciplinary field of the field of information management and integration. It covers a wide field from diverse areas of practice and settings including culture, business, health, education and government.

Information is critical for the survival and growth of organizations and people. The challenge for information management is now less about managing activities that collect, store and disseminate information. Rather, there is a greater focus on managing activities that make changes in patterns of behavior of users and organizations and also in information that leads to changes in the way people use information to engage in knowledge-focused activities.

Topics

Integrated Information, Information Management, Knowledge Management, Records/Document Management, Conceptual and Organizational Perspectives of Knowledge, Communication Records/Document Management, Data Management, Health Information, Digital Librarie's Electronic Archives, Data Mining, Digital Collections (repositories, j stors, e-scholarship), Semantics Semantic Web, Software Copyright Electronic Publishing Development of New Metrics, Conservation Management, Digital Preservation, Management of Nonprofit Organizations Cultural Heritage Management, Advocacy, Networking and Influencing Managing, Change in Information, Organizations, Financial Management for Excellence in Information, Organizations, Human Resources, Management in Information, Organizations Conceptual and Organizational Perspectives of Knowledge, Communication, Distance Learning, E-Learning and the Contribution

of Information, Organizations E-research, E-science History of Collections, History of Information, Organizations History of Writing and Writing Technologies.

Main Workshops

1. 5th Symposium on Integrated Information: Theory, Policies, Tools

Organized by: Georgios Giannakopoulos, Technological Educational Institute of Athens, Department of Library Science and Information Systems, Greece

Description:

The necessity for an integrated approach towards the immense volume of information that is being produced at increasingly fast pace has become apparent. Technological developments not only have offered new tools for the managing of information but also are the new means for the production of information. Following a shift in attention, with the aid of technology, from primary evidence to their information content, classical sciences or techniques that had been developed for the management of library, archival and to some extent museum material need to converge under the main focus of efficient information management. The notion of information management offers a solid common basis for a theoretical approach in information sciences but comprises as well an access point to the information potential that is not under the control of information organizations. Information management as a scientific platform and as a professional subject presupposes the coexistence of library science, archival science and museology in the educational curricula, the implementation of integrated or complementary policies at a central or local level, in making good use of technology's potential for the creation of an integrated network of information.

2. 2nd Symposium on the Semantic Web and Big Data

Organized by: Christos Skourlas, Technological Educational Institute of Athens, Department of Informatics, Greece Eleni Galiotou, Technological Educational Institute of Athens, Department of Informatics, Greece

Description:

There are well-known limitations of the current web, e.g., information and data are heterogeneous in terms of content and structure. As semantic web is enhanced continuously with more machine-accessible information, new technologies and standards, the emerging area of the web of data provides support to a growing number of applications related to open data, linked data, and big data. This special session investigates theoretical and practical aspects, new models, issues of interlinked resources, and applications that exploit the semantic web of data. Topics of interest include, but are not limited to the following: Semantic Web and Society. Data integration on the web. Management of semantic web data and linked data. Languages, tools, and methodologies for representing and managing semantic web data. Database, IR, NLP and AI technologies for the semantic web. Semantic

technologies for mobile platforms. Information visualization of semantic web data and linked data. Visualization and presentation of big data. Business models, marketplaces, and platforms for open data. Semantic models and environments to support big data. Evaluation of semantic web technologies for e-government, environment, health, finance, etc.

Communication Role for Applying Anchoring Pricing in the Information Sector

Dimitriou Anastasia, Emmanouilidi Maroulia and Damianos P. Sakas

Abstract This study aims to examine the role of anchoring pricing, including in commercials on social media pages. It will show the users of social media's influence by digital advertisements. For this research, we designed a questionnaire that was distributed to a wide variety of people in the science community. Before the final version, we sent the participants a pilot survey. The response rate was 40.25 % of the community that received it. The results indicated that people who make online purchases and use the social media are more likely to be influenced by online commercials.

Keywords Strategic communication · Information sector · Strategic pricing

Introduction

The purpose of this research is to describe the emergence of the communication method of anchoring pricing in the field of information. As in all things in life, communication is based on each and every human being, and communication skills are the key to any good negotiation. The more knowledge and experience the person has, the more successful he or she and the agreement will be. Nevertheless, even the most competent people are affected by the technique of anchoring pricing (Caputo 2013). According to Chapman and Johnson (1999), “*anchoring is a widespread bias where people who take decisions are affected by random and non-informative starting points.*” Also, according to Furnham and Boo (2011), “*an-*

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choring is one of the most important self-generated cognitive skills.” The so-called “anchors” are in a position to affect people’s judgment, even in knowledge questions (Chapman and Johnson 1999).

The technique of anchoring pricing or focalism constitutes a cognitive bias that outweighs each person. This cognitive bias is based on a single element—which the person considers to be the most important. The person is usually not in a position to look at the wholeness of things, which is why we insist on some specific features. For example, in a survey conducted in 2006 titled “Would you be happier if you were richer?” the existence of cognitive bias was confirmed. People who had higher incomes were happier with their lives, while it appeared that those with lower incomes spent more time being sad. That is because (a) the investigation, with oriented questions, went indirectly to the respondent in specific responses, and (b) the respondent who was influenced focused only on the financial sector, without taking into consideration feelings or the other pleasures of life (Kahneman et al. 2006).

Literature Review

Three Basic Heuristics

A decision may be considered to be a complex process. Tversky and Kahneman (1974) emphasize the fact that when people are making decisions, they use three specific heuristics to reduce the complexity and confusion that can occur, and that have the effect of selecting correct decisions. Heuristics can be regarded as particularly useful, yet with them, potential errors do not cease to exist. The three heuristics are representativeness, availability, and adjustment with anchoring.

Representativeness is a decision-making shortcut that uses experience and stereotypes that exist in every mind for making quick decisions (Tversky and Kahneman 1973). Availability is a mental shortcut in the decision-making process. More specifically, it examines the possibilities and frequency of a decision, depending on how quickly the mind recalls examples of it (Tversky and Kahneman 1973). Adjustment and anchoring pricing is a term that is difficult to understand, and the way it operates is not yet entirely clear. However, as a phenomenon, according to Tversky and Kahneman (1974), it is obvious in estimating a supplied standard. In particular, it is a cognitive bias that is displayed in the decision-making process and takes the form of a proposal, an initial assessment in which people tend to rely on the maximum extent (anchor), and then tend to the process to reach a final value (Tversky and Kahneman 1974).

Selective Accessibility Model

According to Strack and Mussweiler (1997), the phenomenon of anchoring pricing can be reached from this model. The selective accessibility model signs in the

examples of anchoring pricing play an essential role by two specific processes: comparative and absolute judgment. These processes can be understood via the example of African nations (Tversky and Kahneman 1974). In a comparative judgment, participants were asked to compare an objective (African nations) with a specified value, which was the anchor. In the example, they were asked whether the percentage, which was chosen at random, was larger or higher than a specific number (anchor); in absolute judgment, participants were requested to give their best estimate. As regards the absolute judgment, these fully assimilated by the anchor that there have been in comparative judgment. For this reason, the average assessment by those who received a high anchor was 45 %, while those who received a low one was 25 % (Strack and Mussweiler 1997). The model of selective accessibility, signs that the comparison of a target with a value that contains the anchor (anchor number), led to a search strategy with a bias (how biased search strategy) (Brewer and Chapman 2002).

Social Networks

The use of social networks has become particularly acute in recent years owing to the rapid progress of technology. Social networks defined as “*the services which are based on the Internet and allow the people (1) to create a public or semi-public profile within a delimited system, (2) to express a list of other users with whom they share a connection, and (3) to see and run the list with their connections as well as those which have been created by others in the system*” (Boyd and Ellison 2008).

As for advertising, Facebook no longer operates as the most effective means of promoting products. Advertisers have the opportunity to choose their audiences (based on specific characteristics), which would seem to be the product offered for sale; this increases the chances of successfully selling the product (Lilley et al. 2012). Many users or potential consumers resort to pages of social networks (more specifically on Facebook), where all parties interested in the products that they want to sell leave the official Web pages (e.g., Coca Cola, Starbucks, and many other companies) (Neff 2010). Facebook, of course, has an effect on consumers. More specifically, the products that are posted indirectly each time affect the public as well as do not operate purely as a marketing tool. Posting is a new and more effective way to promote products as opposed to electronic advertising. This is the innovation that will attract a wider range of consumers (Wolff 2012).

Hypothesis Testing

The research part of this article consists of two main factors: (a) the Internet and online exchanges, and (b) online commercials. It has to emerge in the way in which the two factors are related. It is also important to determine the effect of social

networks on users today. Therefore the research is required to answer the following research questions/hypotheses:

H1. Persons having a better relationship with the computer and social media, buy more from the Internet.

H2. Persons buying from the Internet: 1. Do so out of necessity.

2. Do so inspired by online ads that are posted on social media.

H3. Persons buying from the Internet are influenced by the values given in Web advertisements.

Methodology

As stated above, the aim of the research is to highlight the effect of anchoring pricing on online buyers and social networks. From the survey methods that exist such as questionnaires, personal/phone interviews, observation, focus groups, etc. We chose the technique of questionnaire. The questionnaire was designed by the review that took place in the international literature. A pilot survey was held before the final configuration of the questionnaire, which gave a value to the whole procedure. It was designed in Greek and then translated into English. It was sent out both in Greece and to several foreign countries, such as France, China, Spain, Italy, and others. It is divided into three main sections, the first of which concerns the demographics of the participants and includes both open-ended and closed-ended questions; the second their personal opinions; and in the third, the estimates relating to the characteristics of their environment. The questions of the second and third sections were sealed. The second and third groups are divided into three sub-sections, which are the Internet and online exchanges, online commercials, and the personal characteristics of the individual. A five-scaled Likert type was used. The occupational areas to which they were sent vary and covered a wide range of the sciences. From the 400 questionnaires sent out, 161 were returned; in other words, the response rate was 40.25 %.

Findings

The following tables show the main results of this research. The results are based on the three hypotheses that were mentioned above (Tables 1, 2, 3).

Table 1 Hypothesis 1—correlations

Tested Variables		Technological experience	How often do you use the social media?	Do you make online purchases?
Technological experience	Pearson Correlation	1	0.372 ^a	0.472 ^a
	Sig. (2-tailed)		0.000	0.000
	N	161	161	161
How often do you use social media?	Pearson Correlation	0.372 ^a	1	0.288 ^a
	Sig. (2-tailed)	0.000		0.000
	N	161	161	161
Do you make online purchases?	Pearson Correlation	0.472 ^a	0.288 ^a	1
	Sig. (2-tailed)	0.000	0.000	
	N	161	161	161

^aCorrelation is significant at the 0.01 level (2-tailed)

Table 2 Hypothesis 2—correlations

Tested Variables		Do you make online purchases?	Do you prefer making online purchases to going to the store?	Are you easily influenced by prices of commercials on social media?
Do you make online purchases?	Pearson Correlation	1	0.666 ^a	0.186 ^b
	Sig. (2-tailed)		0.000	0.018
	N	161	161	161
Do you prefer making online purchases to going to the store?	Pearson Correlation	0.666 ^a	1	0.216 ^a
	Sig. (2-tailed)	0.000		0.006
	N	161	161	161
Are you easily influenced by prices in commercials on social media?	Pearson Correlation	0.186 ^b	0.216 ^a	1
	Sig. (2-tailed)	0.018	0.006	
	N	161	161	161

^aCorrelation is significant at the 0.01 level (2-tailed)

^bCorrelation is significant at the 0.05 level (2-tailed)

Table 3 Hypothesis 3—correlations

		Online purchases	Online commercials
Online purchases	Pearson Correlation	1	0.217 ^a
	Sig. (2-tailed)		0.006
	N	161	161
Online commercials	Pearson Correlation	0.217 ^a	1
	Sig. (2-tailed)	0.006	
	N	161	161

^aCorrelation is significant at the 0.01 level (2-tailed)

Discussion and Conclusions

The results confirmed the three hypotheses mentioned above. People who have better relationships with electronic media and social networks do in fact buy more from the Internet, either out of necessity or because they are inspired by techniques used in online commercials.

Also, the results of this research are similar to those of the investigation of Wu and Cheng (2011) in China, where they used a students of 318 undergraduate students from various universities in the country. The inquiry was intended to highlight the impact of anchoring on students through electronic markets. The experiment was implemented, giving students various options for programs, on one of which the technique being investigated had been applied. The results showed that a price that was marked in bold letters in a program had the highest level of students, and finally opted for the specific application.

However, the technique of anchoring pricing is not only on the Internet, online advertising, and social networks; it is related to the social level of the individual and his personal characteristics, such as sociability or collaboration. Causation, therefore, for future research is the impact of this technique, depending on the personality of each person. Finally, for greater reliability of the results, a larger sample of individuals at both the local and international levels should be investigated.

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An Analytical Framework for the Analysis of an Information Economy

Volha Pashkevich and Darek M. Haftor

Abstract This paper presents an analytical framework, understood as a set of interrelated attributes and analytical methods, aimed to enable the identification and characterization of a country's information economy. This characterization is in terms of the size, structure, and dynamics of an information economy, and more specifically its economic value created, labour input, jobs, and their wages. An application of the proposed analytical framework has the potential to uncover hidden economic structures and processes, which in turn may guide policy formulation for future job creation, educational efforts, and business environment stimulation, all aimed at a positive economic development.

Keywords Information economy · Digital economy · Information worker · Job substitution · Information-material decomposition

Introduction

An information economy is constituted by workers, in public and private organizations, who produce informational outputs (services and/or goods), for internal and external consumption. Example of information workers are teachers, film and music makers, accountants, lawyers, physicians, researchers, marketers, managers and secretaries, financial analyst, and many others. When the execution of information producing work includes digital technologies, an information economy tends to manifest somewhat different characteristics compared to the conventional economic wisdom as derived from the industrial age where material products were manufactured. For example, elimination of marginal costs, strong network effects,

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emergence of informal markets, and various job substitution effects (Wolff 2006; Apte et al. 2012). This suggests that the economic principles and theoretical bodies developed for material (i.e., traditional) economy do not fully account for an information economy (Apte et al. 2012). In light of these peculiarities, analysis of a nation's information economy becomes crucial as its results may offer an understanding of economic activities and structures that may require careful attention from various kinds of policy makers, both in public and private sectors; this may include employment and education policies formulated by governments and corporate strategies pursued by firms.

This paper proposes a conceptual framework aimed to characterize and measure the size, structure, and changes of a country's information economy. We also put forward details of an information intensity-based classification of occupations into information and physical categories, aimed to analyse the dynamics of information employment and wages in various product and service industries of an economy.

The next section elaborates on the very notion of information economy as such. The section thereafter presents the very analytical framework that includes the economic value added analysis of an information economy, the labour input assessment of an information economy, the information employee classification, and finally the assessment of information workers' wages. The paper ends with conclusion and suggestion for further investigations.

The Nature of Information Economy

The rapid development of information and communication technologies (ICT) since 1950s, accompanied with its recent massive spread and adoption in the developed economies, have contributed to the emergence of new kind of information intensive work tasks, jobs, businesses, industries, which contribute to a transformation of economies. ICT is utilized in various contexts, such as professional, civic and private (Bradley 2011), and there exists various approaches for how to measure the amount of ICT and also its utilization.

The deployment and use of ICT have attracted a significant amount of research aimed at examination of different aspects of an information economy (e.g.: Kraemer and Danziger 1990; Brynjolfsson and Hitt 2003; Autor et al. 2003; Kowalkowski 2008; OECD 2011; Gershuny and Fisher 2014).

The "ICT Development Index" (IDI) is a composite index combining eleven indicators into one benchmark measure that serves to monitor and compare developments in ICT across countries (ITU 2014). The IDI ranks countries' performance with regard to ICT infrastructure, ICT use and ICT skills. Countries that score highest on this IDI index, such as the Nordics, have typically governments that recognize ICT being a major driver for growth, innovation and economic development. Yet, the IDI index does not say much about the economic value generated by information workers, in part due to the use of ICT.

The difficulties in quantifying and aggregating has made almost impossible to capture impact of ICT development on national economies at the macro level. The number of studies that attempt to quantify size, structure and dynamics of the information economy at macro level has been relatively small (Karunaratne 1986; Apte and Nath 2004, 2012; Wolff 2006; Nath 2009).

In the economic sense of information worker, Porat (1977) was the pioneer who offered sufficiently detailed scheme of information economy assessment. Porat's study (1977) provided the first serious and comprehensive attempt to define and measure the place of information activity (or information sector) within national economy. In addition, it operationalised the structure and quantity of information-related work places. Porat divided information activities into primary information sector and secondary information sector, where the firstly mentioned include all industries that produce information goods and services (e.g., computer manufacturing, telecommunication, printing, mass media, accounting, advertising, etc.). The secondary information sector then accounted for all information services produced by public organizations and information goods consumed internally by those firms whose main output is not information; example of the latter includes organizing and managing firms and engineers who design a new machine that is produced by the firm. Porat (1977) studied the U.S. labour force for the period 1860–1980, dividing it into a two-sector aggregation: information good versus noninformation goods. The analysis showed a rapid emergence of information workforce and the relative decline of the traditional occupations (e.g., agriculture, manufacturing). We believe that Porat's study was important for several reasons: one is that for the very first time it provided data-based evidence that the investigated U.S. economy was changing from a material economy into an information economy. Secondly, it offered a first analytical framework for the conception and analysis of an information economy. However, in our view Porat failed to offer any vital recommendations for policy makers.

Apte et al. (2004) provided a critical assessment of Porat's methodology and suggested specific improvements that may be made to obtain a more plausible measure of the size and structure of the information economy. In 2006, Menou and Taylor (2006) pointed that analysis of the metrics of the "information society" are still far from optimal and continue to suffer from a number of serious limitations. In their paper authors presented some insights on how to measure "information society" in terms of definitions, units of measurement, and which methods of analysis and construction of indicators can be used.

Probably the most fundamental distinction of an information economy may be made in terms of asking for the content of a product. The binary distinction between material products versus information products a starting point for the analytical approach offered in this paper. This binary distinction of the content of a product may then be complemented with another dimension of a product, namely the popular binary distinction of a product's form: good versus service. Combining the two binary product dimensions generates four categories of products: information services, information goods, material services and material goods; see Fig. 1. This two-by-two conception of products offers a starting point for our investigation. As

Fig. 1 Illustrates the four kinds of products assumed here

	Products	Services
Material	Material Products (e.g. consumer goods)	Material Services (e.g. wholesale, transportation)
Information	Information Products (e.g. CDs, computers)	Information Services (e.g. consulting, design)

each type of product, suggested here, can be provided to an external market or to an internal market. Secondly each product can be produced by human or machine agents or a combination thereof. This in turn offers a reference point for definitions of information workers versus material workers, the firstly mentioned are those workers that process information while the secondly mentioned are those that process materials.

Conceptual Research Model

Economic Value Analysis of the Information Economy and Labour Input: Concepts and Definitions

In order to measure the economic value of an information economy, we followed the methodology developed by Porat (1977). By combining the two-by-two conception with product-service decomposition (see Fig. 1), we can gain useful insights into the structural changes that can take place in the economy.

To measure the size of the primary information sector we calculate value added that measures the contribution of each private industry and public organizations to the nation’s Gross Domestic Product (GDP). It is defined as an industry’s gross output minus its intermediate inputs.

To measure the size of the secondary information sector we calculate three components of value added: wages of information workers employed in sector, net operating surplus due to information activities, depreciation of information capital (ICT equipment, computer programs, and database mainly).

However, the method applied has its limitations, as macro data are collected and published at the aggregate levels of industrial and occupational classifications. Many of the information activities can only be identified at a high level of disaggregation (e.g.: publishing of computer games, computer consultancy activities, business and other management consultancy activities).

As use of ICT contributes to development of work and employment, making work more effective, it is important to understand proportions between hours worked, real labour costs, and industry’s output. The units of labour input measurement that are available for comparisons of information and material decompositions could be number of persons employed and the total number of hours worked.

Employment and Wage Patterns in the Information Economy: Conceptual Definitions

Classification of information employment and information workers is important. The main idea is to determine the extent to which employee involvement in the workplace and ICT promote the use of higher order cognitive and interactive skills.

Porat (1977) developed a conceptual scheme for information workers classification. This scheme divides occupations into three major classes, which are further divided into several subcategories (i.e.: knowledge producers and knowledge distributors; market search and coordination specialists; information processors; information machine workers).

We made some modifications of the Porat's methodology, since occupational standards have been changing for the last decades. In addition, it was found that every country has its own typology based on national occupational standards. So, we took into account specific features of occupational statistics that every country has. We suggest dividing occupations into groups and considering skills specialization in terms of four concepts: the field of knowledge and qualifications required; the tools and equipment used; the material worked on or with; the kind of output (goods or services) produced.

Following Apte et al. (2012), we apply indicator of information intensity, defined as a fraction of time spent in dealing with information-intensive tasks. An occupation is classified according to five levels of information intensity (100; 75; 50; 25; 0 %). We use the following equations for information and material employment in industry i :

$$IE_i = \sum_{j=1}^n v_j E_{ji} \quad \text{and} \quad NE_i = \sum_{j=1}^n (1 - v_j) E_{ji} \quad (1)$$

where IE_i and NE_i are, respectively, the information and noninformation employment in industry i ;

v_j is the weight that represents information intensity applied to the j th occupation and $v_j \in [0; 0.25; 0.50; 0.75; 1]$, and E_{ji} is the number of workers employed in occupation j in industry i .

To measure the total wage bill, we use the employment statistics data and corresponding data of wages (average or median salaries and wages).

First, we classify the occupations into several categories according to level of information intensity described above. Further, we apply the corresponding weights to total employment and total annual wage bills in each industry. We can calculate information and noninformation wage bills for all occupational categories within industries and sum them up for each industry applying the similar Eq. (1).

Conclusion

The findings of this study suggest that information-based work is somewhat different compared with physical work: regarded in economic and organizational terms, e.g., it is network effect dominated, it generates virtually no marginal costs, and it requires value-based prices.

The contribution of this analytical framework is twofold.

First, we provide a novel synthesizing of exiting analytical models, previously being isolated, all aimed at an understanding of an information economy, so that a well-synchronized analytical framework emerges. This new analytical framework is thus more comprehensive than their previous components and accounts for various kinds of interrelationships between these analytical components, which were ignored previously.

Secondly, we also offer several modifications and additions to the previous analytical methods, including new economic indicators. Overall, the here proposed analytical framework offers a novel approach to the characterization and thus understanding of an information economy in a society. It accounts for the changes of the share of information workers versus material workers, their economic value and labour input contribution, their relative share versus material workers, and their relative wages.

We assume that our attempts are significant input in measuring the approximate size of an information economy.

Future research should therefore concentrate on the investigation of the economic status of information economy and its underlying content and structure: workers, tasks, competencies, and associated economic value.

