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MARKETING
BEHAVIOR, AND
ANALYTICS**

Giampaolo Viglia





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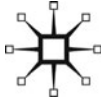


Pricing, Online Marketing Behavior, and Analytics

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PRICING, ONLINE MARKETING BEHAVIOR, AND ANALYTICS

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Foreword: Marketing and Pricing in the Digital Environment

Aurelio G. Mauri

▶ During the last years radical changes in the global economy have dramatically affected business strategies and transformed the habits of customers and firms and the ways they interact. The nature of competition and the forms of organizing and managing corporations, as well as consumer behaviors, have all been significantly modified. Furthermore, as observed by Philip Kotler (2000), change is occurring at an accelerating rate. Globalization, technological advances, and deregulation are the three fundamental drivers of this rapid and significant evolution.

The present book, written by Giampaolo Viglia, deals with the impact that new information and communications technologies (ICTs) have on marketing strategies and tactics. The author gives special attention to the new marketing and communicative tools that can be used to interact with customers, and then on pricing issues and revenue management techniques. Writing the foreword for this book, fruit of the research work of the author within Italian and Spanish universities, is an appreciated opportunity for me to remark on some particular considerations.

The impact of new ICT technologies

ICT developments and the widespread use of the Internet play a central role in the new economics of today. The Internet is an effective, efficient, and ubiquitous information platform that allows both firms and customers to reduce costs for information seeking (Sharma & Sheth, 2004). As a matter of fact, a substantial effect of the Internet is a strong reduction in the costs of information. In consequence of recent progress in mobile technology and of the fast proliferation of portable devices, the mobile channel has also arisen as a powerful tool for marketing activities.

The expansion of the digital environment, as noted by Teece (2010), “require[s] businesses to re-evaluate the value propositions they present to customers” and “the supply side driven logic of the industrial era has become no longer viable.” In fact, as indicated by Vargo and Lusch (2004), the business orientation has shifted from tangibles toward intangibles, such as skills, information, and knowledge, and toward interactivity and connectivity as well as relationships with the co-creation of value. Moreover, the Internet has permitted the entry into the market of new players and the use of new distribution channels. In addition, the Internet offers firms an important opportunity to enlarge their market base by selling products online. More generally, it is now possible to enrich the products/markets combinations fulfilled by a company.

The role of computing advances in the economic area and their implications for business management and marketing have inspired many publications on the topic, written both by academics and by practitioners. The terms (or labels) used by the numerous authors are varied: digital marketing, e-marketing, Internet marketing, online marketing, web marketing, and so forth (Chaffey et al., 2006). Often the choice of a specific term is influenced by the focus on specific channels and devices as well as by the emphasis on tactical and technical issues (Merisavo, 2005).

Digital marketing and consumer behavior

Marketing activities belonging in distribution, transaction, and communication contexts are greatly affected by the digital revolution (Peterson et al., 1997; Kiang et al., 2000). Digital marketing is based on and takes advantage of the use of new technologies to collect, manage, elaborate,

and provide information so as to communicate with customers and to conduct economic transactions. Also, marketing metrics for business performance control can be more insightful and efficient than in the past because of these new technologies.

The digital framework influences management and marketing at cultural, strategic, and tactical levels. More widely, the focus has moved from the producer to the consumer (taking shape as a customer-centric perspective). Electronic marketplaces support product and communication personalization/customization. Variegated customer needs can be fulfilled more easily and less expensively thanks to the lower cost provision of information and customer solutions. As a consequence, customers have more numerous and specific product and brand choices, and the competing alternatives for supply are more transparent. In addition, the birth of meta-search websites has made it easier for clients to make comparisons among many different offers. Customer behaviors have changed. The web has radically changed the manner in which people research information, communicate, make decisions, and especially the way they purchase goods and services. In particular, tourism products have become one of the most suitable product categories for sale through this digital channel (O'Connor, 2002).

Distribution issues are greatly affected by new technologies, with the affirmation of multi-channel distribution and the phenomena of disintermediation and reintermediation. Thus, the study of how consumers consider and choose online versus offline channels becomes crucial across all the successive stages of the buying process, as well as how these decisions are affected by the consumer's previous experience. In many sectors (e.g., tourism) the multi-channel sales approach makes managing pricing policies more complex. In fact, the so-called "price parity" among different distribution channels has become a key concern for managers. Consequently, conflicts among different channels may arise.

New technologies have also deeply impacted corporate communications. In order to face and manage the variety of media tools and techniques, integration has become a key concern. *Integrated marketing communications* is a comprehensive approach addressed to ensure strategic and creative integrity across all media (Linton & Morley, 1995). Furthermore, the Internet is not a means employed only by firms and organizations, but it is used more and more by individuals in order to make their personal thoughts, product evaluations, and opinions easily available to the global community of Internet users. Word-of-mouth,

an ancient *modus operandi* within human society, has been further emphasized and boosted by new technologies. Online feedback mechanisms and customer reviews have a deep impact on customer purchase intentions (Mauri & Minazzi, 2013).

Pricing and revenue management

In the digital environment price has acquired a special and more important role. New technologies offer new effective managerial instruments for pricing policies but also make pricing more difficult and complex to manage. Throughout most of history, prices were set by negotiation between buyers and sellers (so-called bargaining). But now, in contrast, setting one price for all buyers is the norm, a relatively new idea developed with mass production and modern retailing. However, recently the web has been reversing the policy of fixed pricing (“one price for all”). New technological equipment has offered to online sellers an unprecedented chance to track and analyze customer behavior and to obtain valuable information about customers’ preferences (the possibility of customizing products) and greater knowledge about their price sensitivity and their willingness-to-pay (Hinz et al., 2011). As a result, differential pricing, or price discrimination, has been employed. It is a powerful tool that permits sellers to improve their profits and reduces the consumer surplus held by buyers. Furthermore, price discrimination enables sellers to supply buyers that would otherwise be priced out of the market, an outcome that augments economic efficiency (Bakos, 1998). It is also simpler to monitor and deal with competitors’ prices by operating dynamically (dynamic pricing). Price changes are easier, almost inexpensive, and potentially more effective with dynamic pricing. New technology has made dynamic pricing not only widely possible but also commercially feasible and more profitable (Elmaghraby & Keskinocak, 2002). Furthermore, it allows special attention to be given to the various psychological dimensions of price and their impacts on perceived value, fairness, and brand loyalty (Grewal et al., 2003).

In the last decades revenue management has emerged as a chief topic in various service industries, especially in tourism businesses. Concisely, revenue management can be delineated as a collection of coordinated techniques and business practices utilized for increasing profitability,

both by differentiating prices and by managing capacity allocation (Mauri, 2012). Revenue management is applicable to any business that has a relatively fixed capacity of perishable inventory with differentiated demand, has a high fixed-costs structure, and involves varying customer price sensitivity. Revenue management exploits differences in purchasing behaviors by diverse market segments. Consequently, pricing and capacity allocation to various market portions are key levers. These are topics that are constantly evolving with the development of the Internet and of the continuing progress of the information and communications technologies. Although the profitability results of revenue management techniques appear evident, the integration between revenue management and customer relationship management is more complex and is becoming a crucial concern from a long-term view.

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Introduction

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Online marketing is a necessity in today's competitive environment. It has played a central role during the last decade in changing how the customer relates to business and vice versa. The goal for the present and the future for online marketers is to know how to make your presence known, not simply to be online.

Marketing practices have dramatically shifted with the sudden growth of social media and the proliferation of devices, platforms, and applications. This rapidly changing environment presents new opportunities and challenges for marketers. Marketers need to stay up to date on the evolution of e-marketing. Undoubtedly, online marketing is in full swing, and more is yet to come. This book aims to be a useful tool for researchers, practitioners, business students, or anyone who has a keen interest in online marketing specifically—not just general marketing. A background in business, advertising, or marketing is required to get the most of the content as it is based on marketing and economic theories, frameworks, practices, and pricing strategies. Having said that, the material in this text is targeted toward an academic audience. The aim of the author is to instruct the reader in the theories and practices of online marketing; the characteristics, consumer behavior, differences between platforms, analytics, and pricing strategies of new media will be explored in depth.

This book covers many different aspects of how online marketing works, its tools and its continuous evolution. The case studies and examples are used to illustrate the theory and explain the characteristics of the elements in a practical way. There is a supportive literature review to highlight what was previously done. Throughout the book, the use of mathematics is narrow. Only Chapter 5, which analyzes the overbooking practice in an analytical way, requires a working knowledge of mathematical functions and basic statistics.

We introduce online marketing in the first chapter, its history and evolution as well as its characteristics. Also, we make a comparison between online and traditional marketing, and we present the different product categories and the profile of the online consumer in view of the factors that make him or her buy. Targeted marketing gives a significant competitive advantage, so companies struggle to segment and create the right profiles of their customers. Accordingly, we present metrics and analytics in the third chapter to help companies understand their audience and thus create successful campaigns.

The second chapter focuses on the communication channels that span from online display to mobile and affiliate marketing, and older

ones such as e-mail and social media marketing. Using new tools and techniques, users will be better able to maximize profits and optimize their online presence.

The third chapter presents web metrics and analytics and discusses how they can improve marketing performance. There is also an interesting digression on the role of ethics and security for consumers when paying online. This last topic is gaining importance due to the increase of online fraud.

The fourth chapter focuses on revenue management theories and strategies, including reference and dynamic pricing, giving a clear view of the economic aspects of online marketing and helping the reader understand what is behind the online marketing process.

In the last two chapters we present applications: Chapter 5 formally presents the advantages and risks of overbooking, a revenue management technique, while Chapter 6 discusses a case study of the hotel industry with specific examples of the explained terms and information in the previous chapters. The hotel industry has witnessed a significant impact by Internet marketing, and, as a result, a breakthrough in tourism has occurred. The majority of the customers these days do not search for hotels in yellow pages or call to book rooms, but instead they book directly via the Internet or through a global distribution system of travel agents. Traditional methods of cold calling and making appointments to increase hotel bookings still work, but hotels need to have a virtual presence, as explained in the Chapter 6.

This book, balanced between a consumer and a professional lens, tries to fill all these gaps and give the necessary insights on online marketing and its future evolution.

1

Definition of Online Marketing

Abstract: Starting with an introduction on the relevance of online marketing today, Chapter 1 defines the product categories and classifications generally used in the market. To support the argument, a literature review of the different key concepts, such as experience, search, and utilitarian and hedonic products, is provided. The goal is to re-discuss the entire subject of traditional marketing in light of the new features in online marketing, clarifying in the process how online marketing remains a complement to, not a substitute for, traditional marketing. Finally, the chapter investigates the drivers of consumer segmentation. The different segments are discussed in detail, highlighting their peculiarities. In particular, a great deal of attention is devoted to the demographic characteristics of the Internet shopper.

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1.1 What is online marketing?

The telephone took four decades to reach 50 million people. Comparatively, the Internet has managed to invade millions of households within just a few years (Gay et al., 2007). The speed and the diffusion of the Internet along with its low cost make it a powerful tool in marketers' hands.

It was 1990 when Tim Berners-Lee created the first World Wide Web server and browser, and 1991 when it opened for commercial use. In 1994 e-commerce burst onto the scene with the creation of secure online banking and the convenient opening of an online pizza shop by Pizza Hut. During that same year, Netscape introduced SSL encryption of data transferred online, which has become essential for secure online shopping. Also in 1994 the German company Intershop introduced its first online shopping system. In 1995 Amazon launched its online shopping site, and in 1996 eBay appeared.

Nowadays the online shopping market grew 10% and 11% per year in the United States and Western Europe, respectively, and researchers forecast that online sales will continue to grow at that rate through the next decades (Sehgal, 2010). This growth is not surprising given the many advantages that online shopping offers to consumers: apparent privacy, low search cost, time saving, full product information, and no time restriction on shopping hours. Certainly Internet shopping is more convenient than in-store shopping for specific products.

With approximately 2.3 billion users accessing the World Wide Web in 2012 for search purposes it is imperative to understand the dynamics of online marketing. Just a few years after its massive diffusion, electronic communication by way of the Internet has become an integral part of our day-to-day life. We usually start and finish our day by checking our e-mails and are accustomed to communicating rapidly with other people around the world. No one could have imagined this even a decade or so ago.

Social networks have increased and expanded swiftly. Communicating, posting, exchanging ideas, advertising, finding information, and making transactions are just some of the activities of Internet users. As for online shopping, search engine tools allow people to quickly find almost anything they need or desire from among the millions of services and goods available. Plus, they can easily stay informed about online orders, technical features, recommendations, prices, and online stores.

Moreover, starting from the end of 1990s, the impact of new information and communications technology (ICT) tools and techniques has significantly affected the way firms and institutions approach and communicate with their stakeholders. This phenomenon has led to a wide stream of studies developed both by academics and practitioners. While many studies have focused on specific tools and their employment, others have addressed changes in the marketing concept itself, highlighting the strength of the Internet-fostered connection between firms and consumers. As we will briefly discuss, this connection is a new aspect of the already established relational marketing.

The widespread use of the Internet has enabled greater convenience and flexibility. Customers can shop when they want, at any hour of the day or night, shifting power away from brick-and-mortar retailers. Digital technologies also provide mobile convenience for consumers and for businesses with Wi-Fi. It should be emphasized that the “new” consumers who focus on online shopping value their time a lot, know what they want, and do the research necessary before purchasing in order to avoid being disappointed or exploited. The Internet offers the flexibility they like, increasing the level of competition for sellers, as there are no physical boundaries in online shopping. Furthermore, the Internet provides a new transparency regarding price, promotions and new products.

We can say that *online* or *Internet marketing* refers to marketing practices that use the web to drive sales and enhance brand awareness. Mohammed et al. (2001) provided a more formal definition: “the process of building and maintaining customer relationships through online activities to facilitate the exchange of ideas, product and services that satisfy the goals of both parties.” Online marketing works in conjunction with traditional types of outbound marketing such as advertising on television and sponsorship. There are different types of online marketing depending on the channel: e-mail marketing, social media marketing, mobile marketing, and so forth. Different terms are used for the overall subject of online or Internet marketing—digital marketing, web marketing and e-marketing—but these are all essentially synonyms.

As mentioned earlier, the new ICT technologies have significantly impacted many aspects of marketing strategies and tactics, revealing new patterns, models, and habits of consumer behavior. We will focus particularly on two topics:

- 1 Product categories and their classifications in relation to different consumer uses and behavior.
- 2 Description of online consumer behavior.

This chapter will address the role of online marketing compared with traditional marketing, then the type of product categories available online that consumers have been shown to value most (Beatty & Smith, 1987), and finally online behavior as viewed from a consumer lens.

1.2 Traditional versus online marketing

It has been said that the advent of online marketing has undermined the role of traditional marketing, but the correctness of this statement depends on the type of industry and the practices used. In this work, we aim to clarify, as well developed by Kotler and Keller (2011), how online marketing is a complement and not a substitute for traditional marketing—and that, as a consequence, the theories, frameworks, and notions of marketing in general remain almost unaltered.

The new digital marketplace has exacerbated the fluidity of the marketing environment. Although online marketing bases its foundation on traditional marketing techniques, it can be more precisely considered as its evolution—but not one that makes traditional marketing extinct. The two types of marketing, traditional and online, are best integrated in order to achieve the most success. Thus a marketer should decide in the case of each product or service whether to launch a mix of online and traditional marketing practices or to offer them singly through one or the other venue. For example, a possible danger of using only online marketing would be losing the loyalty of pre-existing customers of traditional marketing. A new area of research conducted by Gummesson and Gronroos (2012) highlights how relationship marketing is relevant to retain both traditional and online customers and prevent customer dissatisfaction in both.