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The Use of Social Media for Private Concerns in Organizations: An Interview Study

Johanna Gunnlaugsdottir

Abstract Social media (SM) enables interactions between people where and whenever they choose. Many organizations have open access to SM and employees have access to such tools during working hours. The objectives of the research were to find out: whether and for what reasons the interviewees used SM for private concerns during working hours and what was the attitude toward such use. The study was undertaken 2013–2015 using open-ended in-depth interviews (the qualitative part of a larger study, the quantitative part was presented at IC-ININFO, Madrid, 2014). Different employee groups were chosen with purposive sampling in eight organizations and interviews were held with executives, HR managers, specialists, and general employees, one from each workplace. The main findings in the interview study were that employees used a considerable part of their working hours for personal use of SM for various reasons. The attitudes toward such use were different according to what position the interviewer held. Work is increasingly performed outside the office and the boundaries between work and private life are becoming increasingly unclear. For this reason, executives need to assess the success rate and performance of their employees and to look at their productivity and worth rather than questioning where and when they have worked or how long it has taken. The findings could be of value to organizations that want to evaluate SM use in their organization and how it impacts their people at work. It can also lay a foundation to further research in the field.

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Introduction

Work procedures at organizations have changed in many ways in the wake of the use of social media (SM). The effect of increasing use of SM differs, ranging from marketing and sale of products and services (Hajli 2015; Barnes and Andonian 2012) to varied connections with customers and employees.

The objective of this paper is to present an interview research that was carried out in Iceland in 2013–2015 on employee use of SM for private concerns during working hours. In this connection it means every type of communication via the media concerning personal and private matters but not issues concerning the business itself. The research questions asked whether and for what reasons the interviewees used SM for private concerns during working hours and what was the attitude towards such use. Different employee groups were chosen with purposive sampling in eight organizations and interviews were held with executives, HR managers, specialists, and general employees, one from each workplace.

SM is increasingly a topic for research (Ngai et al. 2015) but it appears that research on the use of SM at the workplace has up to this time among other things been aimed at ascertaining whether access to such media was open or not and what influence privately communicating on the internet has in general at the workplace and the rights of employees and employers. Information on the scale of private use of SM by employees appears to have neither been available nor about the attitude of employees and executives toward such use. This research was aimed at filling this gap—see also Gunnlaugsdottir (2015).

The article is divided into four parts. The beginning deals with the scholarly background of the research where the bibliography about the use of SM in reference to the use by employees for their private concerns during working hours is examined. Next the methodology and data collection are explained. The findings are presented in a separate section and at the end the discussion and the conclusions of the research.

Theoretical Background

SM, also known as Web 2.0, consist of the various internet technologies that make it possible for people to create material and to share it whenever they want to (Williamson 2013). In this way individuals by themselves or with others can create, organize, change, and edit material and information and pass it on via the media (NARA 2010). The forerunner, Web 1.0, was based solely on websites which was only possible to view and not to interact with in a social dialogue.

The beginning of SM can be traced back to 1978 with the arrival of computer software which the programmer Ward Christensen developed and which was called

a *computerized bulletin board system* (Scott and Jacka 2011). This software made it possible for people to create material, send it to each other, and communicate with each other. Now it is possible for the first time to send material to many places at once. The software was developed over the next 10 years but general use was not widespread. At the turn of the last century the media developed quickly and in 2003 the social medium Friendster appeared on the scene. It sparked interest at once and in only 6 months it had 3 million users. Various media opportunities then came on the market but enjoyed uneven popularity and were unequally widespread. Then in 2004 Facebook saw the light of day (Scott and Jacka 2011).

Among the SM the use of Facebook is now the most common, though Twitter also enjoys much popularity. The users of SM are many and the expansion has been rapid. Already by the end of 2006 Facebook had 12 million users (Scott and Jacka 2011) and by the end of 2013 they were over 1.2 billion (Sedghi 2014). New SM, like YouTube, Flickr and Instagram have followed in the wake of Facebook and there is no end in sight.

Increased use of SM will play a wide-ranging role in the operation of organizations in the next few years (Rishika et al. 2013). Many organizations have opened access to such media, especially for marketing and because of the work-related relations of employees within the company which, at the same time, allows employees to use the media for their own personal agenda during working hours. It is important that executives take into account their own responsibility for such media use, not least as concerns their organization's legal environment (ARMA International 2012).

According to an America Online survey and Salary.com in 2005, which is often cited, personal use of the internet was the main reason that employees did not see to their work during working hours (Buccioli et al. 2013). Research has sought to identify the characteristics and standing of those who are most likely to use the internet at work for private purposes. It has been shown that employees who were less likely to have to exercise their minds at work were more likely to waste time on the internet (Lieberman et al. 2011). The results of the survey by Garrett and Danziger (2008) were different and showed that career, independence on the job, income, education, and gender were key indicators of private use of the internet during working hours. The well-educated who held executive positions were more likely to practice this behavior than employees in general jobs. It was revealed that young men were more likely than others to spend time on the internet. Later research confirmed that in some respects young men were more likely to see to private concerns on the internet while at work but the difference between them and others was not as important as had been thought (Vitak et al. 2011). Further research on the correlation of work and private use of the internet also confirmed that increased independence on the job was more likely associated with such use (Jian 2013). This is in accordance with a questionnaire survey conducted in Icelandic organizations 2013 that showed that it was more common for men than for women to have access to SM, thus making it possible to tend to private concerns

at work, or 75 % of the men in contrast to 50 % of the women. However, in general it seems that the use of SM was more common among women than men, or 81 % of the women against 70 % of the men who said they used the media. It is not at all clear, however, whether this difference at work is correlated with sex as it could be correlated with the fact that men still hold more executive positions than do women. The results that showed that open access to SM for private use during work hours were more common among the more educated support the conclusion that use is correlated with occupation. For example it can be noted that 81 % of the respondents with a university education said they had such access in contrast to the 52 % who had only compulsory education (Gunnlaugsdottir 2015).

Methods

The research data presented here were collected in 2013–2015 using qualitative methodology and consisted of interviews. The objective of the research was aimed to shed light on the personal use of SM by employees during work hours. The aim was also to find out if the interview research could strengthen the results of a quantitative survey that was conducted in Iceland 2013 (Gunnlaugsdottir 2015). Using mixed research methodology (triangulation) enables merging the advantages of different types of research and thus obtaining information that is difficult to get by using only one method (Creswell and Plano Clark 2010; Zikmund et al. 2013). Using many tests is felt to increase the credibility of the results and is intended to support the validity of the research (Silverman 2013; Yin 1994).

The objectives of the present research was to find out whether and for what reasons the interviewees used SM for private concerns during working hours and what were the attitudes of executives and other employees about such use. In addition, the aim was to discover whether and what kind of SM the interviewees used whether or not they were at work.

Different employee groups were chosen for the interviews with purposive sampling in eight organizations where the number of employees ranged from 150 to 1000 (Thorlindsson and Karlsson 2003). The interviews were conducted from 2013–2015 and were held with executives, HR managers, specialists, and general employees, one from each workplace. The interviewees were chosen with the idea that they could give the most correct information about personal use of SM during work hours in the clearest way (Neuman 2011). Semi-structured interviews were used that contained open-ended questions. These questions were in part a continuation of the quantitative part of the questionnaire survey but the interviewees were given the opportunity to express themselves openly and in their own words about the personal use of SM during work hours, i.e., whether they used the media for communication about personal concerns and their private lives. The research was not intended, however, to ascertain what kind of personal concerns the interviewees

saw to with the media but only the time they spent on such use and their attitude toward such use, as described above. The same interview frame was used in all the interviews but when the HR managers were interviewed they were not only asked about their own use but also the use of other employees. It was felt that HR managers would be aware of such use as a part of their job.

Qualitative research is well suited to obtaining data at the scene (Bogdan and Biklen 2003; Gorman and Clayton 2005) and the interviews were always held at the workplace of the interviewee (Kvale 1996). A total of 32 people were interviewed at five private firms (companies A, B, C, D, and E) and three public organizations (institutions 1, 2, and 3). The organizations were identified by letters and numbers rather than names in order to protect the confidentiality of both the interviewees and the workplaces. The interviews lasted from about 30–60 min and were taped with the permission of the interviewees. Then, the interviewees were given the opportunity to review the taped interviews and only one of them made use of that opportunity (Gorman and Clayton 2005; Esterberg 2002).

The analysis of the interviews was also supported by grounded theory; themes were sought in the data and then coded and classified (Hennink et al. 2011; Schwandt 1997). Comparisons were constantly sought and indications found to merge the classifications of the themes. The themes turned on the type of SM used; whether the organizations had open or closed access to SM; the range of personal use of SM during work hours; and the attitudes of the executives and other employees to such use.

Results

This section discusses the results of the interview research on the attitude of the interviewees toward SM use and SM use for private reasons during working hours in Icelandic organizations. In terms of the interview research, 28 of the 32 interviewees generally used the SM. All 28 used Facebook and six of them also used Twitter.

The interviews revealed that five organizations of the eight had open access to SM, i.e., firms A, B, and C and institutions 1 and 2, whereas the other two firms, firm D and E and institution 3, did not have open access to such media.

As to occupation, the interviewees gave different answers about the private use of SM during work hours. Five of the general employees used it at work for a total of 3 h a week, the executives six and a half, the HM managers seven, and the other specialists for a total of 9 hours. One of the general employees, the one who worked for institution 2, did not use SM during work hours. The interview also showed that none of the five organizations that had open access to SM placed a ban on personal use.

In the interviews the interviewees were asked to think well about it and estimate then as accurately as possible how much time in whole and/or half hours they spent in general per week using SM for private concerns during work time. It turned out that 19 of the 20 interviewees in five of the organizations which had open access to SM spent a considerable amount of time doing this. In firm A the four interviewees in general spent a total of 9 h, in firm B and C four interviewees spent 6 h in each firm, at institution 1 four interviewees spent a total of 6 h on such and in institution 2 three of them spent 7 h to such use. The general employee at institution 2 did not use SM during work time.

It is known that there are different opinions among executives and employees about whether to allow open access to SM. All 32 interviewees from the eight organizations where the interviews were conducted were asked for their views on personal use of SM during work hours. All replied but their answers were usually not decisive. It was therefore decided to ask them whether they thought such behavior was rather positive or rather negative. Table 1 shows the results of their assessment.

The interviewees turned out to be more positive than negative regarding the personal use of SM at work, or 19 positive against 13 negative. The majority of the executives were rather positive about such use, or six of eight. Those who were positive mentioned that it was often to the good as when work strained the mind, and even time-saving, but they indicated it needed to be within recognized limits. For example the executive in firm A said: “this replaces the use of telephones and e-mails and is acceptable within limits,” and the one in firm B said: “our staff must use their mind a lot during work—they put their mind at ease by visiting Facebook occasionally.”

More HR managers were rather negative about it, or five of eight. Those who were negative said it was a waste of time and felt that employees should stick to their job during work and the one in firm B said for example: “far too much time is spent on this by our staff”.

The specialists, on the other hand, were all rather positive and they all said that sometimes and even often they tended to work during their spare time. They were of the opinion that working during their spare time made up for any personal use of SM during work hours. The specialist in firm C said for example: “it does not bother my conscience to use Facebook at work—I spend countless hours working while at home, both in the evening and during weekends,” and the one at institution 1 said: “I find it all right. I am always working in my spare time, both at home and while traveling”.

Almost all of the general employees were rather negative, or six of the eight. Those who were negative generally did not use SM or were clearly against such use during work hours. One of them, for example, did definitely not like the idea of using SM at work, could always do it after coming home. The general employee at organization C said however: “I wish that I could do this at work—my friends at other firms can, but here it is not allowed”.

Table 1 Views on personal use of SM during work hours

Employee	Firm A	Firm B	Firm C	Firm D	Firm E	Institution 1	Institution 2	Institution 3
Executive	R/P*							
HR manager	R/P							
Specialist	R/P							
General employee	R/N**							
Executive		R/P						
HR manager		R/N						
Specialist		R/P						
General employee		R/N						
Executive			R/N					
HR manager			R/N					
Specialist			R/P					
General employee			R/P					
Executive				R/P				
HR manager				R/P				
Specialist				R/P				
General employee				R/N				
Executive					R/P			
HR manager					R/N			
Specialist					R/P			
General employee					R/N			
Executive						R/P		
HR manager						R/N		
Specialist						R/P		
General employee						R/N		
Executive							R/P	
HR manager							R/P	
Specialist							R/P	
General employee							R/N	

(continued)

Table 1 (continued)

Employee	Firm A	Firm B	Firm C	Firm D	Firm E	Institution 1	Institution 2	Institution 3
Executive								R/N
HR manager								R/N
Specialist								R/P
General employee								R/P
Rather Positive	Total 3	Total 2	Total 2	Total 3	Total 2	Total 2	Total 3	Total 2

*R/P = Rather positive

**R/N = Rather negative

Discussion

This paper has taken into account SM use, especially in terms of the personal concerns of employees at the workplace. The analysis began with a theoretical discussion of the subject and then presented the methodology and results of the research that was carried out in 2013–2015 in Iceland on the personal use of employees of organizations of SM during work hours. The data were collected through interviews of employees at their places of work.

The results show that the use of SM is widespread in Iceland and 28 of the 32 employees in the interviews used SM and they all used Facebook. The research showed that Facebook was the most popular social medium and that the popularity of Twitter and other SM was far behind that of Facebook as was the result of a questionnaire survey from 2013 (Gunnlaugsdottir 2015).

It was revealed that five of the eight organizations where the interviews took place had open access to SM but in recent years there has been an increase in the number of organizations that make use of the media in business (Barnes and Andonian 2012; ARMA International 2012).

None of the five organizations in the interviews that had open access to SM banned such use by their employees during work hours. The answers of the interviewees showed that men more than women, especially the younger ones, were more likely to use SM for personal concerns at work. The results revealed, both in the questionnaire survey (Gunnlaugsdottir 2015) and the interview research, were consistent with the results of other research on internet and SM use at work in respect of sex and occupation (Garret and Danziger 2008; Vitak et al. 2011). The interviews showed a difference by occupation in the personal use of SM during work. The five general employees spent 3 h a week on this, the executives six and a half, the HM managers seven and the specialists a total of 9 h. In this study it can be surmised that specialists were more likely to need to jog their thinking at work than did other staff members. In this connection the results differed from those of the study by Liberman et al. (2011), which showed that employees who had jobs that

were less mentally demanding were more likely to see to private concerns on the internet during work hours.

According to the interview survey the 20 employees who worked for the five organizations that had open access spent a considerable amount of time at work, in fact a total of about 6 h in three of them and seven and 9 h in the other two. This is in agreement with the questionnaire survey conducted in Iceland 2013 that showed a considerable amount of working time spent on SM for private concerns (Gunnlaugsdottir 2015).

The 32 interviewed in the eight organizations were asked for their opinions on the personal use of SM during work time but the answers turned out to be not unconditional. Effort was therefore made to assess and analyze them in terms of whether they were rather positive or rather negative. It appeared that there were more rather positive than rather negative replies, or 19 versus 13. It also appeared that the executives and specialists were more positive than the HR managers and general employees as to the use of SM for private concerns during work time. These results showed that the assessment of the employees of the opinions of the executives of such use seemed to be more negative than the actual opinions of the executives which agrees with the Icelandic questionnaire study from 2013 (Gunnlaugsdottir 2015). This is an interesting result and it would be good to research it further.

Research carried out by various others has shown a positive attitude toward the internet and the use of SM for private concerns during work time if it is within an agreed limit, according to the policy of the organizations, and is not overdone. It is expected that the results from this research and the questionnaire study from 2013 (Gunnlaugsdottir 2015) will clarify the position of the use of SM during work hours and can at the same time support a better understanding of such use. The results can help executives of organizations to assess the advantages and disadvantages associated with the use of SM in terms of their operations and at the same time whether it is desirable to allow employees to use the media for their own private concerns during work time.

Work is increasingly performed outside of the office and the boundaries between work and private life are becoming increasingly unclear. Technological innovations, such as laptops, tablet computers like iPad, and smartphones have made it easy to work either outside of the office or at the workplace. Places outside the workplace are often called “the third office,” which can mean places like a hotel, coffeehouse, library, home, and other places that were defined as public, such as airplanes, long-distance coaches, trains, and other public thoroughfares (Allen and Shoard 2005; Mäkinen 2013; Mäkinen and Henttonen 2011). For this reason executives need to assess the success rate and performance of their employees and to look at their productivity and worth rather than worrying about where and when they have worked or how long it has taken (Ivarsson and Larsson 2012).

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Toward an Integrated Approach to Information Management: A Literature Review

Niki Chatzipanagiotou

Abstract In this literature review, the author examines the scholarly literature of Information Management (IM) and related fields in the recognition that information has long been an important asset for any organization. However, nowadays the work environment in organizations is more complicated due to the information overload that employees experience on a daily basis. The information deluge requires employees' swift attention, analysis, and action within a limited time. In response, Information Management aids organizations manage information and realize its potential. This literature review reveals that scholars have given various interpretations to the term according to the perspective (organizational, library, and personal) under which Information Management is examined. Additionally, the term is often used interchangeably with other terms such as knowledge management, data management, content management, etc. Within this multidisciplinary framework, the author presents various definitions of the meaning of Information Management, including a synthesis working concept, to guide her doctoral studies. Paper conclusions recommend an integrated approach to information management which combines the organizational and the library perspective of Information Management, as advanced by Detlor. This proposal emerges out of recognition that a library is a dynamic, living information and knowledge creation organization. Fulfillment of this potential requires that information processes are integrated in librarians' daily work life in order to contribute to organizational learning. This paper could serve as a starting point for an exploratory research study on an integrated approach for Information Management that can contribute to organizational learning in library organizations.

Keywords Information management · Information · Data · Knowledge · Organizational learning

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Introduction

Information is an important asset for any organization. Nowadays the work environment in organizations is more complicated due to the information overload that employees need to deal with on a daily basis (Savolainen 2007). Organizations are more globalized, their human resources are more distributed, the technological advances are invasive, giving employees the ability to be connected 24/7 and, therefore, increasing the pace and workload of information flow. The information overwhelm requires attention within a limited time to analyze, digest, and reflect upon it.

Information Management (IM) and organizations are interrelated. IM helps organizations manage their information in a way that the intended end users know it exists, can understand it, access and apply it. When information is managed effectively, it facilitates collaboration among employees, and helps the organization learn and make better decisions based on that information (Mirijamdotter and Somerville 2014b).

Distinguishing Information, Data, and Knowledge

Information is the core of Information Management and a natural starting point for appreciating the purposeful organizational learning given the name of the field of IM. Information is a multidisciplinary term which is used in various contexts by various groups given various meanings (Langefors 1993). Defining the term information is problematic because there is not a clear distinction between information and the related terms of data and knowledge (Checkland and Howell 1998).

So, in this literature review, it is considered necessary to distinguish the meaning of data, information, and knowledge. Data are defined as symbols for basic description of things, which cannot be used to provide insights, but can be used to create information when meaning is added (Davenport and Prusak 1998; Rowley 2007; Jashapara 2011). According to Langefors (1993), data are signs which are used to represent information. Langefors (1993) in his infological equation states that in order for data to turn into information an interpretation process is needed. He also stresses that data are considered neither information nor knowledge, but, they can provide information to those who own the necessary pre-knowledge to understand them. Langefors' idea is represented in his infological equation " $I = i(D, S, t)$ "; which means that the information (I), or knowledge, is generated from an interpretation process (i) of the data (D), related to the pre-knowledge (S) of the interpreter at a specific point of time (t). Additionally, Langefors (1993) considers information as knowledge in a form which can be communicated. Therefore, information can be defined as meaningful or systematically organized data (Jashapara 2011) that can be used to create knowledge (Davenport and Prusak 1998; Rowley 2007).

According to Checkland and Holwell (1998), information facilitates decision-making within organizations. Similar to Langefors, they state that data are

turned into information through an intellectual process. Checkland and Holwell (1998) introduced the concept of “*capta*”. *Capta* are captured data or, in other words, data that catch a person’s attention, go through a mental process, turn into information, and eventually, by changing form, turn into knowledge. Once *capta* are captured, they are put into a context, so we can ascribe them meaning and turn them into meaningful information which can lead to knowledge.

On the other hand, knowledge is defined as contextual information, which is used to indicate and guide actions through evaluating the information. Information and knowledge cannot be equated. Knowledge resides in the mind of the knowers, and it can be used to create wisdom (Davenport and Prusak 1998; Rowley 2007). Knowledge can also be transformed into information through documents, best practices, and lessons learned. Along these lines, an interplay between knowledge and information can be identified.

Defining Information Management

Information represents one of the organization’s resources. The needed information is acquired from either internal or external sources. The role of Information Management practices and systems are to make sure that information is disseminated and delivered, when and where it is needed, through clear communication channels, so that the members of the organization will be able to respond to technological, financial, social, and legal changes. In addition, information enables nimble responsiveness within the workplace as employees use information to learn through information sharing and knowledge creation (Mirijamdotter and Somerville 2014a). The effectiveness of an IM culture can most likely be evaluated or measured by the effect of information in the organization, or, in other words, by the extent of knowledge creation or innovation in organizations. Likewise, Information Management can potentially provide a competitive advantage to the organization and, consequently, transform it when the information structures and the organization’s strategy are aligned and integrated. In these ways, Information Management can contribute to organizational learning and it can lead to changes in the way people/employees use information to engage in knowledge activities (Somerville and Chatzipanagiotou 2015).

In an attempt to locate a commonly accepted definition about Information Management, a thorough investigation in academic monographs, encyclopedias, peer-reviewed scientific journals, and other dissertations was made. A literature review revealed that Information Management is a broad conceptual term and has been given various meanings and interpretations. Often, the term is used interchangeably with other terms such as knowledge management, data management, and content management, etc. Some of the most representative definitions are the following:

Information Management *links and aligns business strategy and information with the use of Information Technology (IT)* (Johannessen and Olaisen 1993).

Choo (2002) defined Information Management as *a continuous cycle of related activities encompassing the information value chain*.

According to Gartner IT Glossary (Gartner 2013), Information Management is a technology-enabled method for collecting, storing, processing, and managing information with the aim of better and more efficient management.

After considering various definitions, the author advances the following working definition: Information Management integrates people, processes, technology, and content. IM starts with the collection and management of both physical and electronic information of organizations, and the dissemination of this information to the interested parties by using digital technologies and information systems. And it includes all systems and processes within an organization that are used or can be used for the creation and use of corporate information with the aim of developing or operating the organization more efficiently. Information Management can also lead to changes in the way people/employees use information to engage in knowledge activities. In fact, the challenge for Information Management nowadays is more focused on managing these activities that lead to changes of people, employees, organizations than managing activities of collecting, storing, and disseminating information (Elsevier 2015; Mirijamdotter and Somerville 2014a).

This definition adopts a process orientation toward IM. The emphasis on information and information exchange assumes that using information to learn is a process, which is relevant to both external and internal information. These two types of information are processed and structured through a third level of information which consists of a set of behaviors -the how of information process-. Accordingly, Information Management is seen as the control over the information life cycle.

There are several models of the information life cycle (Choo 2002; Wilson 2003; etc.). Most of them include main processes within this cycle such as the:

- Creation or identification of information needs: the process where individuals or organizations generate and produce new information items.
- Acquisition of information in order to address those needs: the process where information items are obtained and gathered from external sources.
- Organization: the process where information is classified in ways that facilitate easy retrieval at a later stage.
- And storage of information: the process of physically storing information content in databases or other file systems.
- Dissemination of information: the process of distributing and sharing the information.
- Information Use: the process where individuals or organizations use and apply the information which is available to them.

This information life cycle model, although it is detailed, it is a straightforward model. It implies a beginning—the creation—and an end—the application—of the information process. But when information is preserved and managed through Information Management, it does not die as is implied in a life cycle model-, it can be used and reused, and therefore the cycle evolves in an ongoing iterative process.

Information Management Perspectives

Having in mind the information life cycle, Detlor (2010) examined Information Management by taking into consideration three main perspectives: the Organizational, the Library, and the Personal perspective. The organizational perspective deals with the management of all information processes involved in the information life cycle, with the aim of contributing in developing or operating the organization more efficiently, and in achieving the goals of the organization. It treats information as a strategic asset, and one that can be leveraged into a competitive advantage for the organization. The organizational perspective suggests that Information Management is more than the management of data. Rather it is the management of various information resources, ranging from data to information.

Likewise, the personal perspective includes all processes of the information life cycle for personal purposes, for example, personal calendars, work schedules, etc. Hence, it refers to the management of personal information with the aim of improving personal and individual on work tasks.

Additionally, Detlor (2010) recognizes a library perspective of Information Management which acknowledges the role of information provision organizations, such as libraries, whose mission is to provide access to information resources and services to the library users. According to this perspective, IM refers to the management of the library's information collections, implying printed and digital material, with the aim of helping the library users locate, access, and use these information items.

Information Management in Libraries

This paper argues that a library is a dynamic, living information, and knowledge creation organization, which builds on information. In fact, the management of information is regarded one of librarians' expertise. They are professionals who are trained to be experts in information searching, collecting, organizing, preserving, acquiring, disseminating, and using information. So, the author proposes to integrate the organizational and the library perspective.

However, librarians have been taught to treat information mainly as a commodity, meaning a product or a service of value. But information is not only a commodity. Information is also an asset which value can be recognized and managed within the library organization itself. The evolution of Information and Communication Technologies (ICTs) and, specifically the technological advances have changed the traditional role of the library and, therefore, the traditional role of librarians (Bernsmann and Croll 2013). At the same time, the digital age and the new information economy have brought radical changes to library organizations. The new roles require that the library is an information and knowledge creation center for both its library users and its library employees.

Amidst these disruptive circumstances, librarians oftentimes face complex situations that require them to change their organizational behavior. In order to address and overcome these challenges, the librarians can use the available information, manage it, and learn from it. In other words, an information provision organization, such as a library, can leverage its information both internally in the organization and externally to their users and stakeholders. Information Management can be used in a library to value the organization's intangible assets in order to best leverage knowledge inwards and outwards. The internal information can be integrated in librarians' daily work life in order to contribute to their organizational learning. It can be capitalized in order to expand learning throughout facilitation of information sharing and knowledge creation through an integrated approach to Information Management.

Conclusion

In this paper, the author examined the literature of Information Management, focusing mainly on the meaning of information, which constitutes the core of IM. The review revealed that the terms of information and Information Management, due to their multidisciplinary nature, lack clear definitions. Thus, the paper offers a working definition, drawing from commonly accepted definitions from various perspectives.

The author also used information as a starting point for appreciating the purposeful organizational learning that Information Management can provide to organizations, and specifically to library organizations. When information is integrated into the daily work life of librarians, which oftentimes comprises complex situations, and is not managed only as a commodity but as an asset too; then, it can facilitate the collaboration among employees, and thereby contribute to organizational learning and better decision-making.

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Assessing Library Anxiety in Undergraduate Students Using the Greek Library Anxiety Scale (G-LAS)

Konstantinos-Anastasios Doris, Paraskevi-Anna Provata and Eftichia Vraimaki

Abstract The term “library anxiety,” coined by Mellon (1986), has been described as “an uncomfortable feeling or emotional disposition, experienced in a library setting, which has cognitive, affective, physiological, and behavioral ramifications” (Jiao et al. 1996, p. 152). High library anxiety levels have been associated with low research and academic performance. The current study investigates library anxiety in a sample of 279 undergraduate students of Greek tertiary education institutions. Anxiety levels were assessed using an aggregation of items from previously published scales to form the Greek Library Anxiety Scale (G-LAS). Data analysis shows that the G-LAS has good psychometric properties, with alpha values ranging from 0.931 to 0.703 for barriers with staff and rules barriers, respectively. Overall, students report low levels of total library anxiety (mean 2.4).

Keywords Library anxiety · Greek library anxiety scale · Undergraduate students

Introduction

Entering tertiary education can be an overpowering experience for many individuals, as academic requirements differ greatly in relation to those of secondary education (Cleveland 2004). Part of students’ novel experiences is their encounter with the academic library (Patton 2002); in fact, a considerable number of first-year students enter the university with no library skills (Ellis and Salisbury 2004). However, since at some point during their academic life students are bound to use their institution’s library, their lack of skills tends to make them feel apprehensive when confronted with the library environment and library-related tasks (Jiao and Onwuegbuzie 1997). This negative effect is termed “library anxiety”

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(Mellon 1986) and has been described as “an uncomfortable feeling or emotional disposition, experienced in a library setting, which has cognitive, affective, physiological, and behavioral ramifications” (Jiao et al. 1996, p. 152).

Although information scientists have long been familiar with the behavioral and affective manifestations of library anxiety, only fairly recently a scientific and detailed examination of the phenomenon has been undertaken (Onwuegbuzie et al. 2004), which has pointed to several negative outcomes of library anxiety. For example, library anxious students tend to exhibit a number of counterproductive behaviors, including library use avoidance and inability to use the library in an efficient and effective manner (Carlile 2007). Furthermore, library anxiety has been found to pose significant impediments to research performance, which in turn has a negative impact on academic outcomes, especially at the graduate level (Onwuegbuzie and Jiao 2004). Although much has been learned about library anxiety, there are still many issues to be explored (Onwuegbuzie et al. 2004).

The aim of this study is twofold: (a) to psychometrically validate the instrument utilized to measure library anxiety, namely the G-LAS and (b) to assess the levels of library anxiety of undergraduate students of Greek tertiary education institutions. The current research adds to the literature as, to the best of the authors’ knowledge, it is the first to examine the phenomenon in the context of the Greek tertiary education.

Research Methodology

Sampling and Data Collection

Regarding sampling, the nonprobability method (convenience sampling) was utilized, which is often used in library research (Skowronek and Duerr 2009). In all, 350 questionnaires were administered, of which 279 suitable for analysis were returned. The final sample comprised 108 male and 171 female students, of 22 years average age. Of the 279 participants, 32 % were first-year, 6 % second-year, 16.5 % third-year, 30.5 % fourth-year, and 15 % fifth-year students.

Questionnaire Construction and Instrument Content Validation

Data were collected using a structured questionnaire in electronic format. Library anxiety was assessed using an aggregation of items from previously published scales (Bostick 1992; van Kampen 2004; Świgoń 2011; Song et al. 2014), aiming

to reflect the specific cultural content. Content validity was assessed through pretesting and the final item wording was checked for equivalence with the original versions using the back translation method. Slight phrasing modifications were based on the pretesting and back translation procedures. The resultant instrument consisted of 45 items, divided into seven constructs; all items were measured using a 5-point Likert scale.

Data Analysis and Results

Instrument Construct Validation

Although the items utilized to measure library anxiety are adopted from published and validated scales, the fact that a mixture of items was used, as well as that the instrument was applied in a different cultural context called for its validation. An instrument can be evaluated on the basis of content and construct validity, which can be assessed through convergent and discriminant validity testing (Campbell and Fiske 1959). In this study, content validity was established through pretesting; convergent validity was assessed through confirmatory factor analysis (CFA), for which the following cutoff values were set: 0.6 for factor loadings (FL) (Bagozzi and Yi 1988); 0.7 for Cronbach's α ; 0.5 for Total Variance Explained (TVE) and Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (Fornell and Larcker 1981).

The results of the CFA (Table 1) indicated that several of the original items had to be excluded from the analysis. Moreover, the “library knowledge barriers” construct loaded into two distinct factors, namely “knowledge of library organization” and “knowledge of library services offered.” As a result, the Greek version of the Library Anxiety Scale comprises 32 items and 8 constructs with good psychometric properties. Finally, the discriminant validity of the instrument was tested by examining the difference between the square root of the average variance extracted (AVE) of each facet and the correlations shared by that facet and the remainder (Fornell and Larcker 1981). In all cases, analysis indicates that discriminant validity exists among the library anxiety facets (Table 2).

Library Anxiety Levels

Library anxiety levels of the study's population have a mean score of 2.4 and a standard deviation (SD) of 0.6. Mean score per library anxiety facet was also calculated (Table 3).

Table 1 Confirmatory factor analysis of the G-LAS

Construct/Items	Mean	SD	FL	KMO	TVE	α
<i>Barriers with Staff</i>						
The librarians are not approachable	2.61	1.169	0.862	0.893	74.398	0.931
The librarians are helpful	2.49	1.152	0.876			
I do not get help in the library in time	2.51	1.161	0.809			
The library staff does not care about students	2.34	1.154	0.870			
The library staff does not listen to students	2.30	1.158	0.893			
The reference librarians are unfriendly	2.41	1.237	0.864			
<i>Affective Barriers</i>						
I am embarrassed that I do not know how to use the library	1.89	1.150	0.819	0.894	66.377	0.897
I think that other students know the library better than me and this is embarrassing for me	2.01	1.220	0.852			
I am embarrassed while asking the librarians questions	1.70	1.035	0.759			
I am ashamed, that I cannot use the library	1.69	1.019	0.874			
I always feel uncomfortable when I am going to library or I think about going there	1.50	0.911	0.745			
I am ashamed of my lack of knowledge about how to use computer catalogues, Internet, databases, and so on	1.77	1.039	0.831			
<i>Technological Barriers</i>						
I am not effective in using electronic databases (full text and abstract) which are accessible on the library web page or on the library net	2.68	1.156	0.866	0.808	65.115	0.706
I am not effective in using computer catalogues	2.65	1.188	0.881			
I do not know how to order a book in the library via the Internet	3.07	1.459	0.690			
I do not understand how to connect from home to the library databases	2.59	1.313	0.776			

(continued)

Table 1 (continued)

Construct/Items	Mean	SD	FL	KMO	TVE	α
<i>Knowledge of Library Organization Barriers</i>						
A lot of things connected with libraries are complicated for me	2.37	1.069	0.827	0.657	65.026	0.723
I do not know how to begin a search in the library	2.13	1.080	0.849			
I do not know what to do when the book I am looking for is not on the shelf	2.27	1.231	0.739			
<i>Knowledge of Library Services Barriers</i>						
I do not know what services the library website provides	2.78	1.400	0.900	0.724	77.721	0.856
I do not have sufficient knowledge about the library, its departments, reading rooms, etc.	2.57	1.258	0.888			
I know what resources are available in the library	2.65	1.268	0.856			
<i>Library Comfort Barriers</i>						
The library is not a nice, comfortable place	1.98	1.106	0.795	0.808	66.498	0.828
There are no good facilities and conditions for reading/ studying in the library	1.91	1.042	0.839			
There are no good facilities and conditions for group working in the library	2.27	1.239	0.819			
The library is not well organized (complicated rooms and collections layout)	2.09	0.972	0.808			
<i>Resources Barriers</i>						
The library does not subscribe to journals, which I need	2.76	0.956	0.792	0.682	67.010	0.754
The library does not own/purchase books, which I need	2.71	1.012	0.849			
The library has too few copies of the most popular titles	2.75	0.950	0.813			
<i>Rules Barriers</i>						
The time limit of borrowing is too short	2.80	1.073	0.786	0.652	62.731	
The overdue fine is too severe	2.82	1.154	0.839			
There are too many library regulations and rules	2.77	0.976	0.748			

Table 2 Correlations and square root of variance average variance extracted

		1	2	3	4	5	6	7	8
1	Barriers with Staff	0.863							
2	Affective Barriers	0.144	0.815						
3	Technological Barriers	0.128	0.379	0.807					
4	Knowledge of Library Organization Barriers	0.204	0.526	0.551	0.804				
5	Knowledge of Library Services Barriers	0.230	0.429	0.627	0.593	0.882			
6	Library Comfort Barriers	0.452	0.353	0.206	0.342	0.359	0.816		
7	Resources Barriers	0.318	0.159	0.085	0.141	0.169	0.361	0.853	
8	Rules Barriers	0.266	0.321	0.369	0.357	0.350	0.319	0.306	0.792

Note Bold numbers in the diagonal row are square root of average variance extracted

Table 3 Mean scores per library anxiety facet

	Mean	SD
Library Anxiety	2.4	0.6
Barriers with Staff	2.4	1
Affective Barriers	1.8	0.9
Technological Barriers	2.7	1
Knowledge of Library Organization Barriers	2.3	0.9
Knowledge of Library Services Barriers	2.7	1.2
Library Comfort Barriers	2.1	0.9
Resources Barriers	2.7	0.8
Rules Barriers	2.8	0.8

Discussion and Conclusions

With regard to overall library anxiety, the majority of the study participants experience low levels of library anxiety, lower than those reported by previous studies in the literature (e.g. Anwar et al. 2004; Song et al. 2014). However, this result should be viewed with caution, as students may have underreported their anxiety levels either owing to social desirability or due to their tendency to overestimate their information literacy and library usage skills (Maughan 2001; Chatzilia and Sylaiou 2013). Further, data analysis indicates that the main library stressors are the regulations imposed by the library, followed by technology, resources, and knowledge of library services; past studies, have pointed to resources as the major library stressor (e.g., Świgoń 2011; Song et al. 2014).

Regarding future research, the validity of the G-LAS should be further assessed, using a larger and randomized sample. Studies should also examine the association of library anxiety with other factors, such as academic procrastination, research performance, GPA, number of library courses attended and so forth.

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Retrieval and Dissemination of Information in Distributed and Wireless Environments

Christos Skourlas, Anastasios Tsolakidis, Eleni Galiotou, Nikitas N. Karanikolas, Petros Belsis, Dimitris Vassis and Argyro Kampouraki

Abstract This paper investigates a framework for Secure Retrieval and Dissemination of Information (text and image) in Distributed and Wireless Environments (SECRET_DIDWE). Our research focuses on the evaluation and integration of Information Retrieval techniques. Text Retrieval and Content-Based Image Retrieval techniques are mainly studied for use in medical environment. The framework is based on a wireless architecture to enable authorized medical personnel to access medical records in a secure and transparent manner, utilizing an agent-based architecture. A policy-based architecture is part of the framework for utilizing wireless sensor devices, advanced network topologies and software agents to enable remote monitoring of patients and elderly people. These technologies can be used to achieve continuous monitoring of a patient's condition. Medical information classification based on neural network techniques of SVM (Support Vector Machines) type for supporting diagnosis is also incorporated into the framework.

Keywords Information search and retrieval · Pervasive/ubiquitous healthcare · SVM and diagnosis · Security

A Framework for the Retrieval and Dissemination of Information

Several applications in special purpose Distributed and Wireless Environments are related to Secure Retrieval and Dissemination of Information. In this section, we present the SECRET_DIDWE framework including four main mechanisms:

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- (1) An integrated mechanism for Retrieval and Dissemination of Information. This mechanism is based on the expansion of Information Retrieval techniques, e.g. text retrieval, personalization, Content-Based Image Retrieval, in order to apply them in applications in Distributed and Wireless Environments.
- (2) Design of a Mechanism for Transparent Information transfer using intelligent agents
- (3) Design of a Mechanism for secure medical information transfer in ad hoc networks
- (4) Networked collaborative SVM-based classification for supporting diagnosis.

Figure 1 illustrates the role of retrieval and dissemination of information in distributed and wireless environments. The components–mechanisms establish a

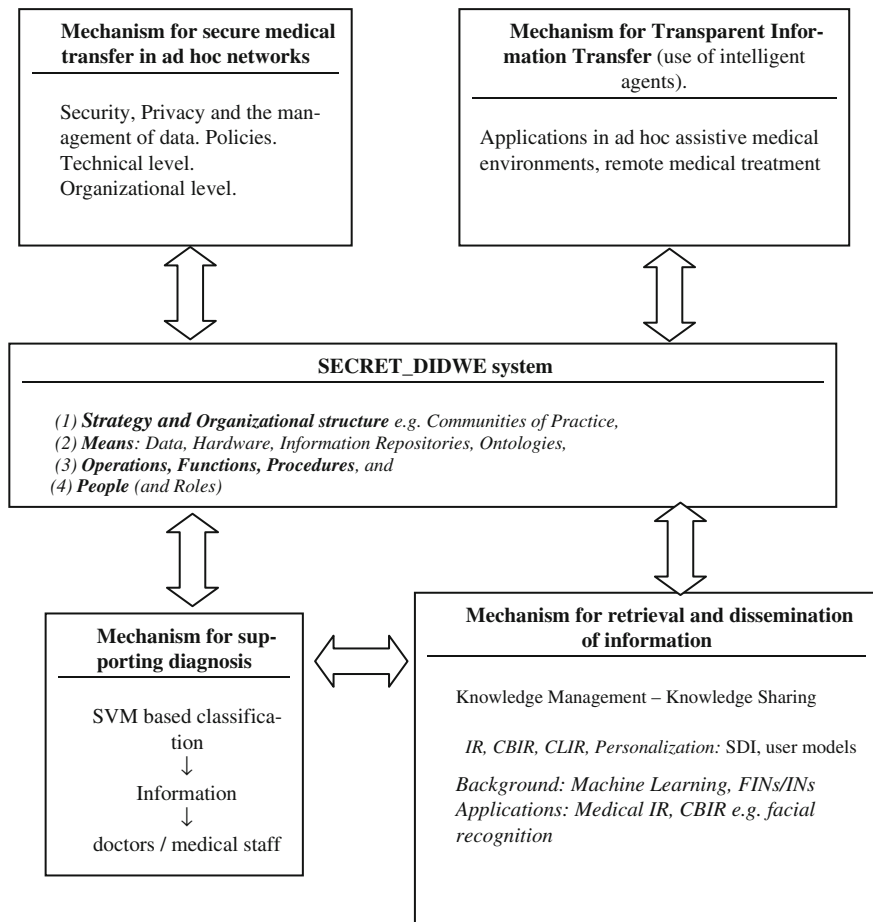


Fig. 1 The role of retrieval and dissemination of information in distributed and wireless environments. Four mechanisms-based approach for healthcare applications

conceptual framework for several applications. Among else, the components of a SECRET_DIDWE system consist of information retrieval, content-based retrieval, image retrieval. Cross-Language Information Retrieval (CLIR) is related with the possibility to support several different languages, and it is devoted to overcome language boundaries. At the case of the Content-Based Image Retrieval systems (CBIR) image retrieval is usually conducted using both textual and visual features. Personalization and user models are essential part of the conceptual framework. Personalization is simply defined as the process of making information systems adaptive to the needs and interests of individual users. Web personalization concerns data collection about the users. A number of different techniques could be used for personalization, e.g. the traditional SDI—Selective Dissemination of Information, user models, stereotypes, and user communities. Several technologies can be applied to IR systems and personalization systems: Machine Learning, Genetic Algorithms, Neural Networks, Fuzzy logic, etc.

Discussion of the Framework

In this section we present some research results supporting the proposed SECRET_DIDWE approach. Such contributions follow the four main directions/mechanisms described in the previous section:

1. An integrated mechanism for retrieval and dissemination of information

The integrated mechanism could be based on the expansion and the application of Information Retrieval (IR) techniques. This mechanism mainly integrates two categories of IR which are of prime interest for applications in special purpose environments: Text Retrieval and Content Based Image Retrieval. Therefore, the mechanism must support: (a) text retrieval, e.g. medical text retrieval, (b) image/video retrieval, e.g. Content-Based Image Retrieval, Facial recognition, and (c) Integrated Information (text and image/video) Retrieval. Multilingual Retrieval or/and Cross-Language Information Retrieval on multilingual texts, parallel texts, etc., must be also examined. The particularities of languages must be also examined. For example, Greek language has a rich inflectional system, and complex syntax that have to be examined when you conduct text retrieval in Greek text corpora.

To create an integrated mechanism/platform we could use Fuzzy techniques, and Lattice-Valued logic (Kaburlasos 2012). Especially, fuzzy inference (Kaburlasos and Kehagias 2014), fuzzy D-Implications (Hatzimichailidis et al. 2012), etc., can be used for expanding the traditional techniques of facial recognition, and can also be applied in the context of the Content-Based Image Retrieval, to search and access images of several thematic categories, e.g. collections of medical images (Papakostas et al. 2013; Kaburlasos et al. 2013a, b; Papadakis et al. 2012). Stemming, and other linguistic tools for Greek language can be incorporated into the mechanism (Karanikolas et al. 2012; Karanikolas 2013; Galiotou et al. 2013;

Karanikolas 2014). Indexing of Greek text can also be based on (Galiotou 2014; Galiotou et al. 2014). Expansion of IR techniques useful for applying into the mechanism include (Tsoukalas et al. 2013; Fragos et al. 2014). Examples of special purpose applications which can use an integrated approach for IR include Open Government Data (Galiotou and Fragkou 2013), Knowledge and Information in Nutrition (Karanikolas 2014a, b, c), Personal Digital Libraries (Karanikolas and Skourlas 2014), Text Assessment (Karanikolas, icininfo 2014a, b, c). It is worth mentioning the importance of ontologies for use in the integrated mechanism (Tsolakidis et al. 2014; Gkinos et al. 2014).

2. A Mechanism for Transparent Information transfer using intelligent agents

The mechanism can be based on the design and implementation of software applications using agents in distributed environments. To examine a case of prime research interest, we can focus on the transparent and secure communication in distributed medical environments. In this case, we have to examine applications in two directions: (a) End-to-end secure communication in ad hoc assistive medical environments using secure paths, (b) Providing advanced remote medical treatment services through pervasive environment. Finally, benchmarks of the applications in distributed environments have to be specified.

There are various research findings useful for the design of a mechanism for Transparent (medical) Information transfer. Belsis and Vassis (2012) use Wireless Sensor Networks to find solutions in Electronic Patient Records Management. Vassis et al. (2012a, b) study the case of an Ad Hoc-based ERP for medical treatment provision in Crisis conditions. Vassis et al. (2013a, b) study how to use agents in medical Ad Hoc networks. Belsis et al. (2014) discuss an agent based Architecture Benchmark. Wireless architectures for assistive environments in a different context (Mobile Learning) are also studied (Marinagi and Skourlas 2012) (Vassis et al. 2013a, b). New directions for pervasive computing in logistics are also examined (Marinagi et al. 2013)

The use of the mechanism for transparent information transfer could be combined with an integrated mechanism for information retrieval using lattice computing (Papakostas and Kaburlasos 2014) and (fuzzy) Interval Numbers (Kaburlasos et al. 2013a, b, FUZZ). Facial recognition schemes (Papakostas et al. 2013a, b) and speed emotion recognition (Anagnostopoulos and Skourlas 2014) could be useful for (medical) assistive environments, and especially in medical treatment provision in Crisis conditions. Ontologies and controlled vocabularies could be also used for several specific purpose environments (e.g., see Skourlas et al. 2014).

3. A Mechanism for secure medical information transfer in ad hoc networks

The mechanism can be based on software applications for secure medical information transfer which use a Wireless Distributed Framework. In this case, we have to examine: (a) design of a platform for information transfer in special purpose networks, (b) techniques of composing ad hoc and self-organized networks, (c) selection of

proper routing algorithms according to the special characteristics of the distributed environments, and (d) adaptation and expansion of existing security models for supporting the non-existence of centralized administration of ad hoc networks.