Table 1.1 lists some of the differences between traditional and online marketing to serve as a basis for discussing the characteristics of some specific strategies. Though the categories are not exhaustive, they are those most indicative for comparison.

However, the Internet has additional characteristics that make marketing different from the traditional approach: (1) the ability to inexpensively

TABLE 1.1 *Comparison of traditional and online marketing*

Traditional marketing	Online marketing
Field sales staff	Computer sales staff
Ads in newspapers of local and other cities in same country	Ads in online versions of domestic and foreign newspapers
Physical banners in various locales	Banners in websites to attract target market
Local TV/cable ads	Ads in online streaming websites (use of geo targeting)
Telemarketing from Yellow Pages	Mass e-mailing using e-mail auto software
Direct mail to target market	E-mailing target market by buying e-mail database
Promotions by postal mail or telephone	Using websites to sell products
Press conferences	Updating website with press releases
Static pricing	Dynamic pricing and revenue management

store vast amounts of information at different virtual locations, (2) the ability to provide information on demand, and (3) relatively low entry and establishment costs for sellers.

Online marketing created a new set of rules for marketing in general by offering greater transparency, more consumer power and choice, and added cost efficiencies. Established businesses have had to adjust to these changes as they have been forced into a high level of online commitment in order to compete. In every case, marketers have to focus on the consumer and what is important to him or her. Even when consumer appears only as customer reference numbers or as codes on the dataset, successful businesses try their utmost to keep close communication with them by the most appropriate means. Technology plays a crucial role here. Merging technology and marketing competencies is desirable to classify consumers and keep track of them. “Technology” in this context means the adoption and use of digital technologies across internal and external business functions and processes.

After the initial explosion of the Internet era has come a phase of maturity in which marketers are aware of the benefits of technology but often don’t have the vision or technological understanding to optimize and integrate the Internet’s potential. In the future this integration will be necessary in order to meet the overall goal of keeping the old traditional models updated on the changing business and social environment brought about by the new online world.

1.3 Product categories in online marketing

Previous research suggests that the type of merchandise purchased has a significant influence on shopping preferences (Korgaonkar, Silverblatt, & Girard, 2006; Eastlick & Feinberg, 1999; Akaah & Korgaonkar, 1988). What is more, product type affects consumer attitude toward shopping online (Bhatnagar et al., 2000; Liao & Cheung, 2001; Peterson et al., 1997). Following is a discussion of three product types—search products, experience products, and credence products—as regards three criteria: (1) important features of the product; (2) affective or cognitive outcome from the product; and (3) price, frequency of purchase, and tangible versus intangible condition of the product.

1.3.1 Product classification based on important features of the product

Our first categorization is based on the study by Korgaonkar et al. (2006) on online retailing, product classification, and consumer preferences. This study tested whether consumer online shopping preferences differ based on the product type irrespective of online retail store type. It pointed out that by analyzing the differences between product categories we can better understand how consumers make their purchase decisions in the online context. Also, some traditional product classification schemes can be useful to comprehend online purchase behavior. One of the most helpful product classifications is that based on the work of Klein (1998), who categorizes products as search, experience and credence products, a scheme that we use in this discussion.

This product alignment takes into account product characteristics that influence consumers in the purchase decision-making process. The implication here is that marketers and e-retailors can adapt the way they give relevant information to their customers to enhance sales. The search, experience, and credence product classification system has been used as an accurate approach to evaluating consumer behavior in many areas related to marketing, psychology, and sales. The key features of these three product groups are as follows:

1. *Search products*

Search products are those with features and characteristics that allow full and satisfactory information to be easily obtained by consumers without

using or touching the product before purchase. Examples of products belonging to this category are tools, such as a camera, for which the consumer knows the quality and value before consumption.

2. *Experience products:*

In contrast with search products, experience products are those that cannot be fully evaluated before consumption or use. Korgaonkar et al. (2006) suggest two subgroups in the experience products category based on the aforementioned Klein's (1998) work: first, products for which full information on important features cannot be obtained without actual personal experience; and, second, products for which obtaining full information on important features by searching would be more costly or difficult than acquiring actual product experience. A bottle of wine is a classical example of an experience product.

3. *Credence products:*

Finally, credence products, also called *post-experience goods*, are those that are difficult to evaluate not only before but even after initial consumption or use. This issue increases the uncertainty for consumers and their need for third-party information. The usefulness of this classification has been recently validated by Girard and Dion (2010). Vitamins are an example of a product belonging to this category.

It is important to remark that in the online shopping context consumers do not behave in the same manner when they buy products of different categories (search, experience, credence) due to the product perceived risk, price levels, and replacement rate associated with each category.

1.3.2 **Product classification based on affective or cognitive outcome from products**

Another useful product classification system is based on affective or cognitive outcome. Such outcomes have either hedonic (affective) or utilitarian (cognitive) value to the consumer, distinguished from one another as follows (Dhar & Wertenbroch, 2000):

- 1 **Hedonic products:** Consumption is primarily characterized by an affective and sensory experience of aesthetic or sensual pleasure.
- 2 **Utilitarian products:** Consumption is more cognitively driven and accomplishes a functional or practical task.

Hedonic shopping value reflects the outcome of the multisensory, fantasy, and emotive aspects of the shopping experience, whereas utilitarian

shopping value—resulting from the acquisition of products and/or information in an efficient manner—reflects a task-oriented, cognitive, non emotional outcome of shopping (Babin et al., 1994; Holbrook & Hirschman, 1982). Put another way, utilitarian shopping reflects the task-related value of a shopping experience; hedonic shopping reflects the value found in the shopping experience itself, independent of task-related activities (Babin & Attaway, 2000).

The relative importance of information sources is greater for utilitarian products than for hedonic products in the online context. Hedonic products offer experiential enjoyment while utilitarian products give practical and functional benefits. Consumers are typically less certain about hedonic products' evaluation than about utilitarian products' evaluation solely on the basis of online descriptions. The explanation for this argument is that when consumers buy online, they cannot touch, feel, smell, or try the product, so they cannot use their senses. As a consequence, if they are buying hedonic products, such as flowers, consumers will not make their decisions based on the information they can get through Internet; rather, they will prefer to go to a physical store to assess and try the product before the purchase (Cheema & Papatla, 2009).

Contrarely, when customers are searching for information to buy an utilitarian product, such as a microwave, they can get all information they need to take a decision, in this way saving cost, time, and effort through the Internet. They can also read reviews from other customers that make online information more valuable than information from the offline channel.

1.3.3 Product classification based on price, frequency of purchase, and tangible or intangible condition

A third taxonomy, proposed by Peterson et al. (1997), suggested that in the context of the Internet, a more relevant classification system is necessary for classifying products online. Based on the special characteristics of the Internet, this study proposed a classification system designed especially for online products and services.

Below we analyze, based on previous literature, three product characteristics: price, frequency of purchase, and tangible or intangible condition. And, as with the previous product classification, we offer examples of each category. In a study conducted by Jiunn-Woei and Tzu-Ming (2007), “books” are used as an example of tangible, low-outlay, frequently purchased goods. “Online news and magazines” are used to represent intangible, low-outlay, frequently purchased goods. “TV gaming consoles” are used to represent tangible, high-outlay, infrequently

purchased goods. Finally, “computer games” are adopted as an example of intangible, high-outlay, infrequently purchased goods. We discuss the most suitable category combinations next.

1 *Low-outlay, frequently purchased, tangible products:*

This group of products is characterized by the most prevalent positive attitude toward shopping online, and this attitude is positively affected by consumer product involvement and negatively affected by individual privacy concerns.

These products have characteristics of *convenience goods*, defined as those that customers purchase frequently and immediately and that are often low priced and widely available. Products like groceries and office supplies can be included in this category. Buyers of this group perceive low risk because they spend a small amount of money. According to Thirumalai and Sinha (2009), from a customer standpoint, these goods are the lowest in terms of effort and risk and, consequently, the purchase behavior is largely habitual or impulse driven (Murphy & Enis, 1986).

Online purchases of convenience goods tend to be in high volume, with a variety of products at low unit cost, allowing customers to look for an easy and convenient purchase. If we take books for an example, we can see that this product category shares a commonality, which is that full information of the product can be evaluated before purchasing. People with computer skills can easily search for information about the product, compare it with other similar products, and finally buy it on the Internet. Eventually they are confident about buying this kind of product online, especially because of the low price, so they have a positive attitude toward online shopping.

2 *High-outlay, infrequently purchased, tangible products:*

The clearest example of this group is video game consoles. That being said, according to the analytics, people’s attitude toward online shopping in this category is positively affected by web security as well. These products are similar to those in the previous category in the sense that they are tangible products, but they differ by being expensive products: so only people who perceive the web as secure are willing to buy these products on the online channel.

In this group of high-priced, infrequently purchased, tangible products, we can make a deeper analysis based on the characteristics of

shopping goods and specialty goods, which together with convenience goods are the well-known and time-tested product classifications published by Copeland (1923):

a. Shopping goods are those that customers usually purchase after comparison of alternatives based on suitability, quality, price, and style (American Marketing Association, 2009). In the purchase of shopping goods, customers are inclined to spend a significant amount of time and money searching and evaluating (Murphy & Enis, 1986). The benefits from such comparisons are perceived to be large relative to the search costs. Customers also perceive increased levels of risk for these high-involvement products. The customer purchase behavior changes from routine shopping to moderate levels of decision making, depending on the amount of risk involved. According to Thirumalai and Sinha (2009), online purchases of shopping goods tend to be in moderate volumes, with relatively low variety, compared to convenience goods.

b. Specialty goods are defined by the American Marketing Association (2009) as those for which customers are usually willing to make a special purchasing effort. For these goods, customers do not shop for alternatives but focus mainly on what they are searching for. Compared to convenience and shopping goods, customers spend the highest amount of time and money looking for specialty goods and perceive significant levels of risk. The customer purchase behavior involves extensive decision making. During the purchase of specialty goods, the customer is looking for the right product to satisfy certain specific requirements and needs. Examples of specialty goods are desktop and notebook computers and wedding gowns. Thirumalai and Sinha (2009) concluded that the online purchase of specialty goods such as computers tends to be in relatively low volumes (often just one product), and the distribution of these goods will be selective, with greater reliance on personal selling, characteristics that might make consumers buy this kind of product offline.

3 *Low-outlay, frequently purchased, intangible products:*

Based on the Lian and Lin (2008) study, only product involvement significantly and positively affects attitudes toward purchasing these products. Meanwhile, the other four variables proposed in this study are insignificant. This can be explained by the fact that products in this group, such as online news and magazines, are very cheap, so there is no high risk associated with them in terms of amount of money spent. In fact, for these products the only thing consumers are concerned with is news and magazine content.

4. *High-outlay, infrequently purchased, intangible products:*

Products in this category are positively affected by the perception of web security and product involvement (Lian & Lin, 2008). It is easy to believe this given that a consumer who spends a significant amount of money will put importance on web security. Besides, this represents the profile of people who are willing to try new information technology.

1.4 Online consumer behavior

The field of consumer behavior is interdisciplinary. The definition of consumer buying behavior provided by Kotler and Keller (2011) is “it is the study of the ways of buying and disposing of goods, services, ideas or experiences in order to satisfy needs and wants.” What makes consumer research exclusive from other decision-making disciplines is the interaction of the situation and the individual that leads to behavior. It is relevant for research to analyze specific factors influencing the patterns of consumer purchases. Egan (2007) points out that better awareness of consumer buying behavior gives a positive contribution to the country’s economic state. In fact, it should be considered that the online marketing is an international market.

It is tricky to identify the exact consumer decision-making process because consumers sometimes make purchasing decisions based on their emotional beliefs which even they themselves are not aware of. In addition, the web experience adds complexity with its new tools and methods for enhancing customers’ online experience. Previous research has identified trust and price, especially in terms of convenience (Constantinides, 2004), as mayor drivers influencing the online consumer. What we add here is identification and a study of the different segments of online customers.

The nature of buying behavior varies from buying basic products—such as bread, milk, and mobile phone cards—to higher valued products, such as selecting a holiday or buying a car. Gay et al. (2007) show that there is a link between the type of consumer purchase and the implications for the website design. A commonly accepted process model of consumer buying decisions, shown in Table 1.2, is composed of five steps: (1) meeting a need or a want, (2) searching for information on solutions to that problem, (3) evaluating the alternatives, (4) making the purchase decision and, finally, (5) evaluating the process (buying and consumption).

TABLE 1.2 Five-step consumer buying decision model

Step	Decision
Problem recognition: meeting a need or a want	A website should prompt a consumer's interest in the online store (Huang and Christopher, 2003). For most users, the web is a tool to solve a problem
Information search	Behavioral research identifies the key information triggers that lead to purchase, such as incentives, detailed product information, or independent customer reviews. One key tool in the information search is the quality of search engines to optimize web pages and help consumers in finding product or service information
Evaluating the alternatives	Although it may be argued that the evaluation takes place in the mind of the potential consumer, online technology can help. For example, some websites allow saving information on products and then showing them on one page. Other websites allow for comparisons, showing similar products on the same page to make comparison easy
Purchase decision	To avoid consumer frustration and ensure that the consumer completes the transaction, functionality— through the shopping cart, and checkout and payment procedures—is critical. In addition, online security, brand familiarity, management of personal data, and efficient process of distribution build customer confidence and satisfaction. Gay et al. (2007) discuss how an easy return policy or money-back guarantee can also be effective at this stage
Evaluating the process (post-purchase evaluation)	Virtual communities discuss the need for online consumers to share post-purchase reassurance. The speed and diffusion of customer feedback need careful management in order to retain customer satisfaction and build long-term relationships. In this final step, a bad delivery could impact on the evaluation of the vendor, decreasing the overall quality of the experience of the customer

Online shopping has witnessed significant increases over the last few years as more and more shoppers use this channel to make their purchases due to the convenience, speed, price comparisons, and reviews that it offers. It is a form of electronic commerce whereby consumers directly buy goods or services from a seller over the Internet without an intermediary service. An online shop, e-shop, e-store, Internet shop, web shop, web store, online store, or virtual store evokes the physical analogy of buying products or services at a brick-and-mortar retailer or shopping center. The process is called *business-to-consumer (B2C)* online shopping. When a business buys from another business, it is called *business-to-business (B2B)* online shopping.

The online shopping market has increased the complexity of its segmentation due to the changes in consumer behavior, fast evolution of technology, online marketing strategies, and attitudes toward online shopping. What is more, attitudes toward online shopping have been evolving very quickly because of changes in lifestyle, channel and product risk perceptions, increased convenience, and growing consumer use of the Internet among other factors.

Given the significant growth in online retailing, the online retailer needs to understand the particular reasons why consumers choose to shop online. This need is particularly relevant for the increasingly competitive online grocery retail market, in which many firms compete among themselves as well as against brick-and-mortar stores within a relatively static market.

We now turn to identifying consumer motivations and consider a segmentation of online consumers based on these criteria as well as demographic profiles in order to understand the variables that affect online sales.

1.5 Consumers' segmentation in the online shopping market

Many studies have attempted to identify consumers' shopping orientations in order to understand their preferences for shopping from retail outlets, home, catalog or mail orders, or the Internet (see as a review Darley et al., 2010). Several criteria have been used to classify the online shopper, ranging from consumer's motivations to lifestyles. Now we will describe in more detail the individual's characteristics, motivations, and elements that influence consumer acceptance of online shopping so as to understand the criteria used in this book to classify online consumers.