There are various research findings useful for the design of a mechanism for secure medical information transfer in ad hoc networks. Vassis et al. (PCI' 2012) study secure management of medical data in Wireless Environments. Belsis et al. (2011) also study the secure management of electronic healthcare records in wireless environments. Belsis et al. (2013) describe a Wireless System for Secure Electronic Healthcare Records Management. Zafeiris et al. (2013) study flow mobility across different devices. Belsis et al. (2014a, b) describe an integrated architecture for Medical Services Provision. In a different context (learning environments), Belsis et al. (PCI' 2012), Marinagi and Skourlas (2013), and Marinagi et al. (2013a, b) study Secure Wireless Infrastructures for Mobile Learning, Blended Learning, and assistive environments in Higher Education. Andrikopoulos and Belsis (2012) propose solutions for effective organization of medical data. Formal concepts (Kaburlasos et al. 2014) could be interpreted as descriptive decision-making knowledge (rules) induced from the data. Formal concept analysis can be applied for modeling and redesigning the medical processes.

4. Networked collaborative SVM-based classification for supporting diagnosis

The mechanism can be based on a software application for supporting diagnosis. Such an application (tool) can be based on the neural network techniques of the SVM (Support Vector Machines) type that are popular today.

Vassis et al. (AIP 2014) conduct a comprehensive review of the use of neural networks and SVMs for automatic medical diagnosis. Vassis et al. (IEEE MILCOM 2014) study Video Sessions over Ad Hoc Networks Using Neural Classifiers. Kampouraki et al. (2013) describe e-Doctor, a Web Based Support Vector Machine for Automatic Medical Diagnosis. Such a tool based on neural networks, and techniques for networked services can be used by doctors and medical staff to help decision support by conducting classification, recognition, etc., and it is an essential part of the diagnosis system. Christopoulou et al. (2014) study Sharing Knowledge and Integrated Information in Therapeutic Radiological Physics. Communities of Practice (CoPs) can be seen as a strategy for sharing medical information/knowledge, and supporting collaborative work.

Conclusions

Secure Retrieval and Dissemination of Information (text and image) in Distributed and Wireless specific purpose Environments (SECRET_DIDWE) is a framework aiming at the design of an integrated e-Health service that will enable the automated collection, processing (mining), delivery, adaptation, personalization and exchange of medical content. Although SECRET_DIDWE is basically about the effective use

of ICTs in e-Health, it can make contributions to several research fields: text retrieval, CBIR, Personalization, Fuzzy Systems (INs, etc.), facial recognition, secure and transparent information transfer using intelligent agents, secure dissemination of electronic healthcare, neural networks for supporting diagnosis, mobile computing, etc.

Therefore, the described framework establishes a theoretical foundation, and conveys development experiences based on pilot systems/research tools. In the future, we should work for an end product based on the SECRET_DIDWE framework. Such a product targets a growing number of doctors/nurses in the hospital environment that use web and mobile applications to access information relevant to their patients. As such, the SECRET_DIDWE based product is expected to be useful in the promotion and dissemination of e-services. Although we will focus on an e-Health service it will be applicable to any other similar e-service.

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The Design of a Knowledge Base for the Prevention of Bullying in Elementary School

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and Eleni Galiotou

Abstract Bullying among students is a major problem having serious physical and psychological implications all over the world. Research results indicate that both perpetrators and their victims display problematic behavior in school and they have difficulties to cope with their classmates. Many researchers analyze the reasons behind bullying in school environments and try to provide solutions to this problem. In order to decrease aggressive behavior among school students, we suggest that it is crucial that the schools and the families of the children create a relationship to help all the students to shape good personalities. We propose the cooperation of teachers and families, and the use of a fully supervised safety and prevention system which, with the help of Information Technology, will provide knowledge of such situations and help to gradually weaken them. In this work, we describe the design of a pilot monitoring system for one elementary school. Having recorded the potential risks to a child in the school environment, we design a knowledge base that is intended to alert for the events taking place in the schools' space and calculate the level of risk for each of them. For the easier update of the events in the knowledge base, we created an easy-to-use interface that appeals even to ordinary users.

Keywords Bullying · Surveillance system · Knowledge extraction · Knowledge base

Introduction

It is well known that, many children face daily violence, physical or psychological, exploitation, harassment, dangerous emotional states, and many other forms of risk, leading to feared situations inside and outside the school premises. The phenomenon of bullying has taken dimensions beyond the past and is now a major

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issue. The suicide rates in increasingly younger ages are rising and the chance of abduction of underage children for exposure and marketing, continues to frighten. We believe that there is now an urgent need for the supervised use (by parents, teachers and students) of a knowledge and database system based on the new technology, which will provide for such bullying situations and help in the gradual weakening them, and ensure the safety of students and the prevention of risks. In this work, we focus on a monitoring system for students in elementary school. Based on a prototyping knowledge and database system, we record potential risks for students in the elementary school environment. This system is intended to alert. “Buzzers” (actions) are also triggered by the events taking place in the school space, and the system calculates the level of risk for each event.

In the next section, we present and discuss a framework for the proposed Surveillance system. Furthermore, we discuss certain research findings in the bibliography which are applicable to our proposed framework. Then, we present our prototype of a surveillance system for preventing bullying in an elementary school. Finally, we mention the conclusions and the contribution of our work.

A Framework for the Prevention of Bullying in Elementary Schools

In this section, we present a framework for the prevention of bullying in elementary schools as it is depicted in Fig. 1. The center of the framework consists of the Surveillance system, which is an Information system that comprises (a) an organizational structure, (b) the means used (Data, e.g., sensitive data; Hardware, e.g., video cameras, sensors; and Software, e.g., database management system, information retrieval system), (c) Operations, Functions, Procedures supported/conducted by the surveillance system, and (d) People and roles involved, e.g., computer specialist, schools’ keepers, security guards and psychologists. The framework also includes the following inter-related components:

- (1) School: The surveillance system supports a strategy of preventing bullying in schools, facilitates management and supports decisions, ensures security and privacy, and contributes to the process of handling events. A knowledge base is created and maintained where cases/events, and the way of handling them, are stored. The organizational memory stores the experience, knowledge, and skills acquired over the years.
- (2) Knowledge is seen as an asset for the prevention of bullying in schools, and is incorporated into the proposed surveillance system. In Fig. 1, a knowledge management approach is depicted for transforming data and information into knowledge. It is worth mentioning two types of knowledge involved: tacit- and explicit knowledge.

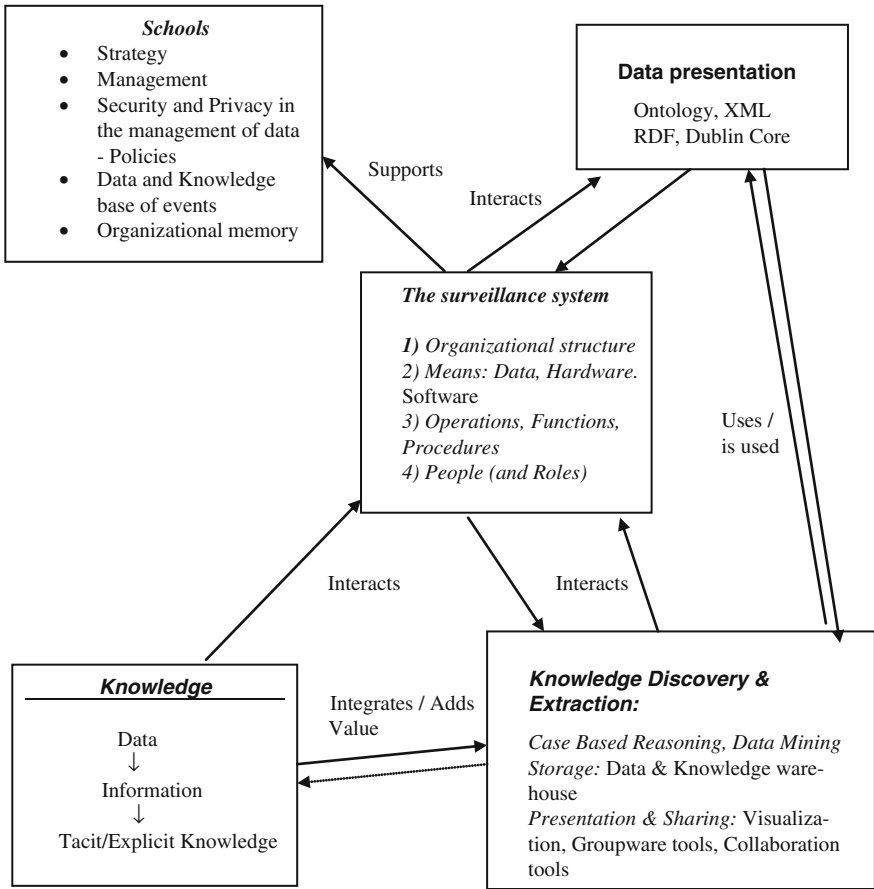


Fig. 1 The role of the surveillance system for preventing bullying in elementary schools

- (3) Knowledge discovery and extraction. This component of the framework includes the essential methods and techniques, and tools for supporting the surveillance system. Case-based reasoning is the vehicle for accessing events/cases of interest, data mining forms the basis for the discovery and the extraction of knowledge, visual tools are used for transforming information into knowledge, and knowledge codification converts tacit knowledge to explicit knowledge. Groupware tools and collaboration tools are used to build the knowledge base.
- (4) Data presentation. This component supports the process of organizing, storing, indexing, and accessing the explicit knowledge. Ontologies, XML, RDF, and Dublin Core are supported.

A Further Discussion of the Framework

In order to clarify certain aspects of the components of the framework, we present some research findings which could be used in order to implement operations, functions and procedures of an integrated surveillance system for preventing bullying in schools.

Hogenboom et al. (2011) conducted a literature survey to review text mining techniques used for event extraction. They also provide guidelines on how to choose an event extraction technique. Nishihara et al. (2009) focus on the extraction of personal experiences from blogs. They describe events by means of three keywords: place, object, and action. Atefeh and Khreich (2015) provide a survey of techniques for event detection from Twitter streams. These techniques are classified “according to the event type, detection task, and detection method,” and present common features. There is a similarity of the data of tweets with the verbal descriptions of the events, and the dialogs between victims, and victimizers that are recorded by the surveillance system. Therefore, it is a challenge to classify the known detection techniques for streams of verbal descriptions or dialogs, for prevention of bullying. SanMiguel et al. (2009) propose the use of ontology for representing the prior knowledge related to video event analysis. They consider that there are two types of knowledge that are related to the application domain and the analysis system. Relevant information is described in terms of scene-related entities (Object, Event, and Context), and system-related entities (Capabilities, Reactions).

Klauza et al. (2014) describe how they handle air traffic data coming from ADS-B (Automatic Dependent Surveillance Broadcast) receivers, using the WEB 3.0—Semantic Web principles. Integrated information is expressed in RDF (Resources Description Format). Their approach is of particular interest to our research.

Functions and Features of the Prototype System

The problem of the prevention of bullying in elementary schools is a complex one. In this section, we focus on a simpler surveillance system, and on a data and knowledge base of events. A prototype system will be used for analyzing how to prevent bullying at the level of one elementary school. The rationale for this choice is that we want to gain some experience and study the problem, and our solution at the level of a school. Even in these simpler cases there are serious problems to be solved and answers to be given

- (1) The operation of the video surveillance systems at the public space.
- (2) The problem of the supervision of the school space in real time.
- (3) How to store events? How to rate events?
- (4) Compulsory deletion of data at regular intervals.
- (5) Evaluation of the system.

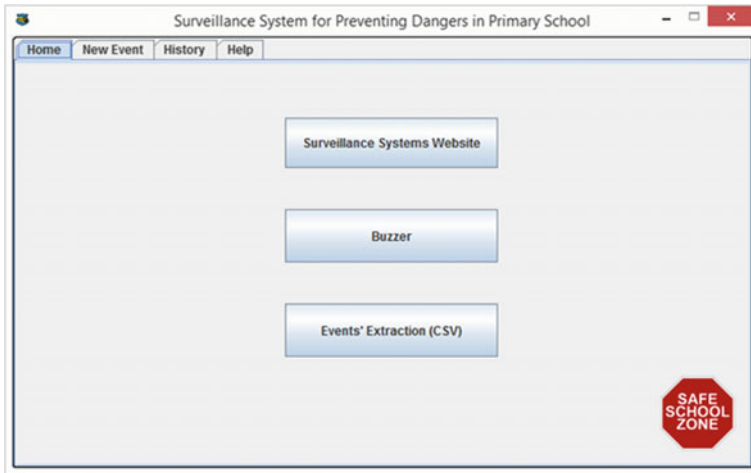


Fig. 2 The pilot surveillance system for preventing dangers in primary school: buzzers for handling motion events, and event extraction from the knowledge base

The pilot system, under development, is based on the recording of sound and image in real time. This is achieved through cameras installed at different points of the school space. The controller monitors what takes place through the images sent by the cameras in real time. If there is any suspicious movement or some incident that needs immediate attention, the “controller” records the incident into the base through the interface. Thus, the system alerts the “officer” responsible for the respective site, to address the incident.

In any case, the data obtained from the cameras, must be deleted the next working day, and no later than 15 days unless there is any problem of legal order.

Figure 2 depicts the pilot surveillance system for preventing dangers in one primary school. It is a website supporting two main operations: Buzzers (actions) for handling motion events, and events extraction from the knowledge base. When motion detection occurs on the typical surveillance systems then an alarm/buzzer sounds. In our case, the detection of suspicious activity by the surveillance system will trigger the alarm buzzer (actions) to inform security guards, etc., for the event. The detection alarm buzzers in our surveillance system can be configured to record the motion event which is detected in a security camera attached to the system. Event extraction is based on the description of events stored in the data and knowledge base.

Contribution and Conclusions

In this section, we outline the main contribution of our work, and some conclusions:

1. Frequent potential risks that children are exposed to, in a primary school were identified.

2. We studied how to record the characteristic-features that describe an event, and how such information should be stored into the base.
3. We created a pilot knowledge and database.
4. We implemented a risk calculation algorithm.
5. We studied how to use the algorithm for any additional input information (facial, gesture, movement, or words).
6. We developed an interactive interface to the base.
7. We created procedures for the important processes carried out by the system and the base (such as adding a new event, how to inform the officer responsible for the respective space for the event, to take care, etc.).
8. We implemented a website for the system that contains information about events and school employees.
9. We studied the operation of the interface and created links within the site of the system as added controls where necessary.
10. We studied the system and subsystems and we found ways to future evolution in real conditions.

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Information Technology Literacy for Deaf and Hard of Hearing Students in Higher Education

Catherine Marinagi, Christos Skourlas and Anastasios Tsolakidis

Abstract The demand for employment in specific computing fields is high, during the last years. However, the deaf and hard of hearing (DHH) persons are significantly underrepresented. In this paper, we study methods for increasing the participation of DHH students in computing fields, in order to provide them equal opportunities with normal students. We focus on the following two key research questions: What is an appropriate inclusive curriculum in Higher Education for supporting DHH students studying information technology? What kind of assistive technology resources (e.g., vocabularies in Sign Language) should be embedded in the curriculum, and how DHH students can be enabled to access and use such resources? A systematic review of the literature is conducted, and the design of an introductory academic course on information technology literacy for DHH students is examined.

Keywords Deaf and Hard of Hearing · Information Technology literacy

Introduction

Many researchers focused on the specialized needs of Deaf/Hard of Hearing (DHH) students attending public secondary schools. They noted that the learning needs of such DHH students are not often addressed, and this fact has serious implications when they attend in the tertiary education, and later, in the workplace. Luft and Huff (2011) consider that the specialized needs of DHH students attending public secondary schools “are less likely to be addressed.” They found that “the

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students had substantial transition competence deficits and that none reached the recommended competence levels on more than 4 of the 6 subtests.”

Many researchers also studied the participation of the DHH students in academic courses, and the representation of DHH graduates in careers. Two key research questions were posed: What are the prerequisites for the DHH students to be competitive in their academic programs? What are the prerequisites for the DHH worker to be competitive in the workplace? Burgstahler and Ladner (2006) conclude that “Although demand for workers in specific computing fields continues to be high, individuals with disabilities are significantly underrepresented in both postsecondary academic programs and careers in these areas.” Luft et al. (2009) consider that the prerequisite for DHH students to be competitive in the workplace is that they must possess basic computer literacy, and, know “how to use and care for personal assistive and listening technology.” They have conducted a research among 45 DHH students in secondary schools and found that “the students’ computer skills (are) depended on their access to technology.” They, also, concluded that many students did not know “how to access or use personal assistive technology.” The students that are familiar with computer literacy (and, also, specialized uses of computers) and have technology skills, they have personal access to computers and assistive technology, not necessarily at school.

There is a serious problem to be addressed in the case of the DHH students: Poor vocabulary! Luckner and Cooke (2010) noted the importance of vocabulary “for communicating, reading, thinking, and learning.” Based on the review of 41 research studies, they concluded that DHH students “demonstrate vocabulary knowledge that is quantitatively reduced.” Sarchet et al. (2014) examined the vocabulary knowledge of DHH postsecondary students and found that “hearing college students demonstrated significantly larger vocabularies than DHH students.”

There are also other serious problems to be addressed in the case of the DHH students: Grammar and syntax! Various resources and tools of assistive technology can be used to support the DHH students to understand the oral presentations, and the educational documents—written text—in order to cover their learning needs in Higher Education. Examples of resources are general purpose bilingual dictionaries (e.g., in English, and British Sign Language), multilingual dictionaries of terms (e.g., in English, and British Sign Language, and American Sign Language), specialized software (e.g., text-to-speech and speech to text).

We must stress that the use of Sign Language is the vehicle to support DHH persons and improve their knowledge. For example, Cannon et al. (2011) conducted a research among 26 students, who use American Sign Language (ASL), and they concluded that “computer software grammar instruction program, used as an individualized classroom activity, would influence the comprehension of morphosyntax structures (determiners, tense, and complementizers).”

An important intermediary for supporting DHH students is the operation of Communities of Practice (CoP). For example, “The Alliance for Access to Computing Careers” (AccessComputing 2015), which has been supported since 2006 by the National Science Foundation, aims to identify and promote practices

for “increasing the participation of people with disabilities in computing fields.” AccessComputing hosts many CoPs, e.g., Blind and Low Vision CoP, Deaf and Hard of Hearing CoP, and Disability Services CoP. They provide an online knowledge base containing question and answers, case studies, and promising practices.

In this paper, we study methods for increasing the participation of DHH people in computing fields. We believe that if the DHH students of secondary schools want to attend academic courses in computing fields, they must be familiar with information and computer literacy, and have technology skills. In the case that they have personal access to computers and assistive technology, they are more competitive during their studies in Higher Education.

Our study focuses on key questions related to what is a core introductory curriculum for introducing computing for DHH students, in the framework of the Greek Higher Education, what are other resources of assistive technology, e.g., vocabularies in Greek Sign Language, and how DHH students can access and use personal assistive technology.

Toward a Course for Computer Literacy

The scope of an information technology literacy course is to provide the basic introductory knowledge of information technology, making DHH students both computer and information literate. We aim to develop an inclusive curriculum for DHH students, where educational material can be accompanied by videos in Greek Sign Language, enabling the personalized access of DHH students (Marinagi and Skourlas 2013). Moreover, the course includes a separate laboratory sessions, which aims to provide students with the appropriate computer skills.

There are no prerequisites for course attendance. The DHH student who completes the course is expected to develop an understanding of the basic concepts of information technology and the role of information technology and its use to support decision making process for real-world problems. Through the laboratory sessions of the course, DHH students who receive a first exposure to computers can take the opportunity to develop a wide range of practical skills. The course prepares DHH students to attend advanced courses on informatics.

In the following, we give a description of the major topics covered by the theoretical part of the course, including the goal of each topic:

Topic 1. Introduction to the field of information technology and its application

Goal: Explain the importance of information technology for individuals and industry and how students can become information and computer literate

Topic 2. Data representation and Numbering systems

Goal: Describe how data is represented in computers and perform numbering systems conversions

Topic 3. Introduction to Hardware

Goal: Explain the role of hardware, describe hardware components and input/output devices for disabled persons

Topic 4. Introduction to computer networks

Goal: Describe network components, explain the role of protocols, and other network technology issues

Topic 5. Internet

Goal: Identify the Internet services, analyze an IP address, explain how to connect and access to the Internet, and explain the purpose of World Wide Web

Topic 6. Introduction to Operating systems (OS)

Goal: Describe the types of OS and the principle functions of OS. Explain the role of system software.

Topic 7. Information security

Goal: Identify security terminology, describe the types of threats, and the methods for keeping computers safe and secure, recognize the ethical/legal issues.

Topic 8. Applications software

Goal: Explain the role of the various categories of application software

Topic 9. Introduction to DataBases

Goal: Understand the basics of database management systems (DBMS) and current Database technology. Explain the role of DBMS in the New economy

Topic 10. Introduction to programming

Goal: Understand the principle of programming and explain the features of the various categories of programming languages.

When designing the laboratory sessions, we have taken into account that DHH students have a difficulty in keeping an eye on the teacher in parallel with executing the instructions. Every project includes detailed written instructions and icons that facilitate execution. In the following, we give the goals of the laboratory sessions of the course:

Laboratory session 1: Familiarization with PC units

Goal: Recognize and become familiar with the PC units and their usage

Laboratory session 2: Operating system

Goal: Describe the basic operations of an operating system and how to install useful applications. Explain how to personalize the graphical environment.

Laboratory session 3: Internet and Web browsers

Goal: Access Internet using Web browsers, use Internet services

Laboratory session 4: Email, teleconferencing, online file, and document storage

Goal: Create and use email accounts, use teleconference applications, store documents online, and access them from everywhere

Laboratory session 5-6-7: Word processing

Goal: Compose, edit and revise a document using a word processing tool

Laboratory session 8-9-10: Spreadsheets

Goal: Manipulate, organize, filter, and analyze data using a spreadsheets tool

Laboratory session 11: Computer maintenance and security

Goal: Use tools to maintain and protect computers

Laboratory session 12: Electronic Presentations

Goal: Prepare a presentation using a presentation tool

Use of Assistive Technology—Resources and Tools

In this section, we focus on tools for assistive learning in Greece for deaf and blind students. The case of the Greek assistive technology products is presented and discussed. We focus on products and technologies we use for enhancing learning of our disabled students.

The Institute for Language and Speech Processing (ILSP) of the “Athena” research center, is a Greek R&D organisation in the area of Language Technologies. Among else, ILSP’s research agenda includes Sign Language Technologies, and Technology-Enhanced Language Learning for disabled students. Knowledge-intensive companies have been set up by ILSP aiming “at the diffusion of ILSP research results in commercial applications” (<http://www.ilsp.gr/>). The ILSP offers bilingual tools and dictionaries e.g., NOEMA, multilingual terminology teaching tools, e.g., DIOLKOS, special interfaces for vision/hearing impaired people. The ILSP also offers applications for business, offices and telecommunications.

In the following, we present the ILSP’s products we use for enhancing learning, and support disabled students:

DIOLKOS is a bilingual/multilingual terminology teaching tool for supporting computer literacy for disabled students. Disabled students are supported by terminology in Greek Sign Language (GSL), thematic search, and trilingual matching of terms (GSL, English, Greek) (<http://www.ilsp.gr/el/services-products/products/item/1-langtechn/20-diolkos>). DIOLKOS forms a basis for training of the students, and includes seven modules: (1) Basic concepts of Information Technology, (2) File management (windows), (3) Word processing (word), (4) Spreadsheets (excel), (5) Databases (Access), (6) Presentations (Powerpoint), and (7) Internet and World Wide Web.

NOEMA is the first electronic dictionary of GSL. It contains 3.000 video recorded signs with their Modern Greek translations. The dictionary also provides for lemma classification according to semantic categories. Users can: (a) select the hand shape(s) from a table, (b) observe groups of related signs and select, and (c) select from alphabetic ordering of sign translations in Modern Greek. (<http://www.ilsp.gr/en/services-products/products/item/1-langtechn/2-noema>).

HLEKTRONIKOS LOGOGRAFOS (series of) products (<http://www.logografos-international.eu/>) use speech recognition technology, to convert continuous speech to text. Dictation in Greek, British, and American English is supported. The disabled students can dictate the text, insert punctuation phonetically, and use formatting tools. The produced text can be text mail, article, diary, etc. There is built-in dictionary of 675.000 words, where the disabled students can add

new words, expressions, and abbreviations in the dictionary, both manually and automatically from existing documents. HLEKTRONIKOS LOGOGRAFOS offers the disabled students the possibility to work with Microsoft Word. Disabled students can control the software from the keyboard buttons with audible confirmation. It is a user-friendly environment including 250 voice commands. There are four products: HLEKTRONIKOS LOGOGRAFOS, LEGAL HLEKTRONIKOS LOGOGRAFOS, MEDICAL HLEKTRONIKOS LOGOGRAFOS, and GREEK-ENGLISH HLEKTRONIKOS LOGOGRAFOS.

VIDEO PHONETIC SEARCH converts continuous speech to text, and can detect and extract large sound or video snapshots. The disabled student can enter keywords or phrases and the Video Phonetic Search searches the entire record and shows the relevant snapshots. They can work with Greek, British, and American English. Video Phonetic Search supports the following formats: wav, wmv, wma, mp3, mpg, asf, avi.

Text-to-speech services and tools offered by ILSP-innoetics, and focus on accessibility enhancement. The innoetics TTS Multimedia supports the needs of applications we develop to be able to talk back to the disabled students. The TTS Multimedia uses speech synthesis technology, and offer various programming interfaces, e.g., SAPI 5. Innoetics supports Greek and Bulgarian, and soon English. Moreover, disabled students can develop applications speaking for themselves!

Conclusions and Future Work

The employment of the DHH graduates in the computing fields is not high. They are significantly underrepresented in both postsecondary academic programs and careers in the computing fields.

In this paper, we consider that there are two prerequisites-challenges for increasing the participation of DHH students in computing fields, in order to provide them equal opportunities with normal students: (a) an appropriate inclusive curriculum, and (b) availability of the appropriate assistive technology resources. It worth mentioning that assistive technology resources have to be embedded in the curriculum, and the DHH students must be encouraged to access and use the resources. Therefore, we propose an introductory academic course on information technology literacy for DHH students. Then, we discuss the assistive technology we use for enhancing learning of disabled students.

Our goal for the future is to develop a strategy for supporting learning of the disabled students. It seems that communities of practice should form a framework for such a strategy, since there is a rising interest during the last decade.

Acknowledgments This research has been co-funded by the European Union (Social Fund) and Greek national resources under the framework of the “Archimedes III: Funding of Research Groups in TEI of Athens” project of the “Education and Lifelong Learning” Operational Programme.

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A Framework for Communities of Practice in Radiotherapy

Petros Belsis, Argyroula Christopouloy, Christos Skourlas
and Anastasios Tsolakidis

Abstract This paper focuses on the Communities of Practice (CoPs) which is seen as a specific knowledge management strategy. We examine how and why CoPs are established in radiotherapy. Based on experience in the radiotherapy practice we discuss a conceptual framework for the assessment of CoPs in radiotherapy.

Keywords Radiotherapy · Communities of Practice

Introduction

The interest for CoPs has risen for several years, and a growing number of people and organizations in various sectors believe that CoPs is a key to improving their performance (Wenger 2011). Wenger et al. (2002) define CoP as “a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis.” Li et al. (2009) underline that CoPs were initially described by several authors “as a type of informal learning organization,” however, the focus changed in 2002 and CoPs were applied as “a managerial tool for improving an organization’s competitiveness.” Bertone et al. consider that “CoPs represent a potentially valuable tool for producing and sharing explicit knowledge, as well as tacit knowledge and implementation practices.” The authors state the community of practice (CoP) as a specific knowledge management strategy.

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A Framework for Knowledge Sharing for CoPs in Radiotherapy

de Moor and Weigand (2007) consider that CoPs could be defined as “a group of people who share social interactions, social ties, and a common ”space”; as a social network of relationships that provide sociability support, information, and a sense of belonging, and as a set of relationships where people interact socially for mutual benefit.” They believe that the only difference of virtual CoPs from other CoPs is that the common “space” of the virtual CoPs is cyberspace. Then, the authors examine the Virtual communities as complex social systems enabled by a complex set of information technologies. de Moor and Weigand (2007) finally present a formal method to support user-driven specifications of CoPs. It is of prime interest for our study that, they use the case study of an electronic journal (“Electronic Journal of Comparative Law”) to validate their method.

Based on this research work, we also consider that, (a) electronic journals could be seen as Virtual CoPs “which focus on scholarly communication in the form of e-journal publication,” and (b) e-journal-based communities could be classified as communities of practice, “which are institutionalized, informal networks of professionals managing domains of knowledge,” and form a model for several CoPs.

Therefore, a CoPs in radiotherapy could be defined as an electronic journal-based community focusing on several topics, e.g., collaboration of medical physicists and radiation oncology physicians to specify the treatment plans, treatment planning, and processing of complex image data of patients, dose calculation for radiotherapy, quality assurance of the radiotherapy equipment, audit, and check of the compliance with health and safety legislation, radiation detection advice, periodic reports of secure/safe operation of the equipment, new/improved treatments, new equipment, learning and medical students, learning, and new medical physicists.

The community is characterized “by evolving governance structures,” and the need for editorial roles. Around the community, members of different roles, e.g., editors, reviewers, authors, and team members interact, and support publication and learning.

We know that there is an evolution of the journal titles, e.g., titles are merged, or split. Therefore, communities change over years to cover new needs.

We could follow an approach similar to the proposed by de Moor and Weigand (2007), to form the CoP (the electronic journal) in radiotherapy. So we could follow some distinct successive steps:

- (1) Set up of the initial system. A project team is formed to establish the initial system. It is important, to include representatives of stakeholders, e.g., oncologists, medical physicists, therapists, IT specialists.
- (2) Dissemination of information related to the community. For example, we can organize open conference(s) through the website of the community. The material could be organized as conferences’ papers, printable guidelines,

recorded oral presentations, mailing lists of experts, etc. Online and offline conferences could be organized in the framework of the CoP to promote the website and the CoP in radiotherapy.

- (3) Internal growth by increasing the content. Quality of content (e.g., useful and interesting material, tutorials, advises, case-based material, guidelines) is the essential prerequisite for success.
- (4) External growth by: (a) Building up a network of contacts (b) establishing connections with other CoPs, other related initiatives, and potential partners for cooperation.

Sample of Content

In this section, we present a sample of the content by using the example of the treatment planning of a patient. This sample can be used by the members of the CoP in radiotherapy to interact, improve treatment, and improve learning. To understand better the sample material, we briefly describe a case, and a non-approved treatment planning. The sample, must be reviewed by the integrated team, for possible approval, corrections, or rejection.

We assume that the members of an integrated team including oncologists, medical physicists, therapists, etc. want to review the treatment planning of a case before to start radiotherapy. The patient had a CT scan. Then, the CT slices were transferred to the treatment planning system (TPS) for making a plan for radiotherapy of the patient.

At the first phase, we irradiated the upper part of the target structure with two lateral fields. The lower part of the target was irradiated with two fields, an anterior and a posterior. At the second phase (see Fig. 3, plan “Couch”) we used a smaller field size and a couch rotation in order to avoid the irradiation of the spinal cord (OAR—Organ at Risk).

Figure 1 depicts Plan “PTVUP” and it includes: (a) the Digitally Reconstructed Radiograph (DRR), and (b) one CT slice, at the first phase. The upper part of the target is illustrated. “DRR is an image calculated from patient images (typically a CT set) that looks like a diagnostic or megavoltage field obtained for the same geometry of beam and patient” (IAEA). The DRR in Fig. 1 is a left lateral view. You can see the field of radiation that covers the target structure (PTV—Planning Target Volume) and the blocked areas in order to protect OARs. In the CT slice you can see the axes of the radiation beams. We have two beams, a right lateral and a left lateral.

Figure 2 depicts Plan “PTVLOW” and it includes: (a) the Digitally Reconstructed Radiograph (DRR), and (b) one CT slice, at the first phase. The lower part of the target is illustrated. The DRR is an anterior view. You can see the field of radiation that covers the target structure (PTV—Planning Target Volume)

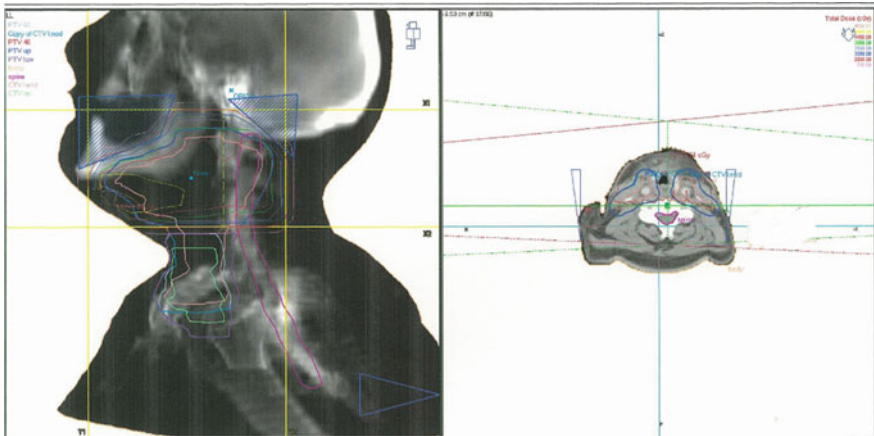


Fig. 1 Plan “PTVUP”. First phase—upper part of the target

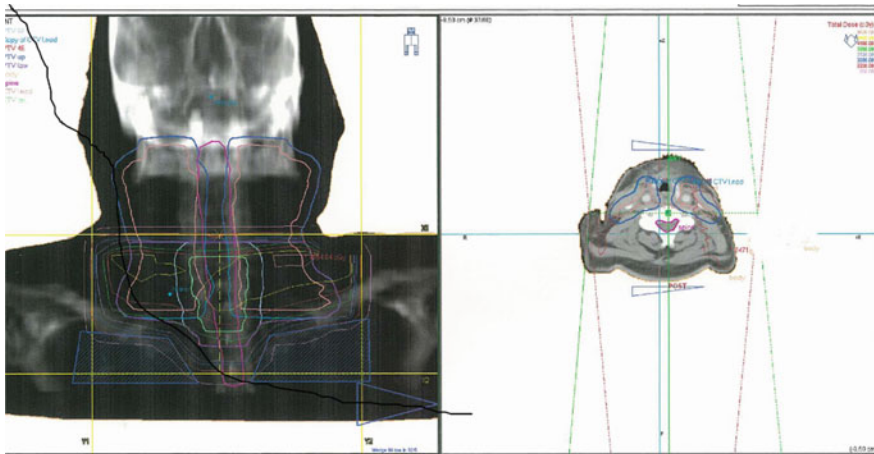


Fig. 2 Plan “PTVLOW”. First phase—lower part of the target

and the blocked areas in order to protect OARs. In the CT slice you can see the axes of the radiation beams. We use two beams, an anterior and a posterior.

Figure 3 depicts Plan “Couch” and it includes: (a) the Digitally Reconstructed Radiograph (DRR), and (b) one CT slice, at the second phase. The DRR is a left lateral view. You can see that the field of radiation is limited in order to avoid irradiating the spinal cord over an accepted limit of dose. The field covers the Clinical Target Volume (CTV). In the CT slice you can see the axes of the radiation beams. We have two beams, a right lateral and a left lateral.

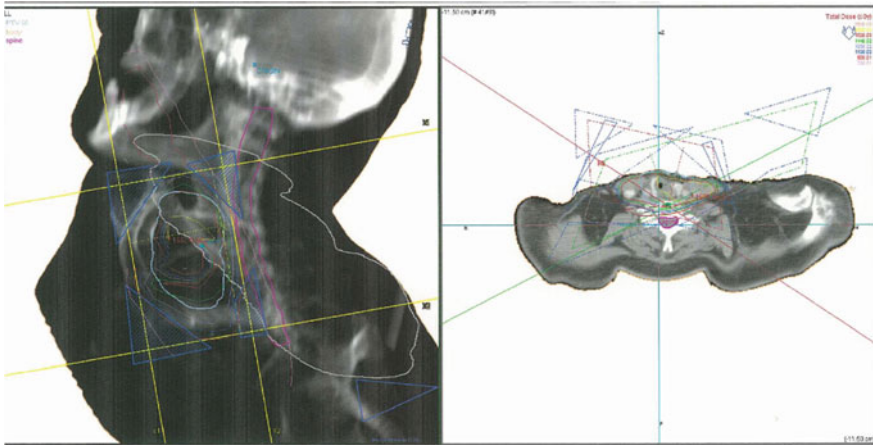


Fig. 3 Plan “Couch”. Second phase

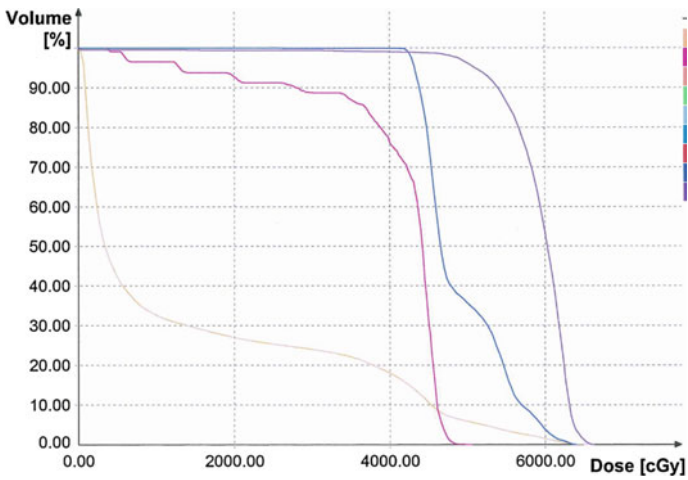


Fig. 4 Dose volume histogram (DVH)

Figure 4 depicts the dose volume histogram (DVH). It is a histogram showing the volume of the structure that receives at least the specified dose. The DVH includes the summation of the three plans that were used for this case.

Conclusions—Future Activities

Christopoulou et al. (2014) present a framework for Sharing Knowledge and Integrated Information in Radiotherapy (SKIIR) for medical physicists involved in Therapeutic Radiological Physics. This research work tries to go further, and extend the SKIIR framework. Based on the research works and the conclusions presented so far, we can specify a systematic framework for the creation of CoPs in radiotherapy. Some important conclusions are the following:

- (a) The use of a centralized organizational structure is good enough for knowledge sharing among the professional groups in the level of a hospital unit, but it is not the appropriate one for knowledge sharing within and across health organizations. Social Networking could form a basis for CoPs, and Virtual CoPs.
- (b) The framework can involve various professionals, e.g., oncologists, medical physicists, nurses, radiation therapists, and several departments, e.g., radiotherapy department, department of medical physics, and
- (c) The informal meetings, and social networking could be used as important means to support boundary knowledge transfer.
- (d) Open (online/offline) conferences through the website of the CoP could support the promotion of the CoP.

A critical issue for future research is related to the relationship between organizations and CoPs (Gagnon 2011; Bezyak et al. 2014).

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Integration of Descriptive and Spatial Data to Rank Public Buildings According to Their Exposure to Landslide Hazard

Paolino Di Felice

Abstract Landslides are a serious problem for humans and assets in many parts of Europe. A large number of journal papers are devoted to quantify the risk induced by landslides. Once an area where a landslide hazard exists is identified, then it is necessary to select the buildings at risk exposed. This work proposes a general method that ranks the buildings according to the degree of exposure to the landslide hazard. The relevance of the proposed method increases as the extension of the territory becomes large. The method integrates both descriptive and spatial data.

Keywords Landslide · Hazard · Element at risk · Building ranking

Preliminary Considerations

In a recent study published by Legambiente (2014) we learn that 81.2 % of Italian municipalities are at risk of geo-hydrological instability exposed, with nearly 6 million people who live in areas of high geo-hydrological hazard, and with 61.5 billion euro spent between 1944 and 2012 only for the damage caused by natural extreme events. The Italian territory was hit by 12,075 landslides, in the period 1991–2001 (Table 1).

The work by Guzzetti et al. (2005) confirms that the landslide hazard is widespread in Italy.

Two surveys, conducted (in 2012 and 2013) to investigate the perception of landslide and flood risk in Italy, revealed that citizens considered the inappropriate land management as the main cause of landslide and flood risk in the country, followed by illegal construction, abandonment of the territory, and climate change (Salvati et al. 2014).

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Table 1 Landslides events occurred in Italy from 1991 to 2001 (Legambiente 2006)

Year	Landslides (#)	Year	Landslides (#)
2001	322	1995	744
2000	1177	1994	692
1999	700	1993	557
1998	1671	1992	780
1997	2455	1991	705
1996	2272		

The workflow for the quantification of the risk from natural events consists of the following stages, to be carried out in sequence: (a) choice of the reference geographical area => (b) hazards identification (landslides in this study) => (c) identification of the elements at risk (the target of our paper) => (d) value of risk elements => (e) elements damage estimation.

A relevant category of elements at risk exposed is represented by the public buildings for their intrinsic value, but also because their damage may cause human casualties as well. That is why in the present paper we refer to public buildings.

According to the above workflow, before being able to applying any quantitative method for the estimation of buildings' damage which could be caused by some natural trigger, we must have identified the elements at risk exposed. If the survey covers a large territory, usually the number of public buildings potentially involved is very high. For example, in Italy there are 72,355 schools located in 43,643 distinct buildings, while the total number of public buildings is much larger. To speed up the methods of building damage assessment, a preprocessing must be carried out by which limit the calculation to a subset of the totality of the existing public buildings, subset to be chosen according to some filtering criterion.

The present paper introduces a method that ranks the public buildings in a given territory according to their degree of exposure to the landslide hazard. Such a method implements the third stage of the above workflow (i.e., the identification of the elements at risk). The key feature of the proposed method is that it integrates descriptive and spatial data. There are multiple problems of extraordinary social relevance to which we can give an effective solution by means of software tools only by integrating cleverly descriptive and spatial data.

In the remaining part of the paper, first we introduce few notations, then a method suitable to compute the ranking of buildings is presented.

Notations

Hereafter we use the following notations.

GeoArea is a portion of land exposed to a hazard caused by a prolonged and heavy period of rainfall;

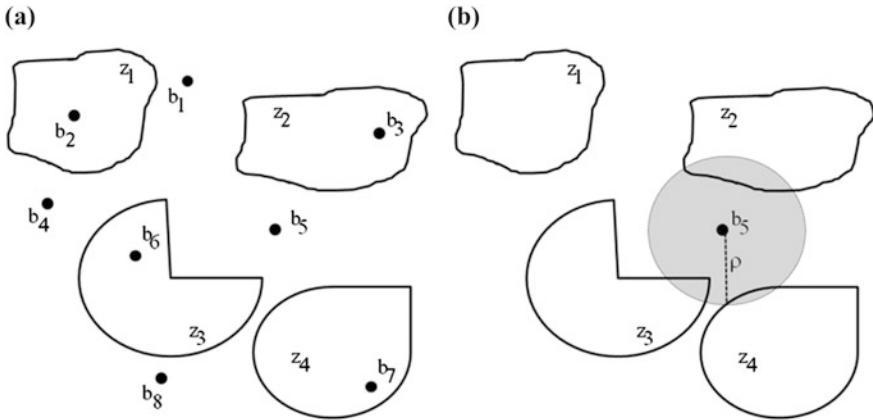


Fig. 1 $\mathbf{a} B = \{b_1, \dots, b_8\}$ and $SZ = \{z_1, \dots, z_4\}$. $\mathbf{b} SZ_i = \{z_2, z_3\}$ with regard to building b_5 and a fixed value of radius ρ . Buildings are denoted by their centroid (the *small circle*)

$SZ = \{z_k (k = 1, 2, \dots) \mid z_k \text{ is a susceptibility zone}\}$. By susceptibility zone we mean a portion of land characterized by a set of ground conditions. Sz_k is a numerical value that quantifies the likelihood that z_k produces landslides;

$B = \{b_i (i = 1, 2, \dots) \mid b_i \text{ denotes a generic building contained inside the boundary of GeoArea}\}$. In the following, it is supposed to be known the geographical position of b_i , expressed as a pair of coordinates. Exp_{b_i} is a positive numeric value that denotes the degree of exposure of b_i to the landslide hazard caused by *all* the z_k in SZ ; while $Exp_{b_{i,k}}$ denotes the degree of exposure of b_i to the hazard caused by zone z_k ;

$SZ_i = \{z_k \mid z_k \in SZ \text{ and } (z_k \cap \text{buffer of radius } \rho \text{ centered on } b_i) \neq \emptyset\}$. ρ denotes the distance from building b_i beyond which the zone z_k does not contribute significantly to increasing the value of $Exp_{b_{i,k}}$.

Figure 1 illustrates the notations.

Building Ranking

From a conceptual point of view, the value of Exp_{b_i} is the sum of the contributions due to *all* the zones z_k in SZ (Eq. 1). The spatial relationship between b_i and a generic z_k is one of the three shown in Fig. 2. Namely: (a) the centroid of b_i falls within z_k ; (b) there is a not empty intersection between z_k and the buffer of radius d_0 centered on b_i ; (c) z_k is at minimum distance $d_1 \geq d_0$ from z_k . The need to introduce the buffer of radius d_0 stems from the awareness that is too coarse approximate a school building with its centroid, in fact those buildings often have ground area that exceed 1,000 m².



Fig. 2 The spatial relationships between building b_i and zone z_k

In the following, it is assumed that the value of $Exp_{b_i,k}$ is constant and equal to Sz_k until the minimum distance between b_i and z_k is smaller than d_0 , then $Exp_{b_i,k}$ starts to decrease as d_1 increases.

In formulas:

$$Exp_{b_i} = \sum_{k=1}^n Exp_{b_i,k} \tag{1}$$

and

$$Exp_{b_i,k}(d) = \begin{cases} Sz_k & \text{if } d < d_0 \\ \left(\frac{d_0}{d}\right)^p \times Sz_k & \text{otherwise} \end{cases} \tag{2}$$

where

- d_0 is the radius of the circle centered on the centroid of b_i , circle that approximates the area of building b_i ;
- d denotes the minimum distance between b_i and the boundary of zone z_k ;
- p is a positive integer whose value determines the speed damping of the hyperbola;
- n is equal to $card(SZ_i)$. This parameter confirms that the calculation of the value of Exp_{b_i} is limited to the zones z_k “close” to b_i .

Equation 2, for $d \geq d_0$, is the equation of an equilateral hyperbola limited to the two positive semi-axes of the Cartesian plane.

To know which buildings are more exposed to the landslide hazard, it will be necessary to apply Eqs. 1 and 2 to *all* buildings in B, that is, to use them $card(B)$ times.