1.5.1 Drivers

Previous literature converges on the drivers that influence the construction of the customers' segmentation:

- 1 **Shopping convenience:** Convenience is anything that is intended to save time or energy resources or frustration. Given that the online channel is already eliminating the effort and resources (time, distance) spent in moving to a physical store, we define

- convenience in the online shopping context as a general saving of effort and energy when purchasing online.
- 2 **Information seeking:** Online shopping offers an infrastructure by which the consumer is able to search, compare, and access information much more easily and at deeper levels than within the brick-and-mortar retail structure (Alba et al., 1997; Lynch & Ariely, 2000). What is more, given the tools developed by web pages, now the information delivered can be customized according to the needs and desires of each consumer.
 - 3 **Immediate possession:** Brick-and-mortar retailers offer customers the capacity to purchase and obtain goods at the same time. Online channels cannot offer this advantage for tangible products, so consumers motivated by a desire for immediate possession may choose to shop in physical retail stores rather than in the online context. It is important to mention that there are exceptions; the most common is the case of digital goods, such as newspaper and digital magazines, in which the only thing that consumers are concerned about is content.
 - 4 **Social interaction and shopping enjoyment:** The concept of social interaction refers to a relationship between two, three, or more individuals. In the shopping context, studies have concluded that social motives help influence shopping behavior. These motives include social interaction, reference group affiliation, and communicating with others having similar interests (Tauber, 1972). For example, when a consumer needs to receive advice or feedback from a seller, this consumer will be motivated to shop in the offline context as opposed to the online context. The individuals who value the social interaction are also called *recreational shoppers* by many authors.
 - 5 **Variety seeking:** The desire to seek variety is a positive motive to shop online given that in the online context consumers can compare and establish their level of stimulation, such as an interpersonal motive for novelty, complexity, or change as consumer behavior researchers suggest. Through the Internet it is possible to get information and obtain valuable and unique products for each individual consumer.
 - 6 **Loyalty:** The American Marketing Association defines *brand loyalty* as the degree to which a consumer consistently purchases the same brand within a product class.

- 7 **Price sensitivity:** We can understand consumer price sensitivity as the degree to which the price of a product affects consumers' purchasing behaviors. Price sensitivity is defined as the *price elasticity of demand*. It is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price. More precisely, it gives the percentage change in quantity demanded in response to a 1% change in price (holding constant all the other determinants of demand, such as income). It was devised by Alfred Marshall.
- 8 **Trust:** Trust is the situation where one party, in this case the consumer, is willing to rely on the actions of another party, in this case the e-store. The situation is directed toward the future, and the consumer (voluntarily or forcedly) abandons control over the actions performed by the e-store. Trust can determine the willingness to buy in an online store, and this is the reason why trust is used to segment the online shopping market.
- 9 **Perceived risk:** Aligned with the concept of trust, perceived risk can also explain consumers' purchase decision making and it how it differs by product category. *Channel risk* refers to the uncertainty associated with online transactions and is negatively associated with consumers' attitudes and intention to purchase online (Forsythe & Shi, 2003; Forsythe et al., 2006). *Product risk* is associated with product categories, so each product category sold online determines when customers are more willing to buy on the Internet. Finally, O'Cass and Fenech (2003) showed that perceived web security describes individual awareness of web security when providing and sending personal or financial information.
- 10 **Personal innovativeness of information technology (PIIT):** This is defined as the willingness of an individual to try new information technology (Agarwal & Prasad, 1998).
- 11 **Internet self-efficacy:** This is defined in the Jiunn-Woeiand and Tzu-Ming (2007) study for online perspective as the belief of individuals in their capability to organize and successfully execute Internet use.
- 12 **Privacy Concern:** The privacy of personal information is a significant issue for some consumers. Different legal jurisdictions have different laws concerning consumer privacy, as well as different levels of enforcement. Many consumers wish to avoid the spam and telemarketing that could result from supplying contact

information to an online merchant. In response, many merchants promise not to use consumer information for these purposes, or they provide a mechanism to opt out of such contacts. Privacy concern can be divided into four subcategories: data collection, errors, unauthorized secondary use, and improper access (Smith & Milberg, 1996).

- 13 **Product involvement:** This refers to the relevance that a product has to consumers' needs and values.

1.5.2 Segments

We have analyzed the drivers that influence buyers and the motivations that can be powerful predictors of Internet sales. Based on previous literature, we group online shoppers in the following segments based on the defined drivers: the convenience shopper, the balanced buyer, the loyal shopper, the variety seeker, and the active shopper.

1. *Convenience shopper:*

As presented earlier in this chapter, convenience shopping is defined as shopping that saves time, effort, and money.

Rohm and Swaminathan (2004) developed a typology based on motivations for shopping online that identified one of his four types as “the convenience shopper,” Jayawardhena et al. (2007) also labeled one of the shopping groups “convenience shoppers.”

The convenience shopper, as the term implies, is motivated more than other segments by the prospects of overall online shopping convenience. This segment also exhibits less of a physical store orientation (e.g., is motivated less by the prospect of immediate possession of goods or services purchased and social interaction) as well as less variety-seeking behavior across retail channels (Rohm & Swaminathan, 2004).

2. *Balanced buyer:*

Like the convenience shopper, the balanced buyer is characterized by a desire for convenience. However, according to Rohm and Swaminathan (2004), the balanced buyer shows a tendency to plan the shopping task or seek information and is moderately motivated as well by the desire to look for variety. Balanced buyers are active in their shopping behavior, display brand-loyal behaviors, and are prepared to engage in comparison shopping to find the best bargains. Yet they have an inclination for obtaining their purchases in a convenient manner. The difference

between this segment and the convenience buyer is that the balanced buyer is more active and price sensitive than the convenience buyer.

3. *Loyal shopper:*

This segment is high in brand and size loyalty, and low in price sensitivity. Loyal shoppers may use the Internet as their supplementary shopping channel and the physical store as their primary channel (they are households with online expenditures of less than 25%). Such shoppers may visit the online store only in some special circumstances such as when under extreme time pressure. In those circumstances, they will be less likely to do in-store search, more likely to use the customized lists, and more willing to pay a price premium for the convenience and time-saving advantages of online shopping (Putrevu & Ratchford, 1997). Since they do not shop much in the online store, they have little incentive to search because they do not benefit much from intensive search. Therefore, they will be more brand loyal, more size loyal, and less price sensitive in the online store.

Jayawardhena et al. (2007) also identify this cluster; in their cluster analysis this segment has high values on loyalty and low values on price sensitivity and convenience. In conclusion, loyal shoppers are non-active online buyers, who shop online only to complement their traditional in-store purchases. As a consequence, they are motivated more by brand and size loyalty than other segments because they don't invest time in searching and comparing in the online channel, so choosing known brands and size makes them feel confident. Besides, they can be risk averse, and buying known brands decreases their product and channel risk perception. What is more, given that online stores are not their primary channel, they are willing to pay more.

4. *Variety seeker:*

This type of shopper is moderately motivated by online shopping convenience, is careful and reserved, and has a positive attitude toward online shopping. Again, as the term implies, variety seekers have a desire for variety in their retail choices of products and brands (Rohm & Swaminathan, 2004). But, as Rohm and Swaminathan (2004) conclude, this segment places high value on information use and planning in shopping as well as variety seeking. In addition, this segment has a high propensity to shop online, given that its shopping motive in the physical store orientation is low. Barnes et al. (2007) call this group the

“reserved information seekers” and observe that they have a positive attitude toward online shopping, reasonable trust in Internet stores, and a relatively high willingness to buy. However, they have high perceived risk values, making them reserved in their online purchase decisions.

5. *Active shopper:*

This is the segment with the highest willingness to buy on the Internet. Consumers belonging to this group show characteristics such as low perceived risk, trust in online vendors, willingness to buy online, positive attitude toward online shopping, low brand and size loyalty, and high price sensitivity.

According to Barnes et al. (2007) the people in this cluster are open-minded to new things. The respondents in their study showed the lowest perceived risk when shopping online and at the same time the highest trust in online vendors. They value shopping pleasure highly and, again, show a strong affinity for online shopping (Bauer, Neumann, & Haber, 2006).

Jayawardhena et al. (2007) found that the active shopper was the one with the lowest loyalty ratio. Chu et al. (2010) name this segment the “heavy online shoppers,” defined as those who are highly involved with the Internet channel. They view the Internet as the primary channel and the physical stores as the supplementary channel, shopping at the Internet store regularly and visiting physical stores only on special circumstances such as when they run out of certain categories of products.

Having built our five-segment model, we can see the main characteristics of the various types of consumer, but in order to better identify the five different buyers’ profiles, we need to study their demographic characteristics, although it still remains difficult and continuous effort is required.

1.5.3 Demographic characteristics of Internet shoppers

The research findings on Internet shoppers’ characteristics remain mixed and inconclusive. For example, Rohm and Swaminathan (2004) found no significant differences among age, income, and education distributions between the offline and online samples. Jayawardhena et al. (2007) found that only gender and prior purchase had an effect on purchase intention. Internet use has historically been considered as male dominated (Liff & Shepherd, 2004). Internet studies by Verdict (2000–2006), however,

show that this gender bias is weakening, and in the UK there is now an approximate balance. About 64 percent of UK women and 71 percent of men are Internet users. Given the preponderance of women in the overall population, this translates to 48% of Internet users being women. Despite the ratio above, people who shop online are mainly females and, on top of it, women are outspending compared to men when purchasing on the Internet (Verdict, 2000–2006). Nevertheless, there are still considerable gender differences in Internet use (Jayawardhena et al., 2007).

Yet, gender is not significantly related to shopping preference for the credence products such as vitamins and water purifiers. In addition, education is positively related to preference to shop on the Internet for the search products such as books and personal computers. Finally, household income is positively related to preference to shop online for experience products such as cellular phones and televisions (Jayawardhena et al., 2007).

By addressing the changing customers' characteristics, organizations have a chance to prosper in the competitive digital world.

1.5.4 A note on gender

Work and everyday activities such as the process of buying and of consumption are gendered. Men are associated with strong food and symbols of light and domination, while women are associated with soft food, concealment, and closeness to the world of domesticated animals (Bourdieu, 1998). Interestingly, there are areas and time periods of social life where these male-female differences are blurred: in childhood and old age, for example, when masculine virility is missing. This fact is reflected in advertising that increases the differences in consumption between middle-aged men and women.

Within a historical perspective, we see that the origins of the gendered division of labor were in the Industrial Revolution, which separated male outdoor labor from female household work. Before, although with distinct activities, men and women worked together on the various tasks that were the basis of daily economic life. The emergence of female wage earners and the fact that women could find employment outside the home represented a sort of independence for women and increased their purchasing power, creating the different marketing needs that we have discussed in these various classifications.

2

Online Marketing Communication Channels

Abstract: This chapter presents the different online marketing channels. It starts with display advertising and moves on to the subject of search engine optimization. These tools, along with e-mails with personalized newsletters, are necessary for companies to have a strong, effective presence on the Internet. Also, the completely new framework represented by social media, which has become relevant in recent years, is discussed. Finally, the chapter describes the new frontier of online marketing—mobile marketing—that is capturing new market segments.

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2.1 Introduction

There are some industries such as e-commerce where the use of online marketing communication channels is imperative. The challenge is to combine the most appropriate channels to maximize benefits and reduce the cost of their use (Kotler & Armstrong, 2010). Continuous monitoring plays a crucial role in detecting the needs of the market and adapting the products to those needs (push-pull).

There are many different online marketing channels that companies use nowadays that are presented in this chapter. The evolution of technology and the speed of change forces companies to adapt and to innovate. Every day we find new features in each of the channels that enhance consumer satisfaction, or new marketing channels develop rapidly and become quite popular within a few months. The speed of development varies depending on the channel and its use; moreover, the diffusion has become much faster over the last few years compared with the past.

As mentioned by Pendleton et al. (2012), the new web environment needs to account for the active role of the consumer, using “pull” strategies to capture interest through new technologies. In particular, the so-called Generation Y, the generation of consumers who go online in great numbers, has to be considered in view of their computer experience and considerable spending power (McMahan et al., 2009). We need therefore to identify the extent of the transformations in the traditional channel structure due to the addition of digital value.

2.2 Display advertising

A common medium of online advertising is the use of web ads (such as banners, pop-ups, buttons) because they function as both image and direct-response advertisements. Web ads help advertisers maximize their online presence, and their characteristics can affect the viewer’s recall and decision to click, as they can not only attract users by a product or service, but also might be targeted to the viewer’s interests.

Strauss and Frost (1999) classified web ads as static, animated, or interactive. *Static web ads* are simple images that offer no movement or user interaction and are hyperlinked to an advertiser’s site. *Animated web ads* are online images that use graphic format GIF or Flash and thus can provide more information than static ads. The animated web ad consists

of different moving images that appear on the web one after another repetitively. *Interactive web ads* seek interaction with the users through various element implementations such as numerous tools and games. An example is “scrolling” and seeing the different options.

Other types of online advertisement ads, such as video and expanding ads, have been developed recently and they provide features that web ads do not. *Video ads* are short videos that can be programmed to play automatically when a webpage opens or can be user-activated (Google AdSense, 2009). *Expanding ads* are rich media ads that can expand beyond the original size of the ad unit, allowing advertisers to offer more information without forcing the user to visit their website (Google AdSense, 2009). When the user clicks on the ad, it automatically expands to provide more information.

2.3 Search engine optimization (SEO) and search engine marketing (SEM)

SEO and SEM are methodologies for getting good natural results from search engines. SEO is about optimizing the information in the web to gain better positions in the search engines. SEM is about purchasing advertised positions in search engines (e.g., Adwords in Google). These methodologies are very important because search engines account for up to 80% of all web traffic (Net Market Share, 2012). If, for example, a customer searches for “hotels in Bangkok” on Google, the website that is most relevant to the words “hotel” and “Bangkok” together will be shown in the results. Chances are that the hotel website that is on top of the page will be clicked first by the user and may get more bookings than a hotel that is listed on results page number 3. Nearly 80% of people searching for information online type phrases into a search engine’s search box. Google alone fields over 91 million searches per month worldwide (Saks, 2006). Potential customers tend to click on a website that appears on the first to third page of search results (Xiang and Gretzel, 2010). So if the website is not in top 20 results of the search engine, there is a great chance that it will not be clicked.

Although SEO is a communication strategy that tries to improve the position in search engines, it is *not* considered advertising. Branding is one element of the SEO objectives. One goal is that search sites show the company’s information in first places when the customer types some

keywords in an online engine (e.g. Google). Companies sometimes provide SEO support for 6 to 12 months until they can create their own brand. Reputation is another key element that can be created by successful implementation of SEO as it lets the search engines rate a company's website along with its competitors' websites. This is a new subject being studied by marketing firms to keep their customers' websites on top of their competitors' websites. Relationship is still another domain of SEO that is implemented over time by word of mouth, referrals, and reviews.

As mentioned earlier, SEM is the branch of web marketing that provides companies with better positions in search engines by offering them the opportunity to purchase advertisements in them. The principal goals of search engine marketing are (1) monitoring the evolution of the brand, (2) database building (i.e., creating a customer database for further marketing activities), (3) e-commerce, and (4) online customer support.

The final objective is to attract as many visitors as possible to the target website.