To make use of the proposed method for some territory, it will be necessary to gain the datasets GeoArea, SZ and B, then it will be necessary to set the values of parameters d_0 and Sz_k in order to calculate the value of p . At that point it will be possible to proceed to the calculation of Exp_{b_i} for all buildings in B, for values of ρ arbitrarily chosen. The nature of landslides suggests adopting values of ρ in the range 250 up to 1,000 m.

Conclusions and Further Work

Aim of this work was to propose a method for the determination of the degree of exposure of public buildings over a reference territory to the landslide hazard. The method is general and can be applied to any reference geographical area. If implemented in a GIS environment integrating both descriptive and spatial data, the assessment scheme is able to produce in a short time and at low cost a huge amount of data. The ranking of the buildings facilitates the local administrators to fix the priorities when investing public money in order to yield the highest protective effect for humans and assets.

The next step consists in implementing the method in a GIS environment. Then, it can be used to carry out pilot studies in large reference geographical areas.

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Integration of Descriptive and Spatial Data to Rank Public Buildings According to Their Exposure to Landslide Hazard: A Case Study

Paolino Di Felice

Abstract Landslides are a serious problem for humans and assets in many parts of Europe. Once an area where a landslide hazard exists is identified, then it is necessary to select the elements at risk exposed. This work reports the findings coming from a pilot study devoted to rank the buildings located in a large Italian region according their exposure to the landslide hazard. Our experience can be repeated easily elsewhere.

Keywords Landslide · Hazard · Element at risk · Building ranking · Geo-database

Introduction

The present paper complements (Di Felice 2015), where the reader may learn about the motivations behind our research and the formal definition of a method suitable to rank the buildings located in a large territory exposed to the landslide hazard. In the following we report about a pilot study where the territory of reference is a large Italian region as well as the major findings extracted from it. The experience has two major merits: (a) it proves the claim made in (Di Felice 2015), i.e., that when the territory of reference is large it is very useful that the buildings at risk exposed are listed according to their degree of exposure to the hazard; (b) it shows that a simple and effective way to implement the theory and, at the same time, to integrate the spatial and the descriptive input datasets consists in making use of the technology of the Spatial Database Management Systems (SDBMSs). About point “(b)”, the author already reached the same conclusion in Di Felice et al. (2014). Hereafter, we use the same notations as in Di Felice (2015).

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A Case Study

The Input Data

GeoArea

GeoArea coincides with the boundary of the Abruzzo region (central Italy). This is an area of about 10,800 km², divided into four provinces, 305 municipalities and a population of about 1,330,000. On the website of ISTAT (<http://www.istat.it/it/archivio/124086>) are available, as shapefiles, the administrative boundaries (updated in December 2014) regarding the above three organizational levels.

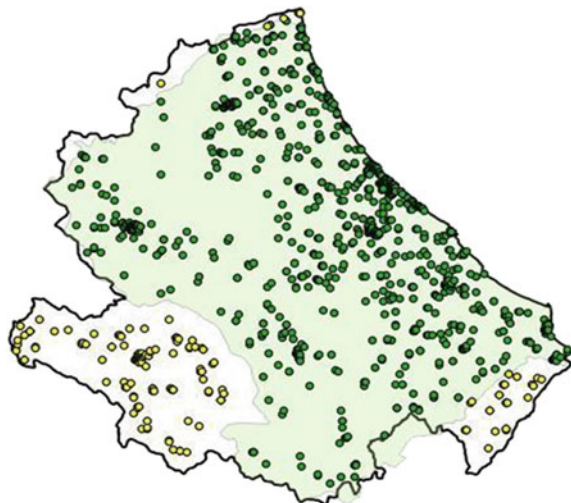
Set B

For testing the method proposed in (Di Felice 2015), we referred to a single category of buildings, but of particular social interest: the school buildings situated in the territory of the Abruzzo region. The dataset we are talking about has been found, in the shapefile format, at the site of the National Geoportal of Italy (http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/wfs/Scuole_statali_paritarie.map). The total number of records in that shapefile is 72,355. 1,140 of them relate to the school buildings in the Abruzzo region.

Set SZ

As far as concerns the elements of set SZ, we downloaded the shapefile about the landslide inventory used by the Abruzzo River Basin Authorities to produce the landslide inventory map of a large part of the Abruzzo region (PAI-Abruzzo 2015). The map in Fig. 1 shows (as yellow circles) the school buildings that fall outside the area covered by the landslide inventory. The total number of the school buildings that fall outside of the plan drew up by the Abruzzo River Basin Authorities is 164. Those buildings were removed from set B, and hence they are excluded from the experiments described below.

Fig. 1 The *yellow* school buildings that fall in the *white* areas not those covered by the Abruzzo's landslide inventory



Within the landslide inventory drew up by the Abruzzo River Basin Authorities, landslides are classified according to the type of movement, the estimated age, the state of activity (active, quiescent/dormant, no active), the depth of failure surface, and the velocity. The Abruzzo landslide inventory is structured as three shapefiles with elements subdivided into three susceptibility classes called *S1* (low susceptibility), *S2* (high susceptibility), and *S3* (very high susceptibility). Overall the inventory is composed of 4,425 elements in *S1*, 8,886 elements in *S2* and 3,959 elements in *S3*.

Values of the Parameters Used in the Experiments

The position of elements of set B is described by a point denoting their centroid, while there is no data about the actual extension at ground of the school buildings. Following feedback from the field about the average size of such a category of buildings, it was decided to set $d_0 = 50$ m. Moreover, we set $d_1 = 1000$ m; this is equivalent to assume 1000 m as the limit beyond which it is unlikely that a landslide represents a tangible hazard to buildings. To determine the value of exponent p , in relation to the three susceptibility classes *S1*, *S2*, and *S3*, we set the following three pairs of values: (a) class *S1*: $(S_{z_k}, val) = (25, 0.25)$; (b) class *S2*: $(S_{z_k}, val) = (50, 0.50)$; (c) class *S3*: $(S_{z_k}, val) = (100, 1.00)$. In the three cases, it was obtained the same value for p , namely, 1.5372.

The Geo-DataBase

It has been made recourse to a Geo-DB in order to implement the method in (Di Felice 2015) and store the records of the input shapefiles, as well as the results of the experiments to be performed. The relevance of Geo-DBs as a useful tool for the management of the hydrological hazard is well-known and emphasized in the literature, see for instance (Rawat et al. 2012).

Figure 2 shows the overall structure of the Geo-DB. Tables **geoarea**, **building**, **zone_1**, **zone_2**, and **zone_3** store data about sets GeoArea, B, and SZ, respectively (see, Di Felice 2015). Table **school1** stores data about the

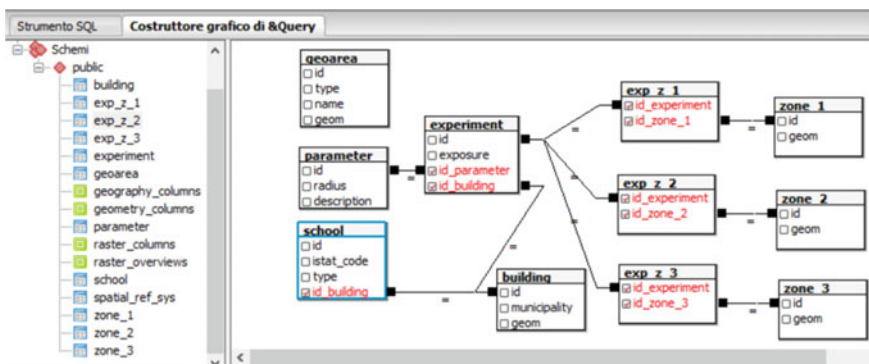


Fig. 2 A graphical view of the implemented Geo-DB

Abruzzo's schools and the buildings they are contained in. Tables **parameter**, **experiment**, **exp_z_1**, **exp_z_2**, and **exp_z_3** have been created to collect the results of the different experiments to be carried out. In detail, table **parameter** stores the different values of the radius (ρ) adopted in the experiments. Attribute **exposure** of table **experiment** stores the value of parameter Exp_{b_i} for a specific building (**id_building**) and for a specific value of the radius (**id_parameter**). Tables **exp_z_1**, **exp_z_2**, and **exp_z_3** link a building (**id_building**) to the susceptibility zones close to it (set SZ_i).

The Geo-DB was implemented in PostgreSQL extended with the PostGIS plug-in (Appendix collects the SQL code that defines such a database). The Geo-DB has been enhanced with a package of user defined functions (UDFs) written in the PL/pgSQL procedural language, by taking advantage of the PostGIS's functionality. The UDFs implement the proposed method. The utility and effectiveness of UDFs on top of a Geo-DB is stressed in (Di Felice 2014).

Results and Discussion

The ranking of the school buildings concerns the buildings (out of 976) for which the relative value of the exposure to the landslide hazard is greater than 50 (50 is the value we set for the susceptibility zones belonging to class S_2). In the rest of this section we will call these buildings *unsafe*, for brevity. In the experiments we carried out, it were considered four values of the ρ parameter: 250, 500, 750, 1,000 m. Table 1 brings together the results of the four experiments.

Table 1 brings out the fact that of the 976 school buildings (out of 1,140) located in Abruzzo, only a number that ranges from 16.49 to 22.64 % was found to be unsafe. Deepening the analysis we can say that the number of buildings exposed to increasing values of the landslide hazard reduces drastically climbing the four ranges in Table 1. For example, only for a fraction of about 1 % the value of the exposure is above 200. This result confirms the validity of the idea behind our research, namely the need of providing local governments with a software tool through which they can limit the estimates of the vulnerability, notoriously long and tricky, and of the risk, to the buildings more exposed to the landslide hazard.

Table 1 Summary of the experiments about the *unsafe* school buildings

Exposure	Buildings							
	$\rho = 250$		$\rho = 500$		$\rho = 750$		$\rho = 1,000$	
	#	%	#	%	#	%	#	%
Above 300	2	0.20	3	0.31	3	0.31	3	0.31
From 300 to 201	10	1.02	11	1.12	13	1.33	13	1.33
From 200 to 101	73	7.48	85	8.71	95	9.73	101	10.35
From 100 to 51	76	7.79	89	9.12	101	10.35	104	10.65
Total	161	16.49	188	19.26	212	21.72	221	22.64

Free Analysis

Having implemented the proposed method through a Geo-DB offers the further advantage of being able of carrying out selective investigations through SQL queries, without being forced to resort to programming in a high level language (e.g., java, C++, etc). For example, we can restrict the extension of GeoArea from the whole region, as described above, to the provinces and/or the municipalities in it. Or, instead of considering all the schools we may be interested in specific categories, such as, for instance, the primary schools. Evidently through such investigations it can be inferred data more detailed than those obtained operating either at the level of the entire region or of all the school buildings. Below, we propose an SQL query that returns the ranking of the less safe municipalities of the Abruzzo region. The ranking is expressed as the percentage ratio between the unsafe school buildings contained therein and the total number of the school buildings in the municipality.

```

WITH tot AS (
  SELECT  g.id AS id_g, COUNT(b.id) AS Total
  FROM    building AS b, geoarea AS g
  WHERE   g.type = 'MUNICIPALITY' AND ST_Contains(g.geom, b.geom)
  GROUP BY g.id
  ORDER BY Total DESC )
SELECT g.id AS id_geoArea, e.id_parameter AS id_parameter, g.name
      AS Municipality_Name,
      COUNT(b.id) AS Not_Secure_Buildings, tot.Total,
      ((COUNT(b.id)::numeric)*100)/Total AS Ratio
FROM    building AS b, experiment AS e, geoarea AS g, tot
WHERE   e.id_parameter = 1 AND b.id = e.id_building AND
      (e.exposure >= 50) AND
      g.type = 'MUNICIPALITY' AND ST_Contains(g.geom, b.geom)
      AND g.id = tot.id_g
GROUP BY g.id, e.id_parameter, tot.total
ORDER BY e.id_parameter, ratio DESC, Not_Secure_Buildings DESC
    
```

Fig. 3 The Abruzzo’s municipalities. *Colored* ones have the highest percentage of unsafe school buildings

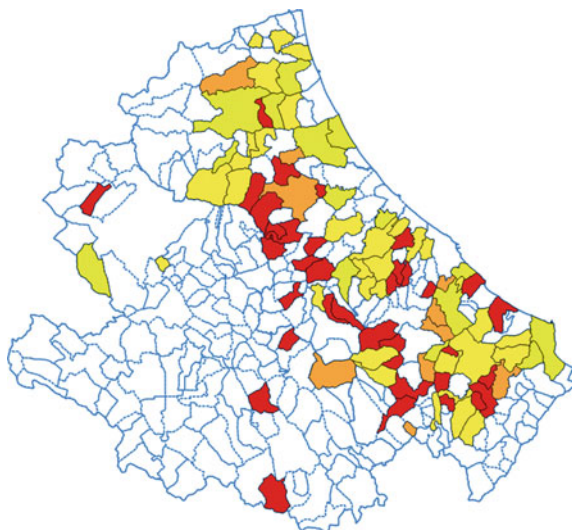


Figure 1 The (QGIS) map of Fig. 3 colors in green the municipalities where the percentage of unsafe buildings above the total is between 0 and 25 %, in shades of yellow-orange the municipalities where the percentage of unsafe buildings is between 25 and 75 % and in red the municipalities where the percentage exceeds 75 %.

Conclusions

There are many problems of enormous social relevance that can be efficiently solved with software tools provided that descriptive and spatial data are cleverly integrated within a geo-database. This work has provided a concrete proof of this assertion by carrying out a study aimed at ranking the school buildings inside the Abruzzo region (central Italy) according to their exposure to the landslide hazard.

Appendix

```

CREATE TYPE school_type AS ENUM (
    'SCUOLA SECONDARIA DI SECONDO GRADO',
    'SCUOLA SECONDARIA DI PRIMO GRADO',
    'SCUOLA DELL'INFANZIA',
    'SCUOLA PRIMARIA' );
CREATE TYPE boundary_type AS ENUM ('REGION', 'PROVINCE', 'MUNICIPALITY' );
CREATE TABLE geosarea (
    id          serial PRIMARY KEY,
    type        boundary_type,
    name        VARCHAR(50),
    geom        geometry(MULTIPOLYGON,3004) );
CREATE TABLE building(
    id          serial PRIMARY KEY,
    municipality VARCHAR(50),
    geom        geometry(POINT,3004) );
CREATE TABLE school(
    id          serial PRIMARY KEY,
    istat_code  VARCHAR(10) UNIQUE,
    type        school_type,
    id_building INTEGER references building(id) );
CREATE TABLE parameter (
    id          serial PRIMARY KEY,
    radius      INTEGER,
    description VARCHAR(255) );
CREATE TABLE experiment (
    id          serial PRIMARY KEY,
    exposure    REAL,
    id_building INTEGER references building(id),
    id_parameter INTEGER references parameter(id) );
CREATE TABLE zone_1 (
    id          serial PRIMARY KEY,
    geom        geometry(MULTIPOLYGON, 3004) );
CREATE TABLE zone_2 (
    id          serial PRIMARY KEY,
    geom        geometry(MULTIPOLYGON, 3004) );
CREATE TABLE zone_3 (
    id          serial PRIMARY KEY,
    geom        geometry(MULTIPOLYGON, 3004) );
CREATE TABLE exp_z_1 (
    id_experiment INTEGER references experiment(id),
    id_zone_1     INTEGER references zone_1(id),
    PRIMARY KEY (id_experiment, id_zone_1) );
CREATE TABLE exp_z_2 (
    id_experiment INTEGER references experiment(id),
    id_zone_2     INTEGER references zone_2(id),
    PRIMARY KEY (id_experiment, id_zone_2) );
CREATE TABLE exp_z_3 (
    id_experiment INTEGER references experiment(id),
    id_zone_3     INTEGER references zone_3(id),
    PRIMARY KEY (id_experiment, id_zone_3) );

```

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Hypatia Digital Library: A Text Classification Approach Based on Abstracts

Frosso Vorgia, Ioannis Triantafyllou and Alexandros Koulouris

Abstract The purpose of this paper is to investigate the application of text classification in Hypatia, the digital library of Technological Educational Institute of Athens, in order to provide an automated classification tool as an alternative to manual assignments. The crucial point in text classification is the selection of the most important term-words for document representation. Classic weighting method TF.IDF was investigated. Our document collection consists of 718 abstracts in Medicine, Tourism and Food Technology. Classification was conducted utilizing 14 classifiers available on WEKA. Classification process yielded an excellent ~97 % precision score.

Keywords Digital libraries · Text classification · WEKA · Word stemming

Introduction

Digital libraries and repositories serve as valuable access points to information. Their continuous enrichment with digital objects indicates their significance and also raises a need for immediate classification (Triantafyllou et al. 2014). On the contrary, digital libraries still conduct manual subject classification based on classification systems, subject headings, thesauri, ontologies. Nevertheless, this process is time consuming, involving experienced human resources (Joorabchi and Mahdi 2011), and the results might differ from one library to the other.

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The purpose of this paper is to examine a simple application of an alternative solution to the aforementioned problem. That is the application of text classification methods in digital libraries using the abstracts of digital objects. Abstracts are considered to be the best option to experiment with as they might be the only available texts which represent the content of resources, since full text is not always available due to copyrights constraints. The main source of abstracts is Hypatia, the digital library of Technological Educational Institute of Athens. We apply abstract representation by word weighting with TF.IDF. In the final phase, we use basic classification techniques in Waikato Environment for Knowledge Analysis (WEKA), an open source software which allows classification, clustering, and association rule mining (Machine Learning Group at the University of Waikato [n.d.](#); Bouckaert et al. 2010).

Methodology

Text classification/categorization (TC) is the task of classifying texts in classes which have been defined in advance (Sebastiani 2002). So far TC has been utilized in a machine learning approach, conducted with the use of classifiers (algorithms). The most extensively used ones for TC are NaïveBayes and NaïveBayesMultinomial (Witten et al. 2011) but there are more classifiers, such as Support Vector Machines (SVM), MultilayerPerceptron, IBk, DecisionTable, etc., which can be exploited (Triantafyllou et al. 2001). TC has achieved positive results from e-mail labeling (spam or no spam) to twitter trending toppings' classification (Irani et al. 2010; Awad and ELseuofi 2011).

Dataset Collection

We collected the abstracts from 718 digital objects, considering that they are in Greek and already classified either in Medicine or Tourism or Food Technology, as these classes were the most populated. Although, Hypatia was the main source of abstracts, it was impossible to extract data from this source only, since it was still under enrichment process. Thus, we decided to derive abstracts from other DL aiming to create a balanced corpus for the three classes. Analytically, abstracts were assembled from nine Greek academic digital libraries and repositories:

- Hypatia—Technological Institute of Athens (512),
- The digital repository of Agricultural University of Athens (AUA) (73),
- Eureka!—Technological Institute of Thessaloniki (47),
- Dioni—University of Piraeus (45),
- Psepheda—University of Macedonia (19),
- DSpace@NTUA—National Technical University of Athens (11),

- Nemertes—University of Patras (9),
- E-Locus—University of Crete (1),
- Anaktisis-Technological Educational Institute of Western Macedonia (1).

However, each digital library applies different subject classification tools, such as Library of Congress Subject Headings (LCSH) or Agrovoc thesaurus, to assign the subject categories. In order to ensure uniformity and accordance in our dataset, Dewey Decimal Classification was used as a guide to include or discard the abstracts. The only exception was a set of 22 abstracts from the digital repository of Agricultural University of Athens. These were theses from the department of Science and Food Technology, which also included relevant words, so they were considered to have a connection to Food Technology.

The final text corpus consisted of 373 abstracts in Medicine, 223 in Tourism and 122 in Food Technology.

Text Handling and Word Stemming

Initially, a basic text preprocessing is necessary to minimize the noise. A system of natural language communication includes nouns, verbs, adverbs, conjunctions, etc. Not every part of speech has useful meaning. In addition, it is essential to stem the words of the texts. Greek is a highly inflected language, meaning that almost every word in a sentence has an affix. Stemming, or conflation, is the process of reducing the words to their stem by taking off the affixes (Croft et al. 2010). Word stemming or term conflation process is performed by using a score mechanism which is based on the similarity estimator (1), especially designed to assign higher scores to morphological variations of the same root form.

$$\text{Similarity}(W1, W2) = \frac{\text{CommonPositionTrigrams}(\text{Left}(W1, L), \text{Left}(W2, L))}{L}$$

where $L = (\text{Length}(W1) + \text{Length}(W2))/2, L \in \mathbb{N}$

(1)

Efficient grouping of words in terms has been achieved with a similarity score of 66.6 %.

Abstract Representation

The feature space is a crucial aspect in the performance of any text classification model. Any term-word within the abstracts corpus constitutes a candidate feature with the exception of functional words that are excluded. Feature selection consists of reducing the vocabulary size of the training corpus by selecting term-words with the highest indicative efficiency over the class variable. The TF.IDF metric (Jones

1972; Croft et al. 2010) is one classic approach to sort the candidates term-words in a list by scoring their correlation importance to the class variable. In our case TF is the frequency of feature f within the corpus, and IDF is the logarithm of N/N_f , where N is the total number of abstracts and N_f is the number of abstracts containing the feature f . The selected features are the most dominant ones based on that score.

An additional important issue to consider is the frequency of a term-word when determining the abstract vector. There are cases where a term-word is more indicative to the relevance of the abstract when it appears several times. However, this is not always true since long abstracts usually introduce a lot of noise. We experimented with two alternatives concerning the strength of the selected features: the binary (boolean) appearance (0 or 1), and the actual value of the term frequency in the abstract.

Text Classification with WEKA

Following the extraction of the most important words in the corpus, the abstract representation sampling consisted of 10, 15, 20, 25, 50, 75, 100, 150, 200, 300, 500, and 750 term-words. In order to achieve accurate estimation (Kohavi 1995), a 10-fold cross-validation method was used. Precision, Recall and F-score were the evaluation metrics applied for comparing and evaluating the performance of classifiers.

The classifiers were chosen from version 3.7.12 of WEKA for developers. These were

- Two Bayesian classifiers: NaïveBayes and NaïveBayesMultinomial,
- Three Function classifiers: MultilayerPerceptron, SimpleLogistic, and SMO (SVM),
- Two Lazy classifiers: IBk and Kstar,
- Two Metalearning classifiers: ClassificationViaRegression and LogitBoost,
- Three Rule classifiers: DecisionTable, JRip, and PART,
- Two Tree classifiers: LMT and RandomForest.

Results and Discussion

All of the 14 classifiers were tested (Table 1) and the results of the best classifiers are shown on Table 2.

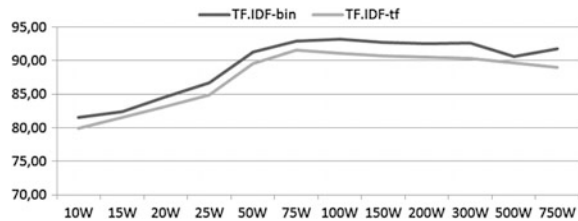
The best classifier was RandomForest which achieved the highest Precision, Recall and F-score rates in both methods: TF.IDF-bin (binary appearance) and TF.IDF-tf (frequency appearance).

Table 1 F-score (%) with words from TF.IDF

	Vector size classifier	10 W	15 W	20 W	25 W	50 W	75 W	100 W	150 W	200 W	300 W	500 W	750 W	
BIN	NaiveBayes(NB)	83	83	84	86	92	92	93	93	93	94	93	95	
	NB Multinomial	77	82	85	88	93	94	94	94	93	95	95	96	
	MLP	81	82	83	87	92	95	95	95	95	96	fail	fail	
	SimpleLogistic	80	83	86	87	93	94	95	95	95	95	96	96	
	SMO	84	83	86	87	92	93	93	94	94	95	95	96	
	IBk	81	80	80	85	86	86	87	87	83	80	79	67	71
	Kstar	81	81	82	86	87	87	88	87	84	81	80	70	73
	ClassViaRegression	81	84	86	86	86	91	93	93	93	93	94	93	95
	LogitBoost	81	82	84	88	92	92	93	94	94	94	96	95	96
	DecisionTable	82	81	83	81	88	90	92	92	92	91	92	92	91
	JRip	79	81	83	83	90	90	91	93	92	92	90	91	93
	PART	82	81	84	86	90	93	91	92	92	92	92	93	94
	LMT	80	82	86	87	93	93	94	96	95	96	95	96	96
	RandomForest	82	82	86	89	93	93	95	96	96	96	97	96	97
	NB	74	75	77	80	85	85	87	89	90	90	92	93	92
	TF	NB Multinomial	81	83	86	87	92	94	94	95	95	97	96	96
		MLP	80	81	84	87	91	94	92	93	91	84	Fail	Fail
SimpleLogistic		82	84	86	87	93	94	94	95	94	95	95	95	
SMO		76	78	80	83	90	93	92	92	93	94	92	94	
IBk		75	75	76	80	79	82	79	78	75	75	71	66	
Kstar		79	77	79	80	80	80	77	73	72	70	60	57	
ClassViaRegression		81	84	86	87	90	92	92	91	92	92	92	92	
LogitBoost		80	83	85	87	92	94	93	94	94	96	95	95	
DecisionTable		82	82	81	81	89	92	91	91	91	91	91	91	92
JRip		80	81	81	83	90	90	92	92	92	91	91	91	91
PART		80	81	83	83	90	90	92	91	92	92	91	91	90
LMT		82	84	86	87	93	94	94	95	94	94	95	95	95
RandomForest		80	85	87	89	93	93	95	96	96	96	96	96	97

Table 2 Results (%) of the best classifiers

Classifier	Method	Vector	F-score	Precision	Recall
RandomForest	TF.IDF-bin	300 W	97.40	97.40	97.40
RandomForest	TF.IDF-tf	750 W	97.40	97.40	97.40
NaïveBayesMultinomial	TF.IDF-tf	300 W	97.25	97.30	97.20
SMO	TF.IDF-bin	750 W	96.70	96.70	96.70

Fig. 1 Average F-score (%) performance for all classifiers of Binary(bin) and Frequency (tf) representations

Another critical observation is that binary representation of document vectors acts in a more beneficiary way than frequency representation in the performance of the examined classifiers. This is illustrated in Fig. 1 where the dark line corresponds to binary representation while gray one indicates term frequency representation.

Conclusion

We assess the use of text classification in digital libraries. The classic weighting method TF.IDF with binary and term frequency appearance were used. The software used to apply classification algorithms was WEKA. Overall, this research indicated that digital libraries could substitute manual classification with our proposed approach. TF.IDF approach was proved to be effective, produced an F-score greater than 97 % in some classifiers. However, this raises the question whether we could exploit the same approach using smaller texts and better term-word representation. Hence, in the future we would like to experiment with titles instead of abstracts. Another important future aspect is to apply clustering techniques to encourage and identify classes and topic fusion.

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Reading Clubs: Current Trends and the Case of Greece

Georgios Bikos and Panagiota Papadimitriou

Abstract In this paper, following a general reference to the phenomenon of reading clubs in various space and time frameworks including its contemporary expressions (e.g. online communities), we focus on some special aspects of the phenomenon, such as the semi-public reading practice which is realised in reading clubs and the social and socialising functions they perform. Subsequently, we look into the development of such clubs in Greece and explore the ways in which their institution evolves during recession. We come to the conclusion that reading clubs are both an expression of how the so-called civil society works and also a form of self-organisation within that civil society.

Keywords Reading · Reading clubs · Reading clubs in Greece · Book clubs · Philanagnosia

Using the term *Reading Clubs* (hereinafter RCs) we refer to some informal groups consisting of a few members (so that their cohesion and coordination can be ensured) which function on the basis of their members' personal self-commitment and are formed following initiatives taken either by individuals or public bodies (libraries, unions, schools, etc). These groups are made up of engaged readers who meet in private or public places or even through the Internet in order to discuss, within a certain framework of rules, about books they have read. The same term—which, in any case, refers to a group of people talking about books—also covers large-scale phenomena originating from the mass media (such as the RC boom in the USA attributed to their promotion by Oprah Winfrey's TV show, see Bryan 1999), reading programmes implemented on a regional or national basis (such as *One Read, One City* in the USA, the programme pursued by the National Book Centre of Greece, online networks of engaged readers, etc.).

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This is a social reading phenomenon with a long history, since RCs have deep roots and have existed since reading exists, a fact which makes the mapping of their historic route rather difficult. A primary form of RCs can be identified with groups of people who gathered in order to read and explain publicly books mainly of a philosophical and religious content in times when manuscripts were extremely expensive and scarce. In any case, we can assume they have existed since the fifteenth century, after printing was invented (Adams 2007). Clear references to social arrangements which relate to RCs are found in the seventeenth and eighteenth centuries in major European countries. The cases of literary salons in France, where great figures of literature and politics met, Coffee Houses in England, where the regulars talked about the publications of the time (Day 1995), literary circles of women in England, (e.g. the “bluestockings”). See the American cyclopaedia: p. 759) and RCs of men (See News and stars 2014) are all cases of such arrangements. On the other side of the Atlantic, in the USA, in the nineteenth century, groups of women met to discuss poetry, literature, etc. The more the century proceeded—along with an increase in the publishing business—the greater was the number of women in the USA who clustered in RCs, while, at the close of the century, RCs of men started emerging (Adams 2007; FictionFaerie in History 2012).

At the end of the twentieth century, the participation of individuals in RCs skyrocketed. It is estimated—by conservative estimates—that in 1994 250,000 people participated in RCs in the USA, while in 2002, we find 750,000 members in RCs and more than 5,000,000 in 2011 (Newsweek Staff 2002; Heller 2011). Similar is the trend also in the UK, where nowadays there are more than 50,000 RCs with a proportionate number of members (Viner 2013). No one can actually estimate the exact number of RCs and their members, as their operation is a widespread social phenomenon but largely private; no archives are kept (except perhaps for some individual and incidental efforts for documentation by Libraries, etc.). Moreover, the estimates above do not include—since it is practically impossible—online RC members. Online interconnection, the possibilities for synchronous or asynchronous communication, e-books, e-readers, etc., offered on the Internet, all make it possible for RCs to evolve rapidly in various forms (e.g. RCs hosted by online social networks, such as Twitter and Facebook, websites on international platforms, such as LibraryThing and GoodRead, etc.). The Internet also provides support for traditional face-to-face RCs (information relating to their organisation, examples of their action, suggestions about topics for discussion, etc.).

A key role in the rising trend of RCs is also played by factors as: a. the interest of the scientific community, which is expressed through research projects, such as the social impact of RC participation, the pedagogical benefits of student participation in RCs, etc. b. the support received by the media—such as Oprah Winfrey’s television book club in the USA- and by the show business in general. You can often find literary books, episodes in television series related to RCs or even films (e.g. K.J. Fowler’s book: *The Jane Austen Book Club*, which was adapted to a film). Book professionals show even greater interest in RCs. Since the end of the twentieth century publishing houses have been releasing publications relating to RCs, accompanying their publications with relative Guidebooks, posting tips for engaged

readers on their websites, etc., investing on their sales increase. Public Libraries also play a positive role in enhancing RCs; they set up RCs which can respond to the needs of their local community, considering them as a way to attract new users and as a tool to promote philanagnosia, i.e. love of reading (the term *philanagnosia* is a compound word from the Ancient Greek verb *φιλεῖν*, which means ‘love’, and the noun *ἀνάγνωση*, which means ‘reading’). They even make sure they have multiple book copies, ready to be used by RCs, provide rooms which can house them, serve as venues for film nights with relevant themes, etc., (Dempsey 2011). So the number of RCs is growing rapidly all over the world. At the same time, the variety—which is inherent in the nature of RCs—in their structure, size and composition, is also growing.

Out of the various features of RCs, we shall focus here in the following: a. Each RC has a distinct identity, as its members are unique personalities. But also the organisation of a club, its theme and the way it is approached are all unique. Therefore, the types of RCs may be innumerable, and so are their modes of operation. But there is a common ground: their members follow some—few, of course—necessary rules (periodicity and place of meetings, structure of discussions, etc.), but they do not obey to rules of internal hierarchy, as in other forms of social groups. b. Communication within the framework of RCs is an issue of decisive importance. Given that, we ought to make special reference to the intergroup relations, which are characterised by equality and parity in the expression of opinions and thus boost each member’s self-esteem, and the diversity in the ways that communication is articulated (e.g. in an online RC there is no personal contact). c. RCs connect reading—an act we today consider to be solitary and mute—to public discussion. Within the framework of RCs books become a group’s, not a person’s, business. RCs are based on a semi-public practice, as they operate in places which may not be private, but only welcome their own members in their meetings. In addition, via its operation, every RC associates, in an organised and structural manner, personal-solitary reading with collective conversational processing of the texts, which each of its members separately has read. Therefore, silence, introversion and mute/inner mental operation which all form the basis for the act of reading, are redeemed in RCs with a totally expressive and vocal mental activity.

At this point, let’s pose a question: Why millions of people make a *self-commitment* participating in an RC? It seems that a factor that brings people to RCs is their love for books and reading. Why do we like books though? According to Ernst Fischer in his book *The necessity of art*, Man has always been struggling to escape from the partiality of his personal life, tending towards a life contentment he is deprived of as a result of his individuality and its limitations, towards a world that gives life a meaning. Therefore, we like reading because through books we connect to others, we become *whole*. As readers of a book we take part in a fictional community whose members are all those who have read this book, together with its author. So when we share, in our RC, what we have read on our own, we see the world through their eyes, we exchange feelings and perspectives.

Another factor that attracts us to RCs is the desire of the individual for knowledge and social “elevation” through them. In this case, RCs, through the

chance for cultural development that they provide, may act as a “social tool” for the culturally deprived and the socially isolated. This dimension can be traced back to the RCs of the twentieth century, where along with women “*wearing white gloves and hats, drinking tea and reading*” (National Book Centre of Greece, Manual, p. 9) were unprivileged women who sought in RCs the tools to assert their intellectual autonomy through self-education (Heller 2011). The case of hundreds of RCs where women studied Shakespeare at the end of the nineteenth century is also striking. Through these RCs women struggled to improve their lives and fought for major social issues, such as voting rights for women and other social rights (Scheil 2012). We should also remember that the ability to read and understand texts carried social weight in the past (Bikos 2014, 18–21). Before the enlightenment, literacy skills were an indicator of social achievement, as only upper social classes were in a position to read. Today RCs aim at a broader mental development rather than at the acquisition of specific knowledge. However, this social side of RCs can be traced in clubs which develop on the geographic and/or social margin (prisons, isolated areas, etc.). The members of those RCs benefit both from the educational material offered and the human relations that develop within their framework. For example, the participation of prisoners in RCs seems to have a therapeutic effect. Participants explore their own lives discussing about books and, through their participation in a team, where everyone is on par with everyone else, build a more solid self-esteem (Dempsey 2011). Following a similar philosophy, RCs for the homeless contribute to the improvement of the people’s quality of life by building on their self-esteem and the sense of belonging to a community (Lilienthal 2011).

Actually, the sense of belonging to a group is an inner human need. In this case, RCs are divided on a scale which ranges from groups totally devoted to books to those which are used rather as an “excuse” for social meetings, as an economical solution for entertainment or even as an opportunity to make new friends or even to ... flirt (Burbach 2011; Viner 2013).

Therefore, from what we have stressed above, it becomes clear that participating in an RC constitutes an experience of reading and communication with a social dimension and “benefits” of a psychological texture/order for the individual.

Afterwards, we are looking into the development of RCs in Greece in relation to the country’s special historic and social profile. There are no traces of RC action in the nineteenth century in Greece. Social groupings which resemble RCs can be found in the twentieth century, in the 30s, in literary coffee shops similar to those that we find in many European cities, while some RCs are spotted in Athens and the Cyclades in the 50s (National Book Centre of Greece, Manual, p. 9). Of course, RCs may have been active elsewhere in previous decades, but their course is unchartered and blurred. Things are changing in the last decade. After a long delay in comparison to other countries, RCs are established also in Greece with themes and operation that follow worldwide standards. This delay may be attributed to the lack of a powerful current of engaged readers in Greece until recently.

The operation of RCs in Greece is underlined by the following special features: a. They are marked by indigence as far as research and bibliography are concerned. This fact is not consistent with the increasing number of RCs in Greece, as witnessed

in the last decade and even more, since Recession started. Actually, in recent years RCs are sprouting everywhere in Greece after initiatives taken by simple engaged readers, publishing houses and bookshops (Diamantopoulou 2011; Volanaki 2011; Malliarou 2014) or by educational administrative mechanisms. b. The majority of RCs were created by public and State entities (e.g. public libraries, municipal authorities, schools) and were supported by the State, private individuals or privately owned entities—not by what we could call *the grassroots* or *social groups*. Only in the last few years have we witnessed the establishment of RCs with such a grassroots and private base. c. Emphasis—both public and private—is placed on *school* RCs, which are also designed centrally, by State bodies. In fact, many school RCs today are approved by the administrative mechanisms as extracurricular school activities, others are connected with the curriculum (as part of the “hour for philanagnosia” in primary schools) and others are informal actions, usually of a small caliber, which take place in a school thanks to initiatives—not recorded anywhere though taken by teachers on a purely voluntary basis. Furthermore, we assume that the growth of RCs in Greece is also affected by a growing reading public, and also the increased number of books that Greek readers read, which was ascertained in a panhellenic survey, according to which Recession seems to make people turn to books (National Book Centre of Greece 2011). What also plays a role is broader and more detailed information of the public—mainly through the Internet—about developments abroad concerning movements of book lovers, such as RCs and exchange libraries.

Closing our paper, we note: to the extent that more and more RCs are being established by private entities, not belonging to public and State Organisations or Services, we ascertain a steadily increasing activity of what we call the *civil society*. This is an activity that correlates with initiatives and movements of self-regulation, self-organisation and self-institutionalisation deriving from small groups of individuals. As the State’s social welfare policies become weaker, especially those that ensure citizens’ (particularly those of low income) minimum access to some educational and/or cultural goods, such as reading and books, citizens’ groups seem to be more active in an effort to counterbalance this deficiency. Therefore, the operation of RCs today is useful to become perceived as an aspect of *civil society* activation towards a better future, in a way that ensures a more substantial—but also pleasant—contact with literate culture, and more specifically with one of its components: *The Book*.

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Learning Initiative Trends in Higher Education: A Domestic and International Overview

Lorrie Clemo, Jason Macleod and Efstathios G. Kefallonitis

Abstract Higher Educational Institutions (HEI) operate in an environment of continuous change. Relationship building with domestic and international partners equals activities that meet the strategic interests of institutions, stakeholders, and overseas partners who ensure sustainable growth across borders. Domestic relations primarily focus on ways that ensure completion of studies through diversified, sustainable, and experiential curricula. Current trends suggest the need for flexibility in meeting the socioeconomic changes learners face in a globalized world. Strength exists but also establishing new partnerships across national borders will help expand the intercultural and global perspectives of students. A careful orchestration of the internal administrative functions of HEIs will address complexities for both domestic and international learning initiative trends. In particular, closer collaboration with on-campus but also local and international community partners will ensure higher levels of success.

Keywords Building communities · Strategic initiatives · Student success · International enrollment

Introduction

The trend of community building through external relations is an essential strategic element of the modern higher education industry. Sustainable long-term effects of building communities require consistent time, effort, and relations (Luo 2015). Change in the higher education sector is seldom fast and successful partnership development often exceeds the expected delivery time against investment (Davis and Fenton 2015). In an age where increasing pressures are being placed upon higher education institutions (HEIs) to form partnerships and develop communities, the relationship between HEIs and external communities needs to be revisited, maintained, and developed (Lou 2015; Baily 2015).

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Table 1 Domestic and international relations

	Variable objectives	Common objectives
Domestic relations	<ul style="list-style-type: none"> • Student success, retention and degree completion (Nelson and Clarke 2015; Castleman et al. 2015; Pratt 2015; Kinzie 2014) 	<ul style="list-style-type: none"> • Being inclusive and attract students, faculty and administration of diverse backgrounds by engaging the community and communicating effectively (Butcher et al. 2011; Cortes 1999; Sandy and Holland 2006) • Diversity, diversification, knowledge transfer, mobility programs, skillset (Teichler 2004)

Community engagement and external relations can distinctively take shape in a variety of forms. Butcher et al. (2011) indicated community engagement between partner institutions can be considered either “transactional” or “transformational.” Transactional partnership refers to parties that are concerned with individual purposes and achievements during stakeholders’ community engagement. Transformational partnership refers to parties that pursue common benefits under moral considerations with stakeholder’s focus on sustainable long-term growth addressing problems (Butcher et al. 2011). With regard to the strategic intent of community building, relations may engage a variety of stakeholders in widely varying geographic locations. Marginson and Rhoades (2002) described a new approach in higher education that embraces global, national and local interest, mentioned as “glonacal” (Marginson and Rhoades 2002). HEI partnerships with “glonacal” communities emphasize the strengths of different geographic disparity and the power of people (Guajardo et al. 2015). Without the active participation of local, national, and sometimes international partners it would be difficult to fulfill the aims and objectives of academic institutions.

Transformational partnerships between HEIs and external communities must be sustainable since they will foster both short-term and long-term benefits (Luo 2015). When analyzing institutional needs for communities and partnerships, HEIs may categorize strategic initiatives, and their varying approaches, into either domestic or international operations. However, it is important to understand and consider the context of all community levels (global, national, and local) whenever acting on any level. Table 1 presents a summary of the domestic and international relations’ objectives in Higher Education (Table 1).

Domestic Relations

While many times the focus of strategic initiatives and intent of community building may connect and overlap, the agenda of current domestic and international objectives have a varying core focus. Key objectives within domestic relations are

ultimately focus on student success, retention, and degree completion (Nelson and Clarke 2015; Castleman et al. 2015; Pratt 2015; Kinzie 2014). Additionally, modern domestic communities usually include a focus of diversity, diversification, knowledge transfer, mobility programs, and individuals that have the right skills (Teichler 2004). With increasing demand for a high-skilled workforce, HEIs have the responsibility to respond by preparing students for success in modern global economies.

Over the years, American higher education has transformed from a system of a few universities, serving an elite social class, to today's egalitarian system composed of thousands of universities serving over 17 million students worldwide and making education accessible (Snyder et al. 2007). However, with respect to the tremendous transformation of education access and quality, there still remains much room for improvement. For a variety of reasons, including the increasing cost, graduation, and student success rate is still low for a considerable percentage of the population (Van Dusen 2014; Walsh et al. 2014). Krueger (2006) indicated that the State of Massachusetts in the U.S.A. has the highest college completion rate in the country, while only 29 % of 9th grade students in the United States completed either an associate's or bachelor's degree on time (Krueger 2006). To address these issues, it is common to see support structures built to bridge K-12, community college, and 4-year institutional gateways through partnerships among HEIs, NGOs, and local communities.

International Relations

Partnership development and community building abroad have increasingly been a focus of HEIs over the past few decades (Naidoo 2015; Kaiser et al. 2014). While multiculturalism is domestically a focus within the United States, internationalization is of heavy importance to the higher education sector (Altbach 2015; Stromquist and Monkman 2014). Knight (2015) emphasized the importance of international, intercultural and global dimensions of higher education, often seen as a triad (Knight 2015).

Internationalization of the curriculum can be seen as a financial model which is critical for HEIs to plan for future enrollment targets and even beyond institutions there is tremendous economic impact to the country as a whole. Hegarty (2014) stated that international students inject nearly \$22 billion dollars (USD) into the United States economy each year benefiting nearly every industry. NAFSA (2012) claimed that international students contribute over \$2.5 billion dollars (USD) to New York State alone.

Heckman and LaFontaine (2010) recognized both the intellectual benefits of diversity and the underlying demographic decline in U.S. student markets. Lederman (2011) cited the State University of New York (SUNY) as a system that strategically was targeting enrollment increases of around 14,000 international students. However, SUNY is not alone in this trend.

The Institute of International Education reports approximately 62 % of HEI have increased international recruitment efforts and many of those universities are strategically targeting the top enrolling countries. Which is not surprising noting that the top 50 % of international student enrollment is concentrated from China, India, and South Korea alone. In the 2013–2014 fiscal year, 886,052 international students studied at U.S. colleges and universities originating from: China (31 %), India (12 %), South Korea (8 %), and Saudi Arabia (6 %) (IIE 2014).

Finding Success

Regardless of who HEIs intend to work with, many techniques remain the same. The elements of educational rigor and common interest must be central to all relations. Additionally, to find success among the complexity of these systems, clear communication, responsiveness, and trust are critical. Several studies showed that consistent community partnership entails effective communication among stakeholders, long-term strategic plans, short-term adjustments, effective implementation, and timely evaluation (Butcher et al. 2011; Cortes 1999; Sandy and Holland 2006). Furthermore, Hoyle and Kutka (2008) indicated that collaborative learning communities are successful only when communication between individuals is supportive and leads to improved outcomes for all learners.

Modern economies are increasingly pressuring HEIs to become more collaborative in outlook, both in the domestic and international arenas. Both scenarios require (1) strong institutional leadership and risk taking, (2) a change in the culture and internal processes of institutions, (3) recognition of the importance of collaborative activities in terms of resource allocations (time, human and financial), and (4) redefining success metrics from the individual to the collective (Davis and Fenton 2015). Geographic proximity and culture result in a simpler domestic relations process and may require few resources. While on the contrary, international relation relations will typically require higher levels of commitment from institutional leadership to be successful.

Conclusion

HEIs operate in a highly complex and competitive environment. Both administrative and academic functions are challenged to meet the changing needs of learners and address domestic and international opportunities. HEIs often use learning initiative practices as a means of promoting programs and expanding local and global partnerships. This creates internal and external communities that engage with and equip learners with the skillset to succeed and complete studies in time. The common objectives for both domestic and international learning initiatives are to be inclusive and attractive to a wider student body of diverse interests and

backgrounds. In addition, the skills of thinking globally but acting locally are of growing importance. The ability to equip learners with the ability to address successfully local and global opportunities is expected in the business environment and forms an integral part of a modern economy.

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Country-of-Origin and Airline Brand Effects: A Study of Brand Associations

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Abstract This study examines linkages between country-of-origin brand (country brand) and operator brand using examples in the airline industry. A review of literature examines brand associations that may be (a) shared among the country brand and an airline or (b) are unique to an airline. The importance of both shared and unique association is highlighted. The level of engagement that these associations generate in the consumer audience is exemplified.