2.4 E-mail

E-mail, which refers to "electronic mail," began basically for the purpose of personal communication. E-mails do more or less the same job as letters or text messages but are sent to recipients through the Internet. Their major characteristics are that they

- are roughly free of charge;
- specify sender, recipient, subject, date, and time of sending;
- provide for the possibility of having more than one recipient for the same message;
- provide for the possibility of storing the mailing history; and
- are easy and fast—practically instantaneous.

These advantages, accompanied by some others, have made e-mail thoroughly universal and useful all over the world. For a long time after its first appearance, e-mail was utilized mostly for personal one-to-one communication, but overtime it has evolved as a medium with a wider range of applications. The possibility of sending the same message to an infinite number of recipients for free and at any time instantaneously made business people think about how they could utilize it to facilitate processes and grow their business. Marketing was one of the first

departments attracted to the idea that e-mail might be used as a tool to increase the effectiveness of processes. Due to its characteristics and potentiality, e-mail, it has an enormously effective application to marketing activities (Farabegoli, 2014). There are a lot of popular and unpopular ways that e-mail is being used in marketing today, but its main use is communicating with the target audience (customers or potential customers) of a service or product.

Going back to the definition of marketing; in each organization, there are several marketing goals and objectives. As the customer part always plays the most critical role in every marketing plan, communication turns out to be one of the most important factors in any tool that is used to reach the marketing objectives. This communication might be said to involve the following steps: inform, impress, reach, introduce, attract, satisfy, and (post purchase) care for customers to keep them in the communication cycle as long as possible.

E-mail as a tool has the potential to cover all these components of customer communication with very low cost and high efficiency. Through e-mail, we can inform possible customers about us, we can reach them by recognizing the segment they belong to and thus impress them by giving them the proper message, invite them to try our product or service, and keep contact with them. We can also improve the customer database and increase customer satisfaction. Next we explain the use of newsletters as a form of e-mail marketing.

2.4.1 Newsletters

Newsletters form the largest part of e-mail marketing. A newsletter by definition is a frequent publication, distributed on a daily, weekly, monthly, quarterly, or annual basis with the aim of giving information and updating subscribers (a term we will discuss shortly) about different topics and products or services that might interest them.

The new generation of newsletters began to spread out in the Internet world when they were sent to a mailing list through e-mail. This mailing list contained all the contact e-mail addresses of the people who had expressed interest in the past about a product or service—that is, the *subscribers*. Included in the set of subscribers are potential customers who choose to keep up to date on the activities and new launches of a company.

Every e-mail marketing campaign that includes newsletter distribution uses a database of the e-mail addresses of the subscribers who have

expressed a preference to receive marketing news on a frequent basis. We all know that e-mail is usually a free service. But there are some cases in which, in order to use this service for special purposes, companies need to outsource the e-mail function to a third-party company that provides the necessary software for communicating with a large number of subscribers on a frequent basis. Although these engines are not free, they are not very costly compared to other channels.

There are several such software providers, such as *Sendgrid*, the one that Spotify uses. The inputs given to these applications are basically the address book of subscribers, the design of the e-mail, and the URLs of the links inside the designed e-mails so that when the recipient clicks on it, he or she can be redirected to the desired link. The outputs received from the providers, apart from all the sent e-mails, are put into a report on number of sent and opened e-mails, number of clicks, and some detailed statistical data on the recipients' reactions. So in this case, a company is not paying just for the automatically generated e-mails but also for the valuable data obtained. Such data increases the company's information about the campaign and its effectiveness, which can help it improve the techniques, the messages, the design, and even the planning for the best day and time of sending the newsletters.

Depending on the objective of each newsletter, which might vary as a result of the marketing campaign's goals, marketers need to set some proper *key performance indicators (KPIs)* in order to stay on track. If they send newsletters without tracking the results, they are not really taking advantage of the feedback and cannot measure the performance of the newsletter as depicted by the behavior of the customers. That means a possible loss of money and time by distributing to the wrong target group instead of attracting the right audience that could be interested and converted to leads. The result can prove really harmful to the brand reputation of the company. In order to compare performance with some predefined objective, we can pick some ratios as KPIs.

There are some success factors that can increase the effectiveness of the newsletter: the *subject line*, which appears at the top of the e-mail; the *content*, which includes all the links, texts, pictures, and videos put in the mail body; and the *date and time* that the e-mail is being sent.

In any newsletter there is a possibility for the recipient to click on some links to get access to further content by redirecting to social media, the company's website or blog, and other channels, and also the option to unsubscribe in order to prevent possible negative effects such as spam.

Newsletters can be categorized based on their objective. They can be sent to subscribers with the aim of encouraging sales and creating leads; promoting the brand; informing existing and potential customers about some features, tendencies, or characteristics of the product; or a combination of these strategies. They can also be used to cross-sell and up-sell to existing customers and increase the effectiveness of after-sales services. Let us look at three specific types of newsletters: offers, brand promotions, and information.

1 Offers:

This type of newsletter carries content and a subject line that have the main objective of “forcing” subscribers to make a purchase by attracting them with the content. So the KPI, which is useful to measure the performance of these kinds of newsletters, is the conversion rate, or the proportion of recipients who made a purchase as a result of this e-mail. This type of newsletter can increase the actual return on investment (ROI) of the marketing campaign as it brings direct revenue into the company.

2 Brand promotions:

This type of newsletter is sent to better engage subscribers with the brand and company. The main objective is to increase and maintain the reputation and brand image. Another objective is to enhance the brand name of the company and secondly to indirectly increase revenue (by customer loyalty).

3 Information:

The information newsletters are mainly sent to provide subscribers with more knowledge and updates about what they are interested in (related to the company’s activity) under the name of the brand. The purpose of this newsletter is to increase customers’ satisfaction and keep in touch with them.

The effectiveness of e-mail campaigns has been criticized more and more over the last few years, as almost 70% of the e-mails that we receive everyday are so impersonal that the subscriber can be likely to delete before or immediately after opening them. This makes the role of the first impression really important; the e-mail should instantly capture the interest of the reader. Companies can personalize their e-mails by segmenting the audience by metrics that they collect and by understanding the real needs of the customers.

2.5 Social media

One of the most powerful online marketing tools is social media, which offers massive opportunities if used properly. Conversations are key elements in search processes (Shao et al., 2012). The increased impact of user-generated content on consumers' behavior has enhanced researchers' interest in this aspect of marketing strategy (Eccleston & Griseri, 2008). Social media can be used on a corporate as well as an individual level, with the main goal being the enhancement of the brand image. More and more companies use social media to transmit communication messages and create leads. An exhaustive list of social media platforms exists, including Facebook, Twitter, LinkedIn, Pinterest, Google +, Instagram, and My Space, where their use depends on the interests of the users and their objectives. The analysis of user-generated content (ratings, reviews, and so forth) of various market segments, combined with other information about the customer coming from the transaction, allows marketers to differentiate the service offered in order to target segments of each booking channel with respect to competitors (Varini & Sirsi, 2012).

The massive use of social media can be easily explained as it offers plenty of advantages. The fact that social media is free, easy, fast, effective, and considered a real-time means of communication makes it a smart choice for promoting the brand image of a company. Free marketing is the most common benefit that businesses reap when they join and use social media. Businesses can create free accounts with simple steps that can bring them closer to their target groups. They can create multiple offers and promotions that can be diffused very quickly. For example, companies use their accounts and post special offers for the customers who like their web page or retweet some tweets. Also, they post special online competitions, events, interaction with questions and answers, free consultations, and direct customer care. The brand image of the company is significantly enhanced this way without investing in other costly public relation activities.

In fact, social media provides the ability to interact with far more people than the conventional marketing channels do in every place of the world. This real-time interaction has eliminated the significance of distances. Its power comes from the ability to bring business and people together through formal and informal means of communication that can be adapted to the needs of the company and their perceived needs.

LinkedIn has emerged as a very powerful tool for human resources departments as it gives them the potential to interact with possible candidates, verify their skills, and filter them depending on the industry, function, and location in order to shortlist the most suitable ones.

Interoffice communication is another area that social media can enhance. It can provide a field of productive communication among employees and employers by facilitating their sharing of ideas on how to improve many business areas. An internal Facebook page can create an environment that limits the gaps between employees and top management, thereby producing a field of fruitful and even joyful discussions. Google + and Skype can improve the internal communication and culture with the options that they offer. Many companies have started using specialized internal communication tools such as *yammer*, which is quite similar to Twitter.

Social media is a strong tool for communication with very low cost and high effectiveness, especially for small companies that do not have a budget for marketing investments. The marketing ROI that social media can bring to the company can be increased much more easily than that of other marketing tools. This fact is in total contrast to the perception that SMEs (small and medium enterprises) have about social media. According to one study (Raacke & Bonds-Raacke, 2008), some people think that they waste their time by using social media. Almost 61% claim that they cannot see any ROI from social media, although 50% have increased their time of using social media. Only 36% use blogs and social media, linking them together, a statistic that might explain the low trust in social media as it shows such media are often not used efficiently.

The importance of social media can be noticed by its increasing use by big companies or organizations that until recently were using more conventional channels of marketing. European football's governing body, UEFA, will spend the majority of its marketing budget for the European Championships in 2016 on social media (Marketing Week, 2013). UEFA expects to create a community of fans through Facebook and Twitter and keep them updated, as well as create exclusive competitions and offers for the fans.

A tip for winning at social media is to have eye-catching and creative content from people who are on the same line of corporate culture and therefore can more effectively promote the communication messages of the marketing department. The frequency, the identification of the target groups, and the right combination of social media channels improve the chances of a successful social media communication strategy.

Differences can be observed between product-oriented and services-oriented companies, or between B2B (business-to-business) and B2C (business-to-customer) companies. Each company normally creates a mix of the different channels in order to have the maximum effectiveness. The B2B customer interface permits companies to invest more in Twitter and LinkedIn than in Facebook; Twitter and LinkedIn are considered to be more effective for these companies, with their extensive use of mass competitions and special offers, than the more customized communication of Facebook.

The future of mobile advertising is also heavily dependent on social networking sites like Facebook and Twitter. The number of people using mobile to access these sites is growing constantly in these recent years (Gerpott et al., 2013).

Companies have to pay attention to the use of social media as there can be adverse impacts in case of misuse or bad management. Ryanair faced one of the worst crises in its history because of the social media. It reported a 29% decrease in profits despite a 600% increase in investment in marketing (SimpliFlying, 2012). This decrease started from some posts on its Facebook page by unsatisfied consumers that reached a fan base of 500,000 likes and 20,000 posts. Their diffusion was massive and damaged the image of the company.

An interesting report published by Harvard Business Review Report (2010) revealed that although almost 79% of the surveyed companies use or plan to use social media, only 12% think they use it effectively, and two-thirds do not have any kind of social media strategy. The main focus of the companies is the brand awareness and promotion of the products or services, ignoring other capabilities such as customer interaction, new ideas, and linkage to the website and other social media platforms. As a consequence, the most challenging step for social media teams is to measure the effectiveness of social media and their contribution to the ROI, but this is something that is only gradually resolved.

It is difficult to use social media at its full potential, and most companies haven't uncovered all the secrets of its successful use and the opportunities that it offers—which is incredibly unfortunate considering the benefits that it can offer.

2.5.1 Social media in context (Roberta Minazzi)

The influence of social media on customers' behavior is growing all over the world and is influencing the concept of *word-of-mouth*

(WOM), leading to the development of what is called *electronic WOM (eWOM)*. Individuals can make their thoughts, opinions, and personal feelings easily accessible to other Internet users having, in this way, more power to drive the conversation than in the past.

Academic studies on the topic have pointed out the impact of online consumer reviews on the various steps of the consumer decision-making and purchasing processes (Park et al., 2007; Buhalis & Law, 2008). In fact, an extant stream of research has studied and demonstrated the economic impact of online reviews on companies' financial performances by means of numeric variables representing the valence (positive or negative) and volume of reviews. The valence (positive or negative) of the message is generally one of the most considered variables (Vermeulen & Seegers, 2009), as well as credibility (Schindler & Bickart, 2005). In the first case, academic studies seem to recognize the more influential effect of negative than positive WOM because of the detrimental impact on businesses. In the second case, the focus of the literature has been to understand which are the cues of the message credibility that can subsequently determine reader adoption. The presence of *personal identifying information (PII)* of the reviewers can give more validity to the message as well as the presence of details about the personal experience of the reviewer. These elements were shown to be a cue of the message validity (Miao et al., 2011).

The topic of credibility is really important considering the possible biased nature of online reviews, which can be sometimes strategically manipulated in an effort to influence consumers' purchase decisions. Fake positive or negative reviews can be posted by both the company and the competitors trying, in the first case, to improve the company's reputation, and, in the second, to damage the reputation of a competitor (Hu et al., 2012). Moreover, online reviews can also contain biased information because (1) people who post a comment on the Net are generally extremely satisfied or extremely dissatisfied (Litvin et al., 2008); (2) they are influenced by subjective product quality standards; and, finally, (3) sometimes only consumers with a favorable disposition toward a product purchase it and have the opportunity to write a review (Hu et al., 2012).

It has to be said that readers, when evaluating alternatives, consider also other aspects, such as their preexisting disposition toward

the service provider, the number of reviews posted, the product popularity and the product ranking and rating (Chevalier & Mayzlin, 2006; Levy et al., 2013).

2.6 Affiliate marketing

One of the ways to bring money to an online business is using *affiliate online marketing*, which is basically sharing revenue by collaborating with another business (website, property), placing banners and advertisements on each other's websites. Based on some affiliate agreements, the website owners receive a commission for each conversion (or click) when a customer clicks on the affiliate link and does the desired action.

In spite of many critics and complexities of this marketing channel, it is one of the biggest tools online companies use to bring traffic and money to the website. As with any other B2B marketing interaction, this channel deals with a very high level of risk due to the difficulty in accessing enough information about the other parties. Also, risk is associated with the unpredictability of the customer's online behavior, which depends on many known and unknown factors. However, there is a high variance in the way that affiliates work in terms of payments, agreements, and the form of displaying the advertisement or directing the audience to the webmaster's website.

Generally, in an affiliate program, two online organizations (website owners) collaborate in order to provide benefit for both sides. One places an advertisement in its website that directs its audience to the second-party website. The characteristics of the advertisement, from size design, location, and so forth is the main issue to be agreed on in the collaboration.

2.7 Mobile marketing

Mobile marketing involves the use of mobile devices for marketing functions. Over the past decade, mobile devices such as cellular phones and tablet computers have become increasingly powerful, and it would be hard to imagine our life functioning without them. According to the GSMA report (2013), there are 5 billion mobile phones users in the world,

which means that the number of cellular mobile phone subscribers represents 86% of the global population. Moreover, out of 5 billion mobile phone users, 1.08 billion people use smartphones. IDC (2013) analyzed the 2012 holiday shopping season and found that tablet and smart phone sales grew 55.8% and predicted that they will continue to grow 39.5% for the next years while PC sales declined from the same quarter one year ago. In this environment, many companies are either planning to engage or are currently applying traditional Internet browsing activity to mobile devices.

So what is mobile commerce? *Mobile commerce*, or *m-commerce*, is a special area of e-commerce where transactions are conducted through wireless, Internet-enabled devices such as cellular phones and personal digital assistants (PDAs) (Ghosh & Swaminatha, 2001). Wireless mobile devices present some unique features that affect the nature and specifics of applications as they provide added value and benefits to m-commerce users. According to Tang et al (2001), the features of mobile devices consist of ubiquity (anytime and anywhere access), personalization (it can be identified uniquely with a single individual), localization (a connection can be used to determine physical location of the device), and flexibility (the functionality to access information at the point of need).