Keywords Airline brand experience · Brand associations · Consumer perception · Sensory characteristics

Introduction

Airline marketing communications should compliment the airline product in highlighting the brand's differential advantages. Passenger perception and satisfaction depend on the accuracy and simplicity of the airline brand communications (Krystallis and Chrysochou 2014). Consumer memory associations change over the course of an airline rebranding exercise. Association changes may relate to events that alter the perception of the airline's country-of-origin brand (country brand) or the airline brand. An increase in the number of negative brand associations may result in airline brand dissatisfaction (Kefallonitis 2015). A number of methodologies exist to link product with brand and consumer perception (Kefallonitis and Sackett 2004), but there is limited research on linking consumer brand associations to rebranding. Brand evaluations are affected by local or global sensitivities (Winit et al. 2014; Aziz et al. 2012). Airline rebranding processes need to take into consideration any links to the airline's country-of-origin brand, particularly if the airline is considered a "flag-carrier." Such airline brands ought to gain strength from their consumer audiences toward their perception of the brand (Sackett and Kefallonitis 2003).

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Brand Equity

Brand equity is the bundle of characteristics and values attached to a product or service, along with how these are perceived by the public (Yadin 2002; Lassar et al. 1995). Brand equity is the value that customers attach to a brand that keeps its promise (LePla and Parker 1999). Being truthful to customer promises creates positive brand characteristics, specially through brand use (Bennett 1995). Brand equity is consisted of: brand associations, brand loyalty, brand awareness, perceived quality, and proprietary brand assets (Aaker 1991). Brand perception built on the consumer's brand associations and attitude has been considered an integral part of brand equity and has been widely employed in brand equity frameworks (e.g., Aaker 1996; Agarwal and Rao 1996; Feldwick 1996; Keller 1993; Park and Srinivasan 1994; Srivastava and Shocker 1991).

Brand Associations

Brand associations refer to memory associations related to a brand and are part of its brand equity (Aaker 1991). These are distinguished between product and organizational associations and subcategorized to organic and created associations (Chen 2001). They are usually presented under a network representing links between elements of consumer memory and their connection. Such networks are referred to as Consumer Associative Networks (CAN).

Consumer Associative Networks (CAN)

In consumers' minds brands have certain characteristics (Sakas et al. 2015). These characteristics may have both positive and negative associations. This becomes more complicated considering that not everybody shares the same viewpoint or values about brands; for some, a brand association may be positive; while for others this same association may be negative. In terms of desirability, an airline should build on, strengthen and sustain its positive associations.

A brand lives through the characteristics that we attach to it from memory. Previous research has focused on linking consumers' memory and knowledge to brand equity (Keller 1993; Dwivedi et al. 2015; Roy and Sarkar 2015). Krishnan (1996) following the model of Keller (1993), demonstrated that various characteristics of brand associations in consumers' memory might be used to indicate a brand's strength. Identifying and studying strong associations could prove beneficial for a firm (Anderson 1983).

Consumer association networks are based on memory theory, which is a means of linking various concepts, characterized by a network of connected nodes.

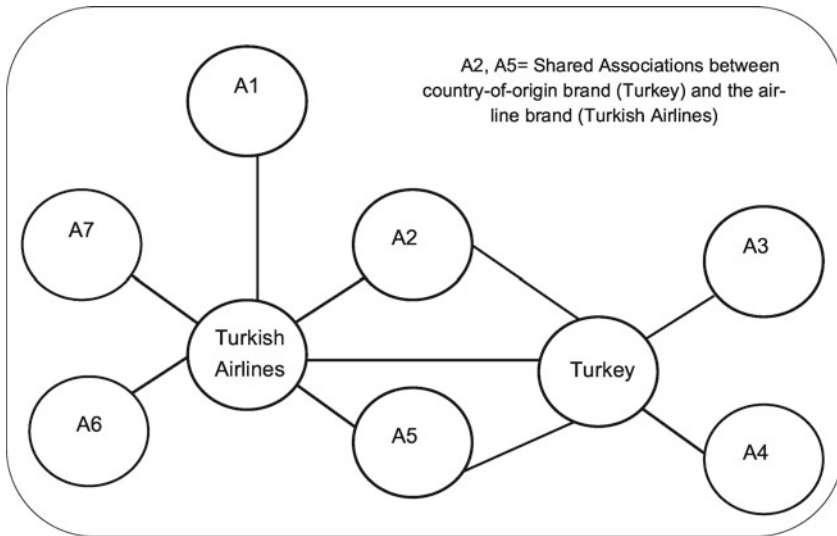


Fig. 1 An example of an associative network map for Turkish Airlines

This process of linking a brand with associated memory perceptions is portrayed as a map of nodes (Nelson et al. 1993). Figure 1 presents such a network based on Turkish Airlines (Fig. 1).

Identifying key associations is an essential part of understanding the brand's "essence," the overall impression consumers have of a brand (Waters 1997). To meet expectation for a product or service one needs to understand the value consumer associations offer (Maio 1999). After all, what really exists in a consumer's memory is the brand and its associations in relation to the consumers needs (Kapferer 1997). Competitors can easily copy an offering, while brand experience cannot be easily replicated.

Understanding consumers' minds holds a vital role in formulating brand campaigns (Gobé 2001) and strong associations (Vomberg et al. 2014; Tavassoli et al. 2014). Brands need strong associations in order to compete successfully in a market category (Aaker and Joachimsthaler 2012).

Consumer familiarity with well-known brands helps them develop feelings of comfort, trust, and encourages a positive behavioral interaction (Delgado-Ballester and Hernández-Espallardo 2008). Consumers prefer brands that are realistic (Johnson 2002). Similarly passengers show preference to airline brands that they feel close too (Chen and Chang 2008).

Consumers perceive the personal relevance and desirability of product attributes in terms of their association with personal consequences of product usage (Reynolds et al. 1995). Consumers review brands based on their relevance and benefits in comparison with their own personal values (Dimofte and Yalch 2011).

All these associations, expectations, and standards that consumers link with a brand are not remembered directly as a brand but experienced through senses.

Words alone, whether written or spoken, may lack the desired level of precision to describe a brand (Kefallonitis and Sackett 2003). Strong brand associations are those that encourage an emotional attachment to a specific brand (Aziz et al. 2014; Uslu et al. 2013; Cervera-Taulet et al. 2013). Engaging human senses in perceiving brands, creates memorable brand associations (Rupini and Nandagopal 2015; Chatterjee 2015; Lund 2015).

As an example, the use of visual characteristics and colors in expressing brands reduces imprecision and potential misunderstandings (Amsteus et al. 2015). In addition to sensory characteristics, the quality and overall service experience affects brand associations. Airline personnel are perceived as living examples of the airline brand that they work for. Consumer perceptions of employee age affects the brand and its associations (Davies and Chun 2012), as well as brand endorsements (Dwivedi et al. 2015).

Attention to customer-contact employees could help create better brand associations, such as unlike physical goods, people are not inanimate objects but have feelings and emotions (Bateson 1992).

Limitations

The continuously evolving business environment of the airline industry presents some initial challenges. Specific factors that affect airline brand associations can be summarized into: the complexity of world socioeconomics, political instability, the fluctuation of oil prices that affect ticket prices, fierce competition among air carriers, job losses, dissatisfied passengers, airline customer service standards, and the aggressive marketing operations. Brands should be studied over a long period of time to make assumptions or determine if they are healthy (Mirzaei et al. 2015).

Conclusion

Brand associations are an integral element of brand equity. The larger the number of associations a brand has the more likely it is that consumers will remember it. This has encouraged marketers to create strong and memorable brand associations that will set the brand apart in competition. Identifying and using unique brand characteristics helps strengthen brand associations. Engaging consumers using emotional and sensory elements help brand associations stay memorable.

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Trends Affecting e-Learning Experience Management

Jason Macleod and Efstathios Kefallonitis

Abstract The increasing use of technology in higher education has supported different forms of learning and knowledge retention such as e-learning. Global trends suggest that learners from all around the world prefer being in charge of their own education and constantly review the benefits of new learning methods to suit their needs. Advantages and disadvantages in e-learning highlight the opportunities for learners and the technology used. New e-learning platforms allow us to address some gaps in learning design and delivery and provide meaningful, sustainable, and up-to-date information to users.

Keywords e-learning experience · Higher education · Student attitudes · Educational technology · Consumer experience

Introduction

In this rapidly evolving age of higher education, educational technology and alternative delivery methodologies, such as online and blended learning environments, are increasingly becoming popular. E-learning is one of the most rapidly growing sectors in the global education industry (Khan and Ally 2015), although only limited data are available on the demand for electronically delivered higher education. Research regarding e-learning demand is typically collected quietly among the market researchers and their clients (Olsen 2015). Furthermore, it is clear that over the past 4 years, the movement of commercializing the education system has gained strength. This movement can be defined as: the blurring of boundaries between education and vocational learning and a trend toward individuals taking responsibilities for their own learning (Little 2014).

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Current Global Trends

The higher education industry is foreshadowing bitter signals toward the status quo. With the tremendous growth of the Internet and digital technology, the World Wide Web has become a powerful, global, interactive, dynamic, economic, and democratic medium of learning and teaching at a distance (Khan 1997). Olsen (2015) analyzed IDP Education Australia's model for growth in worldwide higher education demand from 1990 to 2025. This estimated 3.5 % annual growth, as a conservative model for the industry. More recent models predict China and India will be unable to meet the traditional demands for higher education in their respective countries by 2020 and estimate that the long-term demand from China alone will exceed the enrollment capacity for the global higher education market (Olsen 2015). Global Industry Analysts, Inc., released a press release in 2014 which projected the global "eLearning" market to surpass US \$230 billion by 2020 (Global 2015).

It is clear that there is an increasing need for infrastructure that will allow new systems of educational delivery to be developed in order to provide an inclusive global network for human development. India is host to the second largest e-learning market, behind the United States, while only maintaining 16 % internet penetration as compared to China's 45 % and the United State's 84 % (HT Media 2015). Furthermore, India's government has announced their new Digital India initiative which is pledging to support R1.13 trillion (~US\$15.4 billion) which is aiming to increase broadband penetration across India by 50 % in the next 2 years (Deloitte Global 2015).

On the contrary, in a national Pew Research Center survey, which included a sample of more than 1,000 university presidents, stated that 89 % of US public 4-year higher education institutions were offering online courses in 2011 (Parker et al. 2011). While more and more teaching and learning becomes digitized, it is critical that we recognize the requirement differences between online and face-to-face delivery, as e-learning performance is affected by the different learning styles (sensory/intuitive) (Huang et al. 2012).

Advantages and Disadvantages

E-learning has been noted for providing many advantages over other forms of learning delivery methods, besides some disadvantages (Table 1). Little (2014) stated the benefits of online learning methods including: (1) speed and flexibility, (2) reduced delivery cost (3) reduced learning times [time to competence], and (4) ability to provide quality content in memorable 'nuggets.' However, there are still many concerns regarding the shift, including quality assurance (Olsen 2015; Kidney et al. 2014), technical problems, and lack of a learning community

(Song et al. 2004). In respect of the content delivery shift, questions that usually rise concern student expectations, personal learning experience, suitability of the medium (in-class versus online), and ways to sustain and improve teaching and learning. The characteristics of Table 1 become important if one considers the increasing number of learners express interest in sustainable e-learning methods (McGill et al. 2014) in multidisciplinary teams (Dascalu et al. 2014).

In order to be successful in both conveying knowledge and providing a positive learning experience when using e-learning as a method of delivery, educators cannot simply transfer traditional practices. Teaching and learning techniques must evolve in-line with the delivery shift. Participants in this new paradigm require rich learning environments supported by well-designed resources (Reigeluth and Khan 1994). Students display a great interest in e-learning and show preference toward increased flexibility in their experience of learning—they want to have more say in what, when, and how they learn (Khan and Ally 2015).

One study (Paechter et al. 2010) focusing on 29 universities in Austria surveyed over 2000 students and identified that from the student’s perspective, the most desirable characteristics of online courses included course design and instructor interaction. More specifically, students emphasized the importance of a clear and organized course structure, the usability of the learning platform, fast accessibility and feedback from the instructor, applicability of subject matter, and speed of information exchange and interaction between peers. Additionally, another study cites technical problems, difficulty understanding course goals/objectives, and lack of community as attributes that most negatively affected the online experience (Song et al. 2004). The perceived advantage and complexity (Joo et al. 2014), along with usefulness of e-learning material determines the behavioral attitude of potential learners (Calisir et al. 2014). The role of social media as a means of interacting with other learners (Lin et al. 2015; De-Marcos et al. 2014) as well as influencing learners to consider new technologies is equally important (Kavoura and Tomaras 2015).

Table 1 Advantages and Disadvantages of E-learning practices

	Advantages	Disadvantages
Learner-oriented	Speed and flexibility, reduced delivery cost, reduced learning times and ability to provide quality content (Little 2014) Up-to-date learning, bridge the gap between curriculum and socioeconomical changes (Kong et al. 2014)	Shift, including quality assurance (Olsen 2015)
Technology-oriented	Capacity, availability, high security, interactivity (Merayo et al. 2015), easy-access, asynchronous capabilities (Masud and Huang 2012) Unlimited growth potential (Al-Qahtani and Higgins 2013)	Technical problems and lack of a learning community (Song et al. 2004)

Overcoming Disadvantages

Two relatively simple techniques for incorporating educational technology into online classes that are being used at the State University of New York at Oswego target the deviation in communication and shortfall in sense of learning community. Through the use of student-produced videos and *Google Forms*, a cloud-based product available through *Google Drive*, instructors are working toward a solution for increasing engagement and developing a better sense of community online.

Assignments requiring short (1 min or less) personal videos supplement face-to-face time while also working on verbal skills and the ability to concisely communicate, which the National Association of Colleges and Employers (NACE) has identified as one of the top eight attributes employers seek in a job candidate (2015). In addition to peer-to-peer video content, digital surveying provides educators with the tools to better understand what experience exists in the digital classroom and help identify questions students may have throughout the course. Furthermore, when ‘discussion’ activities are transitioned from learning management systems (LMS) to digital forms, students are required to utilize analytical skills to interpret class opinions and the required time necessary for gaining information is reduced.

Personalized video content assignments contribute to developing a sense of learning community by associating a face with contribution, however, more research is required to better understand the neuroscience surrounding course design’s relationship to personal experience, satisfaction, and participation accountability, as the subconscious effects of facial recognition may be one of the missing links required for building a more dynamic educational online experience.

Conclusion

The ever-evolving world of e-learning is characterized by complexity. Educators and learners alike are faced with a wide range of choices when it comes to the design, delivery, and dissemination of information. The future of e-learning will continuously change by engaging new technologies. Open-access material is becoming increasingly popular, along with the use of handheld mobile devices and their respective applications. One remains to see how the blend of self-driven education will shape learning programs both in areas of credit and noncredit bearing studies. In parallel, the corporate, executive, and lifelong learning segments of higher education will continue to evolve in pushing the agenda for new innovation in the education arena.

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Strategic Innovative Communication Tools in Higher Education

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Abstract The world has become very interdependent and global economies now influence many aspects of Higher Education Institutions (HEIs) both at national and international levels. Being flexible and adaptive during times of economic change must now be expected. The know-how in the communication and information technology sectors provides new innovative ways of enhancing the role of universities and their services. Higher education is a field where innovation through the use of technology can be invaluable. A number of innovative trends that exist in higher education are presented, along with an overview of the technological outlook.

Keywords Strategic innovative tools · Higher education · Collaborative online international learning (COIL) · Global laboratory initiative

Introduction

Time and financial constraints put pressure on higher education to quickly and proactively respond to the changing external environment through innovations and the introduction of technologies. To define innovation, Educause (2015: 12), a non-profit organisation made up of over 1800 HEIs and 300 corporations, describes it as “the act or process of building on existing research, knowledge and practice through the introduction or application of new ideas, devices or methods to solve problems or create opportunities where none existed before”. This definition is not unique to any specific industry and can be evaluated against HEIs operational

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characteristics to identify areas for driving innovation to improve services and student opportunities. This paper aims to present a number of innovative trends that exist in higher education, along with an overview of the technological outlook.

Economic Hardships and Millennial Students

In times of economic crisis, HEIs must flex their capabilities to adapt and accommodate, in scalable ways, the modern millennial students' scenario. Success in this arena requires the understanding of many students' current financial constraints, overall themes of millennial interest, and the demands of our "new knowledge economy". Recent studies have shown that in Greece similarly to other nations there is a gap between the actual and the expected skills of graduates in several professional fields and an emphasis should be put upon training undergraduate students rather than focusing on postgraduate and professionals (Asonitou 2015; Guerrero et al. 2015). HEIs are being challenged to develop high quality programmes that catalyse student interest and development towards meeting future workforce demands. Furthermore, HEIs must continue to experiment and share best practices on providing students high quality learning experiences that are globally engaging, intellectually rigorous and personally rewarding.

Developing high quality programmes is essential to meeting future workforce expectations. However, beyond the identified necessity for promoting employability skills, HEIs must also be analysing their student bodies, which overwhelmingly consist of millennials, in order to develop experiences that engage interest and inspire curiosity. A Universum report (2015) titled "Our evolution...how experience changes millennials" explores the nature of this generation which was born between the years of 1984–1996. Based on a sample of greater than 16,000 students across 43 countries, the younger age-group of millennials responded that attractive challenges are scenarios which push outside their comfort zone and requires high levels of responsibility. The older age-group of millennials responded that attractive challenges are being involved in innovative work, and learning new things on a daily basis. America as 100 college students report (2015) highlighted that US students work part-time or even full-time while raising children and attending classes and thus, educational programmes need to take into account their audiences.

Process Improvements that HEIs Can Employ as Innovative Communication Tools

In the modern interconnected world, educators need to plan and emphasise on enculturation by systematically promoting the creation of offline and online interactions in order to bridge any existing gaps between formal and informal language learning (Wong et al. 2015). Technological advancements can both support

research accessibility and extend educational service offerings. Educators now often use online social networking sites in order to address the gaps and engage learners (Juceviciene and Valineviciene 2014). Educational settings have recently employed technology-enhanced learning. This makes databases accessible to a large number of people and contributes to the development of archives for data analytics. In that way, libraries and university information centres may provide trends on the use of resources and library collection (Kavoura and Andersson 2016; Hwang et al. 2015). Mobile and technology-based learning, digital game-based-learning, innovative e-learning strategies or tools in web information can contribute to experience-based learning (Hwang et al. 2015).

Hung et al. (2015) discussed the use of tablet PCs (TPCs) in classroom instruction. This approach can be employed as an innovative communication tool with regard to student active participation in learning activities. Mobile assisted language learning on mobile devices and the use of photos may contribute to a more effective learning for the purpose of phrase learning (Liu and Chen 2015).

An initiative developed the Georgia Institute of Technology and referred to as Georgia Tech (GT) Journey (gtjourney.gatech.edu) allows learners and staff with key technical abilities to use resources that enable them to create software applications. The idea behind this initiative was to: (a) encourage collaboration, (b) effective use of resources and (c) encourage entrepreneurship. This approach enabled learners to develop competitive skills when working with others through the use of new innovative technologies (Sanders et al. 2015). HEIs may also employ modelling strategic management and the use of technology (Sakas et al. 2014). The use of simulations as part of learning and training has gained popularity among instructors and learners alike. As an example, WIGGIO (<https://wiggio.com/clubs.html>) has proven to bring together scholars, educators and students.

Pioneer Case Study: The State University of New York (SUNY) Approach

The State University of New York (SUNY), which is a 64-campus system that is among the largest comprehensive education systems in the United States, has been utilising new strategies for providing high quality and affordable experiences to students. In response to workforce demands and aligned with student interest, these programmes usually leverage online educational technology to focus on global engagement in financially affordable and scalable scenarios. Two specific initiatives to be highlight are (1) Collaborative Online International Learning (COIL) classes, and (2) the Global Laboratory initiative.

The SUNY Center for COIL is the hub for COIL collaborations within the State University of New York, and is one of the leading international organisations focused on the emerging field of Globally Networked Learning (GNL); a teaching and learning methodology that provides innovative cost-effective internationalisation

strategies (Rubin 2010). The COIL methodology utilises online learning techniques and capitalises on overlapping course curriculum across university settings to foster faculty and student interaction with peers abroad through co-taught multicultural online and blended learning environments emphasising experiential student collaboration. Through co-taught learning environments, students are required to accomplish the same learning objectives as previously required, while also coordinating work with international peers, which heavily incorporates cross-timezone scheduling, internet-based video conferencing, intercultural communication and collaborative writing assignments.

Furthermore, based on professors' guidance, in addition to the shared use of BlackBoard's Learning Management System (LMS), student may also be asked to attend *Go-to-Meeting* class conference calls and participate in a cloud-based *Google Drive* platform, which incorporates state-of-the-art collaboration tools and requires both digital communication skills and analytical thinking skills adjacent to the focus on course specialisation. In all cases, students are being internationally networked and globally engage without incurring any expense associated with traditional study abroad opportunities. In fact, students that participate in COIL opportunities are being exposed to study abroad-like experiences without travelling anywhere and without being charged any differently than they otherwise would be charged for a typical 3-credit online course.

Internship programmes or work-placements (W-P) have been recognised as one of the most efficient methods to bridge the gap between education and employment requirements (Asonitou 2015). The Global Laboratory initiative is a project launched by SUNY Oswego that provides immersive laboratory research W-P for students through a partner network of international laboratories. These W-P focus on problem solving opportunities and encompass some of the most promising employment areas; science, technology, engineering, and mathematics (STEM). Many of the Global Laboratory W-P are specifically designed for high-achieving underrepresented and financially disadvantaged students. In many cases, students are provided 68 week international W-P in high quality research laboratories for little-to-no additional cost beyond the cost of academic credits they may receive for the experience. Overall, as stated in SUNY Oswego (Possibility: Annual Report 2014) the Global Laboratory is designed to prepare students with cultural and social skills they need to compete in a global marketplace while sharpening their scientific expertise. One example of the affordable high quality W-P opportunities that this Global Laboratory initiative is providing students can be highlight from the summer of 2015.

A SUNY Oswego administrative connection led to a student opportunity at the National Brain Research Centre (NBRC) located in Manesar, India. The NBRC is funded by the Government of India's Department of Biotechnology and is dedicated to neuroscience research and education. Strategically, this W-P site is being highlighted because it is an example of a very high quality institution with mutually aligned academic missions. The NBRC was easily able to provide meaningful student mentorship and linguistic accommodations for SUNY students because they employ large numbers of individuals who have completed post-doctorate work in the UK or United States. Furthermore, the NBRC had its own hostel and dining

facilities, which coupled with the state of international currency conversion, provided a very affordable cost of living overhead for the six week W-P. This is the formula that has been identified for affordable W-P allowing student success: (1) mutually aligned academic missions, (2) mentorship capabilities, (3) on-site lodging and dining facilities, and (4) advantageous currency conversion ratios. To conclude, HEIs can afford to provide high quality experiential learning opportunities to students if they focus on developing international partnerships that satisfy the requirements of the Global Laboratory framework for W-P experiences.

Concluding Remarks

HEIs need to stay competitive and equip students with the necessary skills of the ever-changing nature of many industries. This is possible by embracing change. This change refers to developing or adopting innovative ways of knowledge transfer and knowledge retention with the use of new technologies. There are different approaches that include the use of mobile devices, the Internet and promote experience-based education. The use of technology is a catalyst in shaping higher education, the way students learn, as well as and the way that educators, students and HEI administration interact with one another.

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