Mobile Media Consumption report (2012) shows that on average the global mobile web user consumes 7.2 hours of media per day. Online users are almost shifting away from their fixed connections as mobile web users are daily spending 117 minutes connected to the web via mobile and 140 minutes via desktop and laptop connections. According to the report, 59% of users state that mobile is their primary or exclusive source of accessing the web while only 9% of respondents are using their desktop connections. The findings show that the contributing factors to this shift in usage are the ease and convenience with which mobile web delivers as users can easily access information (sports, news, and so forth) and communications (e-mail, Facebook, Twitter). However, respondents prefer desktop interactions for shopping or banking sessions.

It is essential for companies to formalize mobile marketing strategies and focus on the best way to grab customers' attention. As Barwise and Strong (2002) claim, the success of mobile advertising depends on customers opting to receive marketing messages. Allowing customers to opt in to a mobile campaign results in a better response rate, brand attitude, and awareness; and better readership of the message in general leads some customers to even forward the message to their contacts (Barwise

& Strong, 2002). However, companies should be aware of customers “private” space and should control how and where customers receive marketing messages accordingly.

In conclusion, we can see that for marketers, mobile phones can be a lucrative channel for offers—if targeted in the right way.

2.8 Retargeting

It is a common practice for consumers to enter an online purchase site, fill the shopping cart with goods, and then suddenly leave the site and switch to another site before returning to finish the purchase and realizing that on Youtube it can be seen an advertisement of the goods placed in our shopping cart. For most of the websites only 2% of web traffic converts on the first visit, and to increase the value of online advertising many companies are widely focused on behavioural retargeting as it helps to increase relevance and consumer response (Soriano, 2011).

Behavioral retargeting (also known as *behavioral remarketing*) is a form of online advertising that regains a potential consumer interest to purchase the goods by displaying the advertiser’s ads while the consumer is visiting other websites. Companies offering retargeting services state strong increases in advertising effectiveness—for example, Criteo (2010) reports that personalized retargeting ads are six times more effective than standard banner ads.

The advertising networks that combine online advertising space across multiple publishers of web content and then sell this space to the advertisers usually arrange for retargeting. Advertisers do not need to manage their relations with a large number of publishers to achieve online ad space market efficiency.

2.9 Targeting implementation

Following are some ways of implementing retargeting (Lambrecht & Tucker, 2013):

- 1 **Product exposure:** The consumer visits the company’s (the advertiser’s) website and views products. For each product page the consumer views, a pixel tag (1×1 image) is downloaded

automatically that archives information on what the consumer was looking for. This information is typically tracked by cookies or pixels and becomes a part of the individual user's profile controlled by the ad network on behalf of the advertiser.

- 2 **Targeting consumers:** The consumer browses the Internet and visits a website whose ads are provided by an advertising network that offers retargeting. The advertising network uses the cookies or pixels to determine whether the consumer has previously visited the advertiser's website.
- 3 **Ad design:** The ad network applies the individual cookie profile to identify consumers who have visited the advertiser's website before so as to show them generic ads of that specific advertiser rather than showing them ads of another company. Such generic ads usually present a picture of the exact product the consumer had looked at before. For example, if a consumer visited Vista print's website and placed business cards in the shopping cart and then left to visit Youtube, the consumer will see the ad for the business cards on Youtube.
- 4 **Purchase:** The consumer makes a purchase from the advertiser's website. The ad network records this purchase in an individual-level profile and links to any ad exposures. After a purchase, consumers will typically not be retargeted unless they visit the website again (unless it is a post-purchase retargeting).

Companies should use effective behavioral retargeting strategies to increase the conversions of the existing traffic sources. According to Davis (2013), the strategies that can influence retargeting performance are as follows:

- 1 **Cookies' time parameters settings:** Companies should set up multiple cookies with different time parameters so that when one cookie expires, the company can use another one and change the ad/offer. Changing the ad over time helps avoid repetitiveness.
- 2 **Retargeting optimization:** Companies should focus more on creativity, avoid repetitiveness, and they should test a variety of sizes and placements to maximize the consumer reach. For example, they could use powerful words such as "free" and "limited time," which help increase conversions and engagement. Similarly, it is essential to optimize the landing pages aligned with the retargeting message.

- 3 **Frequency cap:** Companies should not “stalk” people by creating the feeling they are following them around the web. To avoid this, companies need to set a frequency cap on the ads, meaning a restriction of the number of times the ad should be shown (for example, 2/24 –two times per twenty-four hours).
- 4 **All consumers’ retargeting:** Companies should not focus only on consumers who filled up the shopping cart and then left the site, but they should retarget new and reliable consumers to regularly remind them of all the other great products the company offers.
- 5 **Specific intervals:** Companies should schedule specific intervals of retargeting: for example, consumers who filled up the shopping cart but did not make a purchase at one, fifteen, or thirty days. It can help to design specific ads (such as “last-minute deal”) to encourage potential consumers to purchase the product.
- 6 **Email retargeting:** Companies should not miss a “cookied” e-mail opportunity and should add those consumers to their retargeting pool as this allows them to retarget with display ads.

3

Online Marketing Metrics and Analytics

Abstract: Chapter 3 describes in technical detail metrics and analytics used in online marketing. Although the discussion is kept at a descriptive level, it provides explanations of advanced methods for keeping records of the results in investment such as social intelligence dashboards and real-time bidding analytics. To complement the discussion, the author presents real cases of implementation, showing the evolution of these metrics from their beginning use to the actual resulting measures. Also offered is a dynamic comparison among the present methods in terms of risk and profit generation. The final part of the chapter is devoted to ethics and security in payment, a topic that is gaining relevance with the increase of transactions on the Internet.

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3.1 Introduction

Measuring marketing effectiveness has always been a challenge. Most marketers struggle to monitor and measure the marketing actions they launch. Nevertheless, in the world of information, where market research and analysis give significant competitive advantage, marketing departments need to invest money and time to understand the results of their actions, the reactions of their target groups, and the environment in which they operate.

The challenge becomes greater as the competition becomes more intensive and some industries start to saturate a market. Marketing departments cope with increasing pressure to improve performance in new and innovative ways. The traditional methods become obsolete, and the launching of new marketing channels boosts marketers to adapt to the resultant change and seek new tools in order to exploit their data.

The main ways to measure online marketing actions are web metrics and marketing analytics. Normally *web metrics* are used for the performance measurement of the websites such as time spent on page views per visit, unique visitors, or the cost. *Marketing analytics* are business metrics that include data from different channels like social media and offline marketing. Marketing analytics are more people-centric, mapping the leads and the prospects, identifying the profiles of the customers and their needs, while web metrics focus more on the page view and are more limited (Hubspot, 2012). These tools, although they are not core in this work, have to be discussed because of their importance in measuring all forms of website activity and other data gathering. This chapter ends with a discussion of the privacy concerns of database marketing and the issue of security both in general and in terms of electronic card payments.

3.2 Web metrics

According to Bhat et al. (2002), the choice of web metrics depends on the advertiser's budget, the measurement objective, technology, and time limits. We start the discussion by highlighting the cost of these techniques. The detailed definition and application of all the metrics would go beyond the scope of this work. For readers who want to explore in depth all the aspects of marketing metrics, Farris et al. (2010) is a useful reference.

Online advertising is a much more measurable and accountable medium than traditional media. It is linked with performance-based pricing models that connect online advertising payments directly to campaign measurement data. There are four standard online media pricing models: (1) cost per thousand (CPM)—the “M” is the Roman numeral for “thousand”—also known as CPT; (2) cost per click (CPC), also known as pay per click (PPC); (3) cost per acquisition/action (CPA); and (4) hybrid campaigns.

CPM is an online advertising model in which advertising can be purchased on the basis of an ad that is displayed 1,000 times. The lower the CPM, the more impressions advertisers would get, as more people would see the banner. The formula for cost per thousand (CPM) is:

$$\text{CPM} = (\text{Cost of 1 Unit of a Media Program}) / (\text{Size of Media Program's Audience}) \times 1,000$$

Any sort of advertising medium can be a Media Program. The media audience may include households, readers, and different users.

For example, let's assume Company ABC is considering purchasing a one-page print advertisement in the next issue of a national magazine for 6,000. The issue is expected to reach 10,000 readers. Using the formula above, we can calculate that Company ABC's CPM would be:

$$\text{CPM} = (€6,000) / (10,000) \times 1,000 = €600$$

This means that Company ABC would effectively be paying €600 to advertise to 1,000 people (CPM = €600).

CPC is a performance-based method whereby the advertiser pays the publisher for the ad clicks. It is calculated by dividing total spending by the number of clicks. For example, if the advertiser spent 2,000 € and got 100 clicks, the cost would be 20 € CPC (2,000 €/100). CPC indicates how effective and profitable the campaign is.

CPA is a performance-based advertising model in which the advertiser pays when an ad delivers acquisition. Cost per order (CPO), cost per lead (CPL), and cost per conversion also fall within this pricing model. Action or/and acquisition is defined as e-mail sign-ups, downloads, sales leads, or purchases. CPA is considered one of the most effective online advertising models as the advertiser pays only when the user completes the defined transaction. For example, if the advertiser spent 2,000 € and got 200 orders, the cost would be 10 € CPO (2,000 €/200).

Hybrid campaigns are based on combination of a CPM pricing method and a performance-based model such as CPC or CPA. For example, the

advertiser can pay lower CPM, but it has to add a bonus for any sales resulting from ad clicks on a given website.

There are ongoing debates on which online advertisement model is the best (Cumbrowski, 2007). In the early days of online marketing, advertisers and publishers all used the CPM model, but the online industry has lately switched toward performance-based models. From the publisher's perspective, the CPM model is more desirable as with that model publishers need to focus only on ads' trafficking. In terms of advertisers, though, the CPM model has higher risk in click-through rate (CTR), discussed later in this chapter, and conversion rate (CR), also discussed later. Among advertisers the CPA model is the preferred method because if publishers fail to produce sales, advertisers do not suffer any further financial loss. It also allows advertisers to easily manage the return on investment (ROI) of their campaigns. However, in using the CPA model, publishers need to apply some effort to improve the quality of clicks. Consequently, publishers prefer the CPC model as it gives more incentives to convert clicks into sales by focusing on driving a high volume of clicks for advertisers (Wilbur & Zhu, 2009).

On the other hand, the CPC model can cause problems for advertisers and publishers as there is a risk of potential fraud clicks that can drive up advertisers' costs. The CPA model is mostly suitable for advertisers that are risk averse and products that have a high level of market uncertainty, so this method is more beneficial for smaller advertisers that cannot afford to take the risks involved in the CPC model. Advertisers that offer products with high seasonality and irregular demand should choose the CPA model. The CPA cost model has generally higher costs compared to other cost methods. The newest pricing model, the hybrid method, decreases the risk between the media owner and the advertiser and allows campaigns to organically reach the desired ROI by price control maintenance.

Using a practitioner's lens, the most useful web metrics are as follows:

- 1 *Visit* is a measurement of single continuous set of activity to a cookie'd browser or user resulting in one or more pulled text and graphics downloads from a site (IAB, 2010). Visits are used to measure the website popularity.
- 2 *Unique visitors* represent the number of actual people who accessed a site or application one or more times and have been served a unique content or ads such as e-mail, newsletters, interstitials, and

pop-up ads (IAB, 2010). The most common technique that helps to track unique users is the cookies, which are small files that are sent to the user's browser while a user is browsing the website. The user can receive two types of cookies—persistent cookies that are temporary and are erased when the user exits the browser or session cookies that remain on the user's hard drive until they expire or until the user removes them.

- 3 *Cost per unique visitor* is the cost of the placement or application divided by the number of unique visitors (IAB, 2009).
- 4 *Page impressions/views* are a measurement of the number of respondents from a web server to page requests from a user's browser (Bhat et al., 2002). It estimates how many pages are served in a time period and indicates the webpage's exposure.
- 5 *Ad impressions* represent the response of a delivery system to an ad request from a user's browser and show the extent of the overall online ad exposure (Bhat et al., 2002).
- 6 *Time spent* is the amount of time from the start of a visit to the last user's activity linked with that visit. For the metric to be accurately counted as a visit, it should have 30 consecutive minutes of activity between events for the same user (IAB, 2010).
- 7 *Clicks or click-through* are when a user initiates action by clicking on an ad and it lands the user to another online location such as a website or another browser window (Bhat et al., 2002).
- 8 *Click-through rate (CTR)* calculates the number of clicks divided by the number of ads clicked per user, and it is one of the most accountable measures in online marketing. For example, if you received 10 clicks out of 1,000 page views, your CTR would be 1% ($10/1000 \times 100\%$). A good CTR depends on the industry and the placement; however, a 2% CTR is considered to be successful. CTR helps to capture customers' initial responses to a website, and it is easy to observe as it demonstrates a behavioral reaction (McLuhan, 2000).
- 9 *Conversion rate (CR)* is one of the most critical metrics in online marketing. CR is the percentage of visitors who followed through on the transactions (Rocher, 2005). For example, if there are 100 visitors to a particular website and one of those 100 visitors clicks on the ad and buys the product on the website, then the conversion rate for that particular ad is 1% ($1/100 \times 100\%$). The overall average of the CR varies by industry and product; however, the average CR

across the Internet is 2%, and if it decreases to 1.5%, it indicates the website/ad needs improvement.

- 10 *Bounce rate* is the percentage of users who entered the website, scanned it, and left it rather than continuing to view other pages on the same site (Dainow, 2005). This might indicate that the website did not offer what the user actually wanted.
- 11 *Return visits* measure the average number of times a visitor returns to the website or application over a specific time period (Bhat et al., 2002). This indicates the user's loyalty.

Google analytics is a powerful tool for monitoring and measuring web metrics.

3.3 Marketing analytics

Marketing analytics allow you to monitor campaigns and marketing actions as well as their respective outcomes, enabling you to spend money as effectively as possible (Leventhal & Langdell, 2013). Analytics can solve one of the biggest problems marketing departments have: measurement of marketing ROI and monitoring of the implemented marketing initiatives. More specifically, they measure whether something costs more than it returns and thus indicate the viability of a marketing plan and specific actions in the long term in such detail that permits better decisions.

The most powerful benefit that analytics offer is that they can connect the analysis with launched and future actions. Marketers can use the data they provide to build a more reliable marketing strategy based on previous actions. This gives them the flexibility to adapt their actions to the specific needs of the customers, increasing customer satisfaction.

With marketing analytics, marketers can integrate different marketing channels. They offer the possibility to analyze each channel separately, but their unparalleled benefits are measured by understanding the dynamics and overall performance of all the channels together. Moreover, the focus of marketing is the person (people-centric), not just the page view. This enables marketing departments to monitor how the potential or current customers interact with the marketing channels and actions over time.

Marketing intelligence includes all the information gathered and analyzed in a marketing department. Part of marketing intelligence is a specialized area called *social intelligence* that is used for the increasing development of the social media.

A new trend in analytics is “big data.” With the explosion of big data, analytics have become more imperative for the businesses because they have a lot of information without being able to take full advantage of it. Banner ads, tweets, posts and comments, and videos constitute unstructured data as they are not organized in a predefined manner. Structured data such as marketing databases belong to more traditional tools of marketing that complement the new trends.

Big data sets forge the future of marketing after the advent of new online marketing channels and become a key basis of competition “underpinning new waves of productivity growth, innovation and consumer surplus,” according to research conducted by MGI and McKinsey’s Business Technology Office (2011). In order for companies to be able to add and capture value from the unexploited information, they need to take big data seriously and build strategies for how to deal with it.

Many business intelligence companies have flourished during the last few years because of the continuous use of analytics. Various types of analytics software are implemented depending on the size of the company, the industry and the needs of the company. Given the channels that they use and the data and the metrics that they want to analyze, experts are able to create customized dashboards.

The latest software makes it possible to monitor “real-time data” and analyze it as soon as it is acquired, interacting directly with the customer. Time is a crucial factor of competitiveness among companies in a fast-paced environment. Predictive analytics use forecasting methods based on previous data. They use modeling, data mining, and other advanced techniques to enable marketers to make better decisions in planning for the future.

The true value of analytics is not just that they prove marketing initiatives are worth the time and money but also that they help marketers improve and optimize marketing performance. Data and information are useful only if we do something with them. We need to exploit and analyze them and understand what is really behind all the marketing actions we have taken.

3.4 Ethics, payments, and security

In any type of online situation, to build customer trust, marketers need to operate within ethical and legal frameworks. For example, when

dealing with targeted online advertising, the advertiser uses past browsing or purchase behavior information. However, consumers remain highly skeptical of this approach. Two-thirds of U.S. adults reject behavioral targeting based on their prior browsing behavior; they think that online tracking should be illegal and that websites should address these concerns (Schumann et al., 2014). In what follows we focus only on the practical aspects of payment and security in transactions.

Where commercial transactions are concerned, goods and services have to be paid for. Internet buying and selling mostly involve the use of electronic payments, which are cheaper and quicker than paper methods. However, where payments for goods and services are done electronically, security and trust become keywords in these transactions. Payment methods to be effective have to be secure, fast, easy to use, and with low transactional costs. The risk is that the financial information of the purchaser is capable of being intercepted and fraud perpetrated, meaning that consumers might be paying for goods that they have not ordered or received.

The perceived threat of online credit card fraud is strong today, occupying much newspaper space. However, software solutions like Secure Socket Layer (SSL) and new methods of payment like PayPal have improved public confidence and payment security. Encryption and decryption technology provide further security measures that can reduce the risk of a damaged reputation for a company. Obviously, reputation is very important, and damage to it would affect customer confidence and hurt any web-based operation. There are some areas in which Internet transactions are more risky than those in traditional markets: spam, phishing (hackers), and network stability (worms). Nonetheless, it should be mentioned that fraud on the web is not more serious than offline fraud (Gay et al., 2007).

When consumers make a credit card purchase from an online merchant, they transmit encrypted financial information to the merchant along with the digital certificate. At that point, the merchant sends the information to a payment gateway where it is decrypted, processed, and verified by the certification authority. The merchant receives then an approval from the financial institution of the buyer, while the cardholder's account is debited and the amount is credited to the merchant's account. All this process has to be fast, secure, and efficient. Negative e-commerce experiences erode generalized trust in online purchasing services and goods and thus have harmful effects on Internet marketing

as a whole (Mutz, 2009). Especially in sensitive services, like the Internet banking industry, where the consumer feels even more vulnerable, marketers are required to understand what are the pillars customers use to judge service quality and, in turn, security. According to some authors in the banking industry (Murkute et al., 2013) the most prominent pillar in this area seems to be efficient and fast communication with online companies when errors in payment occur. Overall, there is the need for constant monitoring and improvement of the service performance.

Finally, an issue underinvestigated in literature is the need for consumers to recall multiple passwords. The adoption of complicated password to ensure the security of transactions generally increases the frustration of the typical Internet user. On this topic we are assisting slowly at the implementation of systems based on new hardware and software solutions. These alternatives are essentially represented by fingerprint, face recognition and visual patterns.

4

Online Pricing

Abstract: This chapter is fully devoted to pricing. After explaining the many price models available for online marketing, the author discusses the general area of dynamic pricing. The issue of fairness to consumers is explored with real cases and applications from different industries. Next is an explanation of reference price, the standard against which consumers evaluate a price. Stemming from a behavioral approach, this section of the chapter investigates how people form price expectations. The objective is also to study the evolution of reference prices from a firm's perspective. Finally, there is an analysis on how to elicit reference prices from laboratory and field experiments, paying attention to internal and external validity.

Viglia, Giampaolo. *Pricing, Online Marketing Behavior, and Analytics*. New York: Palgrave Macmillan, 2014.
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4.1 Introduction

In the increasingly complex marketing environment, more and more companies operate on multiple platforms, dealing with different prices online and offline (Grewal et al., 2010). Building on previous literature, here we discuss on one hand the firm's perspective and on the other how consumers form price expectations and what prices they perceive as fair. This topic assumes relevance in the presence of price variability, within and between channels. Price discovery is a key function, because it allows the company to determine the prices at which demand and supply "clear" and trade occurs. In some markets, such as the financial ones, this is a primary function. In other markets, such as the automotive industry, negotiations take place between buyers and sellers until a price is reached. For this reason, matching buyers' and sellers' aspirations in terms of price is of paramount importance. Table 4.1, adapted from Bakos (1998), helps the reader to structure the problem.

We start from an operational point of view; then we discuss how consumers react when prices rise sharply and how they perceive price promotions.

With greater price transparency existing than ever before, understanding the needs of consumers in terms of price expectations is crucial. This and other related issues are developed within this chapter.

4.2 Revenue management and dynamic pricing

The term *revenue management* is used in many service industries to describe a variety of techniques and practices for allocating limited

TABLE 4.1 *Matching buyers and sellers as a function of the market*

Determination of product offerings
▶ Product features offered by sellers
▶ Aggregation of different products
Search (of sellers for buyers and buyers for sellers)
▶ Price and product information
▶ Matching seller offerings with buyer preferences
Price discovery
▶ Process and outcome in determination of prices
▶ The goal has to be more than just driving down costs

resources such as airplane seats, rental cars, or hotel rooms. Many methods of revenue management are used in online marketing. This process works in sectors where the revenue potential of the service or the item diminishes over time. The general areas where this technique is applied are the competitive markets where there is fixed capacity or supply, either of a product or of a service, and where there is anticipated demand.

Integrating dynamic pricing with inventory control and production offers significant opportunities for profit maximization. In the first part of this chapter we present a general discussion of revenue management techniques with their application in different industries. Next, particular attention is given to the application of the technique of overbooking, which allows increasing capacity utilization when many cancellations are present. While trying to keep complex technicality at a minimum, the last part of this chapter presents in detail how to compute the optimal level of overbooking and how to derive it mathematically.

As Krugmann (2000) has pointed out, *dynamic pricing* is simply a new version of the well-known practice of price discrimination. Dynamic pricing is a set of techniques based on varying price, with the purpose of maximizing revenues and profits (Abrate et al., 2012). Products that are usually sold at certain prices in brick-and-mortar stores (traditional and physical channels) with infrequent price changes, can be sold today over the Internet at posted prices that change daily or even hourly depending on demand and competition from other websites (Kannan & Kopalle, 2001).

Firms have always tried to sell goods at the highest possible price that consumers will pay, but in the last century they have developed many techniques and software programs based on scientific methods. Some examples are personalized pricing, markdowns, coupons, promotions, and discounts. With these tools, firms try to respond to market fluctuations of demand.

Kung et al. (2002) and Mauri (2012b) highlight the potential problem with differential, or dynamic, pricing in terms of ethics and unfairness. In the United States, Amazon's customers exposed the e-tailored pricing practice of selling the same products (DVDs) at different prices to different customers based on some segmenting variables. The company was overwhelmed with complaints but stated it was just testing consumer responses to different price levels. The reaction was so intense, however, that Amazon removed its differential pricing, giving refunds to those who had been charged the higher prices.

4.2.1 Typologies of revenue management and applications

Some industries can vary quantity in response to demand fluctuation; others can vary price. These abilities depend on the industry's level of flexibility in supplying services or products and in the definition of price. Thus, two techniques of revenue management have been developed: price-based RM and quantity-based RM. Quantity-based RM is a way of limiting supply that rations the quantity sold to customers. Price-based techniques reduce the number of sales without limiting supply but instead increasing price.

4.2.2 Industry case study: retailers

Retailers don't know at the beginning of the season which products will be more appreciated by the customers, so they fix high prices for all items initially. Products that are more appreciated (for which customers have a high reservation price) are sold out at the high initial price, while the remaining items have a low reservation price and therefore markdown pricing is a form of demand learning.

Customers that purchase early have a higher willingness to pay for many reasons (for example, they use the good for the entire season or they want to be the first to own it, in order to be trendy). Markdown pricing in this case is a segmentation strategy to distinguish price-sensitive customers from price-insensitive ones. It is very effective during peak shopping seasons (such as Christmas holidays) because at those times customers are particularly interested in searching for the lowest prices. Nowadays there are many software solutions oriented to optimize markdown decisions, and major U.S. retailers who are experimenting with them are achieving an interesting increase of revenue.

In contrast to markdown pricing, there is another way to promote purchases, particularly packaged goods: promotions. Promotions involve goods repeatedly bought by customers (e.g., detergent, food, and so forth), and they are essentially a temporary reduction of price. Two drawbacks arise:

- If the frequency of promotions is excessive, the reference price of customers for these products goes down.
- People can stockpile products, thereby reducing future demand for them.

TABLE 4.2 Types of promotions and different roles

Kind of promotion	Role of manufacturers	Role of retailers	Role of customers
Trade promotion	They agree for a discount to retailers	They can pass the discount to customers or not	They receive a discount, if there has been the <i>retailer</i> decision
Consumer promotions	None	They agree for a discount to customers	They receive a discount from retailers
Direct discount of manufacturers	They agree for a discount to customers	None	They receive a discount from manufacturers

Source: Adapted from Talluri and Ryzin (2004).

4.2.2 Industry case study: manufacturing and e-business

Other applications of these techniques, based on price or quantity (but also a mixture of the two) control have interested car manufacturers and e-commerce. Some car manufacturers, such as Ford, have applied a scientific method to identify features that customers were most willing to pay for, together with the introduction of an incentive method for the sales force based on profit and not on revenue.

In the most recent sectors of e-commerce, a lot of companies, like eBay and Amazon, have applied innovative pricing mechanisms with discounts and markdowns based on different factors, such as customer loyalty and consumer behavior. Also, in the business to business (B2B) sector, the Internet has introduced trading efficiency with the introduction of new pricing mechanisms and with more price transparency.

4.2.3 Industry case study: airline industry

This economic field is one of the most important examples of price-based revenue management. It usually increases prices based on capacity and demand. From the customer's point of view,

- ▶ the value of an early ticket is lower than the value of a later one because it is proportional to the probability of utilization (in particular for nonrefundable ones); and
- ▶ in the travel business, customers often can't plan flights in advance and also can't choose to postpone their trip.

4.3 Reference price

When purchasing a product or a service online, the reference price is an important concept. We judge the price of a product according to a reference price we have in mind, both in a static and dynamic pricing context. The literature has demonstrated that consumer choice is affected by reference prices (Briesch et al., 1997).

There are essentially two approaches to reference prices. The first one takes a behavioral perspective and uses experimental approaches to evaluate how to influence the *Internal Reference Price (IRP)* of a customer. A relevant area of research regards the inputs of IRP and the different representation of IRP in memory. In this setting the variety of buying decisions, the store environment, and the type of product being purchased are factors that increase the heterogeneity. Finally, prior experience can vary also across customers who are different in terms of price sensitivity, demographics, and brand loyalty. The second approach is based on mathematical research models and their application to consumer panel data, with statistical fit.

4.3.1 Price expectation and reference price formation

Price expectation is driven by consumers' prior experience and is influenced by the actual price. People become adapted to a certain price level, and they judge external stimuli according to the expectation-based reference. A strong effect is also an aspiration-based reference price: people judge what they have to pay according to what other people, especially in the same social group, had to pay for the same or similar product (Medias et al., 2002). Therefore, consumers acquire information over time that serves as an input to the formation of IRP.

A common model used for brand (I) and consumer (H) on purchase occasion (t) is the following:

$$IRP_{iHt} = \alpha Price_{iH(t-1)} + (1-\alpha)IRP_{iH(t-1)} + \beta Prom_{iH(t-1)}$$

IRP_{iHt} = actual Internal Reference Price.

α = coefficient that measures effect of previous price and IRP
($0 \leq \alpha \leq 1$).

$Price_{iH(t-1)}$ = previous price.

$(1-\alpha)$ = coefficient that measures effect of previous IRP.

$IRP_{iH(t-1)}$ = previous IRP.

β = coefficient that measures effect of previous promotion.
 Prom_{*iH(t-1)*} = previous promotion.

This model is recursive and, in particular, the effect of prior prices is given by the previous price and the reference price present at that time.

Here we find two coefficients: α and β :

- ▶ The larger that α is, the greater is the recency effect of prior exposures to price on IRP. A field study conducted by Dickson and Sawyer (1990) tested that the value of α ranges from 0.60 to 0.85. This implies that prices beyond two to three purchase occasions have negligible influence on IRP;
- ▶ The coefficient β associated with the variable promotion (Prom) indicates the effect of promotions on reference price. Generally, the effect is expected to be negative: the greater the deal expectation, the lower is the IRP for the brand, because if you perceive that a product is a high-quality one, you do not expect massive discounts.

There are moderators that change in the purchase context, and this can explain why parameters sometimes assume different values. These moderators depend on the occasion (e.g., a purchase made during a vacation or for gift giving), store environments (for example, the same price of a bottle of wine could be judged more favorably if it is sold in a specialty wine store than if it is sold in a discount wine store), and availability of comparative price information (in this era of the Internet, consumers may be more price sensitive and thus have lower IRPs when buying products from online retailers that present comparison).

There is a difference between brand-loyal consumers and switchers: customers who are loyal to a few brands integrate prices of only the favorite brands while switchers tend to integrate all the prices of promoted brands, unwittingly integrating incidental and irrelevant price information for a particular product. Also, promotions influence IRP formation. If we agree that promotions have a negative effect on it, marketers will have to find ways to promote products with a lower impact on the reference price. On this argument, Alba et al. (1999) found that promotion depth has a lesser effect than promotion frequency on price perception. The level of technology and the economic conditions may influence the evaluation of IRP as well.

Durable and nondurable goods have different impacts. The information acquired during prior purchase occasions is less salient in the formation of a reference price for a durable because durables have a long inter-purchase time. It is interesting to know if services, like hotel reservations and aircraft seats, are more similar to durables or non-durables. Services range from those that are purchased at regular intervals (e.g., car washes and haircuts) to those that have long temporal separations between their consumption and repurchase (e.g., consultancy) (Shugan & Xie, 2000). The first class of services is similar to durable and perishable products. Therefore, the model with memory we presented earlier, based on prior prices and promotions, should be appropriate to depict the scenario with services.

Consumers sometimes may decide between fixed fee and variable fee (e.g., euro per minute) of expected consumption. In this case it should be tested to see if a model of IRP works in both cases. Combining services and variability, we can argue that when the variable part of the price is small compared with the fixed component, consumers may retain an integrated IRP for the service, whereas if the variable part is prevalent, consumers may retain two separate IRPs for the variable and fixed parts. In a fixed-fee option, IRP is a function of competitors' prices for similar services. In a strictly variable option, IRP is a recency-weighted average amount spent in the past (Mazumdar et al., 2005).

4.3.2 Autoregressive moving average models

The model we presented depends on a previous output ($IRP_{iH(t-1)}$). The autoregressive model is one of a group of linear prediction formulas that attempt to predict an output $y_{[n]}$ of a system based on the previous outputs ($y_{[n-1]}, y_{[n-2]}, \dots$) and inputs ($x_{[n]}, x_{[n-1]}, x_{[n-2]}, \dots$).

Deriving the linear prediction model involves determining the coefficients a_1, a_2, \dots and b_0, b_1, b_2, \dots in the equation:

$$y_{e[n]} \text{ (estimated)} = a_1 * y_{[n-1]} + a_2 * y_{[n-2]} \dots + b_0 * x_{[n]} + b_1 * x_{[n-1]} + \dots$$

In particular, a model that depends only on the previous outputs of the system is called an *autoregressive model (AR)*, while a model that depends only on the inputs to the system is called a *moving average model (MA)*, and, of course, a model based on both inputs and outputs is an *autoregressive-moving-average model (ARMA)*. The case we presented contains

inputs and previous outputs; therefore, it is considered an ARMA model.

4.3.3 Reference prices in our minds

A crucial element is the way reference prices are stored in the mind of the customer. People are more accurate in recalling price ranks than in estimating numerical prices. We have a great amount of information to store in our memory; therefore, if we are able to simplify we can be more accurate. Remembering only price ranks means that we don't remember the exact price but only the position of one brand in respect to the other (e.g., De Cecco pasta is usually more expensive than Barilla).

To represent IRP in memory at aggregate levels, economists assume a model in which consumers first decide how much to budget for an expenditure category and then decide the item to purchase within that category. This assumption seems quite reasonable because the spending limit may serve as a reference for monitoring the actual spending (Heath & Soll, 1996).

Several studies on the differential use of memory for externally information versus prior prices showed that people use both memory and external information, but they assign weights depending on the product and on the consumer. The proportion of weights depends on the size of the consumer's mental consideration set: the larger the size of the mental consideration set, the more the consumer relies on external information, being not able to store everything in her or his mind. Nevertheless, even if the product category stands out among others, the weight of the price level placed in memory is more relevant.

In making a store-choice decision, consumers consider store-specific reference prices as a basis for price comparison. This way of decision making may be biased because consumers pay more attention to the prices of different products with which they are relatively familiar. The result is an erroneous sampling. For instance, one consumer might consider Carrefour (a supermarket chain) to be cheaper than Coop (another supermarket chain) just because the products that he or she buys most often are cheaper in Carrefour than in Coop, but this does not mean that Carrefour is cheaper on average than Coop.

When the task is not so relevant (low-involvement task) consumers use price memory implicitly, invoking heuristics. There can be some mistakes also here because people sometimes forget the exact position of the digits in prices.

4.3.4 Purchase-timing decisions (speed)

Reference prices have a significant effect on consumers' purchase-timing decisions (that is a critical factor for most services and durable product purchases): they evaluate *when* it is time to buy according to the difference between the actual category value and the reference category value. In particular, they postpone a purchase if they perceive a loss, and they accelerate a purchase if a gain is perceived. The degree of these two situations is different according to prospect theory—that is, loss aversion dominates gain perception; therefore, the degree of acceleration is exceeded by the degree of postponement.

The reference price effects are generally estimated by pooling cross-sectional data and a time frame. This approach should be tested with a panel data analysis with random effect to eliminate the chance of obtaining confounding effects at the individual level. For example, price-sensitive consumers have a lower reference point because, on average, they pay a lower price.

Now we analyze strengths and weaknesses of two approaches: panel data and prospect theory.

4.3.5 Panel data analysis

When we suspect that the outcome variable depends on explanatory variables that are not observable but correlate with the observed explanatory variables, panel data analysis allows us to estimate the effect of the observed explanatory variables. The model requires that such omitted variables be constant over time and that there be few time periods (t) and many individuals (N).

Consider the multiple linear regression model for individual $i=1, \dots, N$ who is observed at several time periods $t = 1, \dots, t$

$$y_{it} = \alpha + \beta_1 x_{i1t} + \dots + \beta_K x_{iKt} + c_i + u_{it}$$

where y_{it} is the dependent variable, x_{i1}, \dots, x_{iK} are K explanatory variables, α and β_1, \dots, β_K are $K+1$ regression parameters, c_i is an *individual-specific effect* and u_{it} is an *idiosyncratic* (that changes across time and unit) error term.

The data generation process is described by these features:

- ▶ *linearity*, meaning that the model is linear in the parameters α, β_s , in the individual effect c_i and in the error u_{it} ;

- ▶ *independence*, because the observations are independent across individuals but not necessary across time (assuming independence across time is unrealistic); and
- ▶ *strictly exogeneity*, because the idiosyncratic error term is assumed uncorrelated with the explanatory variables of all past, current, and future time periods of the same individual and with the individual specific effect.

The remaining assumptions are divided into two sets of assumptions: the random effects model and the fixed effects model:

- ▶ In the *random effects model*, the individual-specific effect is a random variable that is uncorrelated with the explanatory variables of all past, current, and future time periods of the same individual. Furthermore, it assumes that the regressors including a constant are not perfectly collinear, that all regressors (but the constant) have non-zero variance and not too many extreme values;
- ▶ In the *fixed effects model*, the great difference is that the individual-specific effect is a random variable that is allowed to be correlated with the explanatory variables.

The random effects (RE) estimator is the feasible generalized least squares (GLS) estimator. GLS transforms the data (dependent and explanatory variables) such that the error terms in the transformed model are uncorrelated across all N individuals and all time periods (t).

For the fixed effects (FE), subtracting time averages \bar{y}_i from the initial model

$$y_{it} = \alpha + \beta_1 x_{it1} + \dots + \beta_K x_{itK} + c_i + u_{it}$$

yields a *within model*. Note that the individual-specific effect c_i and the intercept α cancel out each other. Also note that time-invariant regressors cancel out each other as well. The fixed effects estimator estimates the within model by OLS. The idiosyncratic errors are often likely serially correlated when $t > 2$. Therefore, one assumption we made is unrealistic. Bertrand et al. (2004) show that the usual standard errors of the fixed effects estimator are drastically understated in the presence of serial correlation. It is therefore advisable to always use cluster-robust standard errors for the fixed effects estimator.

The random effects model can be consistently estimated by both the RE estimator or the FE estimator. The former is efficient while the

latter is inefficient. So we would prefer the RE estimator if we can be sure that the individual-specific effect really is an unrelated effect. This can be tested by a (Durbin-Wu-) Hausmann test. The test is performed by comparing the estimated β_{RE} and β_{FE} for the subset of coefficients of time-varying variables:

$$H \sim \chi^2_j \text{ asymptotically}$$

follows a χ^2 distribution with J degrees of freedom where J is the number of time-varying regressors. The null hypothesis is that the individual specific effect is uncorrelated with the regressors, and the errors are equicorrelated. Under H_0 , the estimated β_{RE} is consistent and efficient, and the estimated β_{FE} is consistent but inefficient; under H_A the estimated β_{RE} is inconsistent, but the estimated β_{FE} remains consistent.

Finally, we often also suspect that there are time-specific effects δ_t that affect all individuals in the same way

$$y_{it} = \alpha + \beta_{i_{it}} + \dots + \beta_K x_{itK} + \delta_t + c_i + u_{it}$$

We can estimate this extended model by including a dummy variable for each time period.

4.3.6 Nonparametric tests

When faced with comparing different distributions and data we will use nonparametric tests. The starting point is a Kolmogorov-Smirnov test, which tests whether or not the sample of data is consistent with a specified distribution function (for example, a normal distribution). When there are two samples of data, it is used to test whether or not these two samples may reasonably be assumed to come from the same distribution. The Kolmogorov-Smirnov test does not require the assumption that the population is normally distributed.

If the number of observations is not large enough to test the normality (or a different distribution such as the t-student) it is possible to use tests which involves ranked data, i.e. data that can be put in order of dimension. All these tests are nonparametric.

The Wilcoxon Signed Ranks test is designed to test a hypothesis about the median of a population distribution. It often involves the use of matched pairs—for example, before and after data—in which case it tests for a median difference of zero. This test does not require the assumption that the population is normally distributed.

Step by step, the test takes the absolute difference $|X_a - X_b|$ for each pair; it omits from consideration those cases where $|X_a - X_b| = 0$; it ranks the remaining absolute differences, from smallest to largest, employing tied ranks where appropriate; it assigns to each such rank the “+” sign when $X_a - X_b > 0$ and the “-” sign when $X_a - X_b < 0$, and then it calculates the value of W for the Wilcoxon test, which in the present version of the procedure is equal to the sum of the signed ranks.

4.3.7 Prospect theory

In expected utility theory, when one makes a choice it is to maximize the level of wealth, choosing the optimal decision. Prospect theory, on the contrary, is a descriptive model that tries to model real-life choices. The theory, developed by Kahneman and Tversky (1979), describes how individuals evaluate potential losses and gains. The reference point separates losses from gains and success from failure.

It is a two-step process: in the first phase people decide which outcome they see as a reference, considering a lower outcome as a loss and a larger as a gain. In the second phase they choose the alternative with the highest utility. In Figure 4.1 we see how to judge gains and losses with a prospect theory approach. We see that the displeasure of a loss is felt more intensively than the pleasure of an equivalent gain.

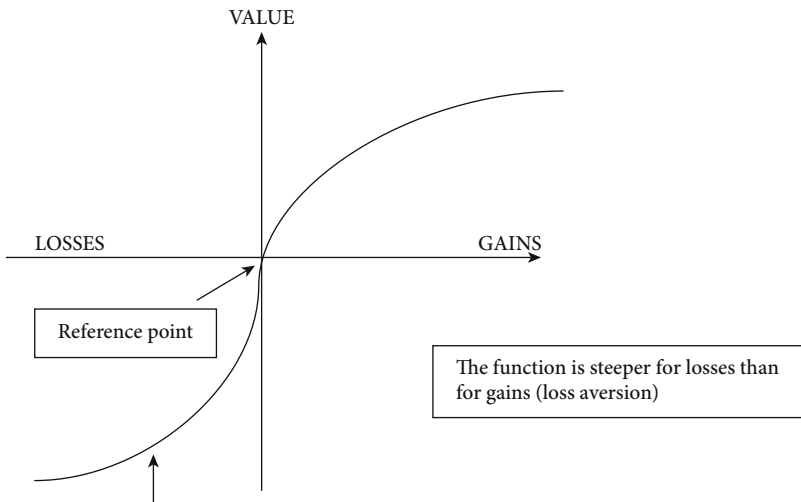


FIGURE 4.1 Prospect theory function

From the graph we also see that, according to prospect theory, people do not treat probability linearly. For example, it is preferred, on average, to obtain a certain gain of 300 € than to gamble with an 80% of obtaining 400 € and the remaining 20% of obtaining 0 €. The rational approach based on expected values would suggest exactly the contrary.

Focusing on the probability of an event, we can represent the dissimilarities from a standard approach as shown in Figure 4.2.

In this graph, on the y-axis there are the decision weights and on the x-axis the different levels of probability. We can see that people tend to overreact to small probabilities, but underreact to large probabilities. For example, in the graph, if the probability of a particular event is quite large, let's say 80%, people tend underreact with respect to a linear function. In contrast, for a rare event, with a risk of 5%, people overreact. In the graph we can see why people generally prefer to have an insurance policy even if the risk is limited: individuals tend to overweight small probabilities.

The basic formula of prospect theory to derive the utility is the following:

$$U = \sum_{i=1}^n w(p_i) v(x_i)$$

where w is the probability weighting function that gives that particular form of concavity-convexity to the latter function in the graph, while v is a value function that assigns a value to an outcome in the former graph.

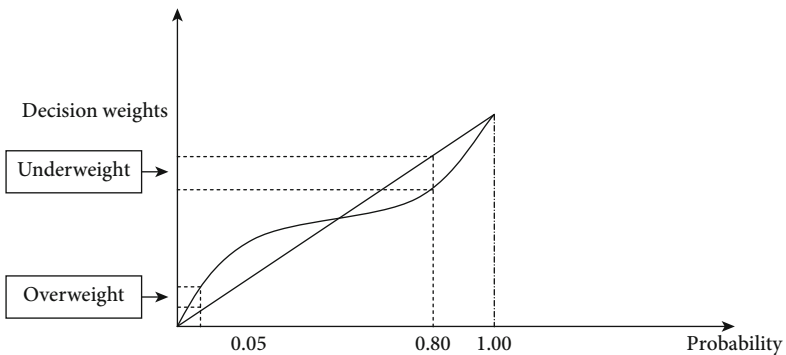


FIGURE 4.2 *Decision weights*

To sum up, we can identify four patterns:

	POSITIVE EVENT	NEGATIVE EVENT
LARGE PROBABILITIES	Risk avoiding	Risk seeking
SMALL PROBABILITIES	Risk seeking	Risk avoiding

To clarify with some examples:

- ▶ If one has to choose BETWEEN a gamble with a chance of 80% to gain an amount of 400 (the remaining 20% to obtain 0) AND obtaining only 300 but without risk, one will prefer, on average, 300 for sure (positive event and large probabilities imply risk avoiding).
- ▶ If one has to choose BETWEEN a gamble with a chance of 80% to lose an amount of 400 (the remaining 20% to lose 0) AND losing only 300 but without risk, one will prefer, on average, the gamble (negative event and large probabilities imply risk seeking).
- ▶ If one has to choose BETWEEN a gamble with a chance of 5% to win 1,000 (the remaining 95% to obtain 0) AND obtaining only 60 but without risk, one will prefer, on average, the gamble (positive event and small probabilities imply risk seeking).
- ▶ If one has to choose BETWEEN a gamble with a chance of 5% to lose 1,000 (the remaining 95% to lose 0) AND losing only 60 but without risk, one will prefer, on average, losing 60 for sure (negative event and small probabilities imply risk avoiding like an insurance coverage).

The preceding shows clear inconsistencies, and it cannot be formalized using an expected utility approach. If someone is risk seeking, he or she will be consistent across positive and negative events and low and high probabilities. This effect is called the *pseudocertainty effect*, and it represents the fact that people are riskaverse or riskacceptant depending on the amounts involved and on whether the gamble relates to becoming better or worse off. That is why the same person may buy both an insurance policy (demonstrating risk aversion) and a lottery ticket (demonstrating risk seeking).

Finally, in 1998 Prelec proposed a specification for the weighting function $w(p)$:

$$w(p) = e^{-(\ln p)^\gamma}$$

where the parameter γ gives the convexity and concavity of the function. Specifically, with this formulation the function crosses the 45° line at $p = 1/e \approx 0,37$, and a decrease in γ causes Prelec's weighting function to become more concave to the left of $1/e$ and more convex to the right of $1/e$. Figure 4.3 shows some of the different possible curvatures of the Prelec's function according to different values of the parameter γ (individual distinction depends on personal reference points).

4.3.8 Reference price: construction

As we discussed before, the reference price is a sort of price expectation based on a person's memory or contextual information plus some other factors that cause heterogeneity. Variables that influence its construction

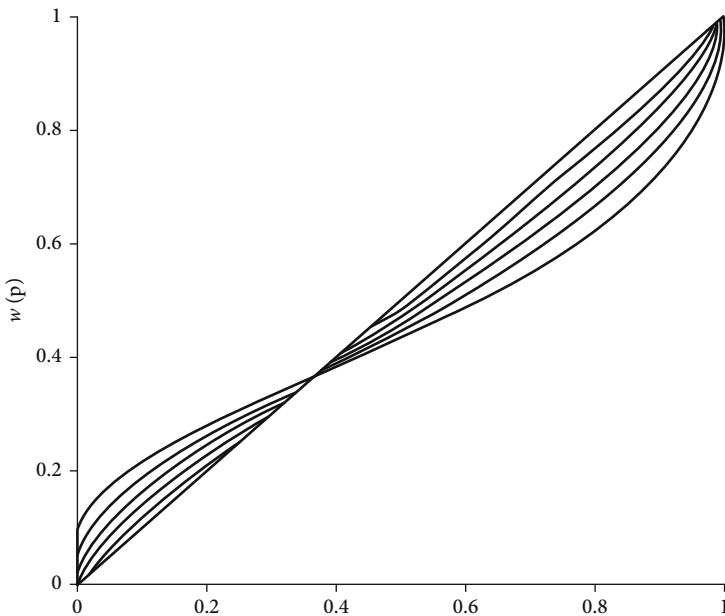


FIGURE 4.3 *Prelec's curvatures*

include seller's cost, social comparison effect, adaptation or recursivity, and loss aversion. Therefore, we analyze them.

Some consumers are aware of the *seller's cost*. If we present to these consumers a series of data showing them different prices, it is possible that they might consider a price *fair* even if it is not the lowest price in the series of data. For example, if we sample some prices of a Ryanair ticket for a certain route, a passenger may consider it fair to pay 25 euro one way even if the lowest price for that route is only 4 euro. Obviously, this argument is true also for very high prices that are perceived to be unfair.

Another important factor is the *social comparison* effect: aspirational reference price may be considered as a function that considers what others in a social group (friends or colleagues) paid for the same or similar products. If a close friend paid only 4 euro for a flight on our route with Ryanair, then this price can become the fair price to us because we will adjust downward our reference price. Aspirational benchmarks are especially likely to be evoked when the way firms use discriminatory pricing (e.g., hotel and airline pricing) is not clear. In some models reference points are only a function of past information (*adaptation*) whereas in others the new reference point is a function of the previous reference point and the previous piece of information (*recursivity*).

Loss-averse consumers consider the reference price equal to the most recent purchase price because they are interested to compare on a one-to-one scale whether there was an improvement (prices are lower) or a loss (prices are higher) from the status quo.

Non-purchase prices such as the previous period's price or historical peaks are used if no purchase periods are present, and most authors employ the highest, the lowest, and the most recent price as reference price.

4.3.9 Reference price: firms' strategies

Reference price influences (1) strategies of firms, to increase revenues; and (2) strategies of consumers, to obtain discounted prices. Firms' strategies depend on the type of market, loss aversion, role of the bundle, incentives to encourage or discourage consumption, and consumer targeting.

Starting our analysis of the aforementioned elements, Greenleaf (1995) shows that the optimal pricing trend for a monopolist to increase

revenues is to adopt a cyclical pricing policy. This behavior holds also for an oligopoly, even with some problems of heterogeneity.

In online settings is easy for a firm to make experiments. For example, firms can present a default option to create an anchor and then to control the subsequent variation of attributes. Loss aversion plays a role also here. In a world (setting) dominated by loss aversion, the optimal strategy is a constant price because loss-averse customers tend to easily adapt to a downgrade but not to an upgrade of prices.

Reference prices may also be used by customers in evaluating bundle prices. In this case, the value that can be obtained through bundling is the following: firms can capture consumers' interests by framing a low price for the core component (e.g., a personal computer) that serves as an anchor to evaluate bundles (e.g., a personal computer plus a printer).

There are ways to encourage and discourage users to consume. Services like utilities can inform users that their usage exceeded their norms to discourage usage; commercial retailers can use advertising to increase usage and revenues. Moreover, some firms can decide to apply a combination of fixed and variable fees in which a heavy variable fee may discourage massive use of the product or service.

Different segments of customers have different reference prices, so firms should use appropriate strategies to target each segment. We saw that consumers may retain mental reference prices in non-numeric forms, and price communication messages need to be consistent with these qualitative and quantitative representations.

4.3.10 Experimental approach

Two factors in an experimental approach are (1) the design of the experiment and (2) its randomization relevance.

Design of experiment: laboratory, field, or observational data setting

An experimental approach can test the validity of the purposed theories, revealing market mechanisms. The design of an experiment is a fundamental aspect. The first choice is between a laboratory setting and a field setting. In a laboratory setting, everything but the variable we want to manipulate is controlled, and the main concern is "external validity." In the field, where we simulate a real setting, the main concern is "internal validity."

Internal validity refers both to how well a study is run (design, how variables were measured, and so forth) and how one can conclude, with a certain degree of confidence, that the observed effects are produced only by the independent variable that is manipulated. The question we have to address is the following: Is it really the treatment that causes the difference between the subjects in the control and the treatment groups?

External validity represents the extent to which a study's result can be generalized, or applied to other settings or people. An example where the external validity is violated is the following: If subjects are not randomly selected from a population, then their characteristics may bias their performance; therefore, the results of the study may not work in other settings.

To clarify the concept, consider this argument: Women who receive hormone treatment are on average less exposed to cancer; therefore, we know that taking hormones is a way to reduce the chance of getting cancer. There is a clear flaw in this argument caused by confounding factors: (1) women on hormone treatment are systematically different from other women because they visit a doctor (blood cholesterol control, better nutrition, and so forth), (2) they are better informed, and (3) they may have different genes. Practically speaking, we would observe better outcomes in such women even if there were no effect from hormone treatment.

With binary treatments, there are two potential outcomes: the outcome (y_i) without treatment and the outcome with treatment. The *treatment effect* is the difference between these two potential outcomes.

Another way to run experiments is to conduct them in the field or to work with observational data. We typically have to rely on *observational data* to answer causal questions in social sciences. In fact, observational data are less expensive than experiments. They are derived from surveys (telephone interviews, census, and so forth) or administrative records (health insurance records, social security records, and so forth). We have to make sure that there is nothing else that could potentially explain the observed correlation. Major problems can come from omitted third factors, sample selection, and also reverse causality, which means that the cause is considered as an effect and vice versa.

Observational data will never be able to give you an answer if you cannot think of an experiment that would test the same hypothesis. The aim is to use data to mimic experiments and, in particular, to mimic randomization and control groups. Thinking about how to set up an

accurate experiment helps to correctly specify the causal question that the observational data may (or may not) answer.

Randomization relevance

Fundamental problems of causal inference are generated by the outcome that is not observed, which is called the *counterfactual* outcome. We are never able to observe both potential outcomes. To clarify this concept, consider a company that just started to apply revenue management and dynamic pricing when a severe crisis hit, which it survived. We will never know if this company would have survived the crisis without the use of revenue management.

The ideal solutions to these problems are randomized controlled experiments (Hinkelman & Kempthorne, 2008). In randomized controlled experiments we can rule out any other factor that could explain observed differences. We can achieve this by the use of a control group and randomization. The population is divided into a treated group and a control group, followed by randomization assignments. This allows to measure directly the effect of the manipulating variable, testing the causal relationship.

5

A Peculiar Type of Revenue Management: Overbooking

Abstract: Chapter 5 presents in detail the concept of overbooking, a revenue management technique used to maximize profits. The approach of this whole chapter is analytical, with the use of mathematical formulas. In addition, there is a discussion of the behavioral consequences, particularly in terms of unfairness, in line with what was highlighted in previous chapters.

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5.1 Overbooking

Overbooking is a marketing practice concerned with increasing capacity utilization in a reservation-based system when there are significant cancellations (Viglia, 2013). Its purpose is maximizing profit, through the growth of the total volume of sales, in the presence of cancellation. It is the oldest type of revenue management practice (for a complete review, see Mauri, 2012a), with many applications in various fields of economics. In particular, it has been applied to the airline industry, where about 50% of reservations result in cancellation or no-shows (the difference between cancellation and no-shows is that the first is a reservation that is terminated by a customer before the time of service while in the last case the customer does not cancel the reservation but just fails to show up at the time of service), and about 15% of all seats would go unsold without the practice of overbooking.

Recently new techniques of revenue management have received more attention than overbooking—for example, fare-class allocation and pricing. Yet overbooking remains crucial because of two points of view: managing its negative effects of denying service on the customer relations side, and, on the planning level, controlling parameters of a probability distribution to balance the potential risk of denied service against the rewards of increased sales.

5.1.1 Reservation, cancellation, and consequences

A reservation is a forward contract between a firm and customer, and it gives customers two rights:

- ▶ “reservation right,” which is the right to use a service in the future at a fixed price; and
- ▶ “cancellation right,” namely the option to cancel (in some case with a penalty) before the time of service.

Customers value both reservation and cancellation rights (see Table 5.1) for the following two reasons:

- ▶ They value reservation in particular when the costs of availability at the desired time are higher than the costs of availability prior to the time of consumption.
- ▶ They value the option to cancel reservations for the flexibility it allows to change their plans if preferences change.

TABLE 5.1 *Reservation rights and cancellation rights*

	Reservation rights	Cancellation rights
Definition	Option to use a future service at a fixed price	Option to cancel before the time of service.
Frequency	Always contemplate in contracts	Often contemplate in contracts
Customer advantages	Avoid high costs of unavailability at the desired time	Flexibility
Firm obligations	Preserve reservation (or, if impossible, pay appropriate compensation)	Hold up opportunity cost

In this way the firm has a two-sided risk: to honor the reservation when customers show up (or provide high compensation if it cannot honor the reservation), and in cases when customers cancel or do not show up, to bear the opportunity cost of wasted capacity. Firms try to manage this risk through a combination of cancellation penalties and overbooking.

Penalties have the power to limit potential abuse of customers' multiple reservations. They range from minimal charges to full price, but if penalties are too large, the cancellation option has little value for customers.

To further reduce the costs of cancellation, a firm may adopt overbooking strategy, which is accepting more reservations than its capacity to serve and thus taking the risk that the number of surviving reservations will be within capacity. This strategy may involve important problems (see Figure 5.1):

- ▶ legal and regulatory implications of failing to honor the reservation contract;
- ▶ managing situations in which service must be denied; and
- ▶ developing methodologies to control the level of overbooking on an operational basis.

5.1.2 Managing oversales

Overbooking may involve negative effects on customer satisfaction and denied service costs (Smith et al., 1999). Managing compensation and selection of customers in the event of oversales can reduce this impact. The main issues involved in managing oversales are

- ▶ compensation for denied service;
- ▶ selection of customers involved in oversale; and
- ▶ oversales auction.

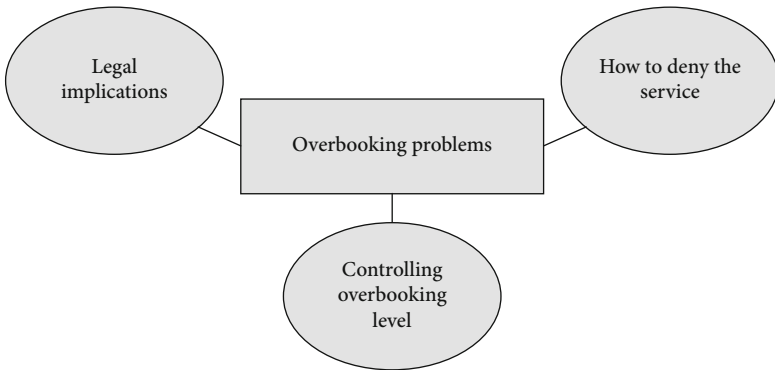


FIGURE 5.1 *Overbooking problems*

Compensation for denied service

Although legally compensation often specifies payment of monetary damage, this is often viewed by customers as inadequate. For example, a car rental customer who is planning to take a holiday tour would most likely find the prospect of getting a full refund plus 50% of the contracted rental rate as a poor compensation for a ruined vacation. It is often more effective to offer customers a substitute service (for example an upgrade) plus ancillary services: this is frequently less expensive for a firm and more effective for customer satisfaction than just monetary compensation.

Selection of customers involved in oversales

This criterion for selection of customers regarding oversales can have a significant impact on the firm's direct costs and customer goodwill. From a legal point of view, such selection must not be discriminatory. For example, U.S. Department of Transportation regulations state that every carrier shall establish priority rules for determining which passengers holding confirmed reserved space shall be denied boarding on an oversold flight in the event that an insufficient number of volunteers come forward; such rules shall not cause any advantage or disadvantage to any particular person.

The default selection is usually on a *first come, first serve (FCFS)* basis, so customers are encouraged to arrive on time, but there are many business situations where this allocation is undesirable. For example, hotel overbooking, in which the application of the FCFS basis would create

important difficulties to customers who arrive very late in the evening could create severe problems for the hotel. It is difficult to relocate a customer who arrives late at night, often tired and irritable—and customers who arrive late are typically business travelers who pay the highest rates, travel often, and represent the most profitable segment for most hotels.

Therefore, hotels use an alternative criterion: they monitor arrival rates during the day to anticipate oversold condition, and if at some point they expect an oversale, they look for alternative arrangements for early-arriving customers.

In some service situations, it is possible to select among a pool of “volunteers” during the allocation of services. For example, in airline boarding, gate agents can select specific passengers (such as young, student travelers, and so forth) for denied-boarding offers. The goal is to select targets that are eager to receive a nice hotel room and a good meal in exchange for taking a flight the following day.

Oversales auction

Another method is to conduct an auction to attract volunteers to give up their reservation in exchange for compensation. This practice is now widespread in airlines, but the idea was not well received initially because it didn't appear decorous.

The most important lessons about overbooking come from the airline industry and are as follows:

- ▶ Customers need time (decades) to accept overbooking practices, and providers have to learn how to develop painless strategies for them.
- ▶ Some seemingly fanciful techniques, such as oversales auctions, are critically received; therefore, innovation must be introduced with caution.
- ▶ Overbooking, now a well developed practice for airlines and hotels, nevertheless remains a primary source of dissatisfaction for customers.

5.1.3 Static overbooking models

The simplest and most used methodology for making overbooking decisions is based on static overbooking models. They determine the maximum number of reservations (called *overbooking limit*) to hold at the current time, given estimates of cancellation rates from the current time until the day of service, and they are periodically recomputed to control cancellation probabilities over time. With these models the distinction

between cancellations (that would give the opportunity to the firm to replace the cancelled reservation) and no-shows (that doesn't give this opportunity) is unnecessary, because they assume a static overbooking limit without necessity to adjust it.

These models recalculate cancellation and no-show probabilities over time, resulting in overbooking limits that vary (usually decline) over time. Overbooking limits are set initially high because the probability of a reservation being cancelled prior to the time of service or no-showing is usually higher. As the time of selling (t) approaches, the overbooking limits fall. At the same time, reservations are being accumulated in the system over time.

With overbooking in place, the reservations can exceed the capacity and yet it is not necessary to stop accepting reservations until the overbooking limit is reached. At that point reservations are rejected. The resulting "show" demand is ideally close to the capacity.

The binomial model

The binomial model is the simplest static model, in which a no-show is treated as a cancellation.

Its main assumptions are that

- ▶ customers cancel independently of each other;
- ▶ each customer has the same probability of cancellation; and
- ▶ cancellation probability depends only on the time remaining till service.

The symbols used are the following:

t = time remaining to service

C = physical capacity

y = number of reservations on hand

q = probability that a reservation currently on hand shows up at the time of service

$1-q$ = probability that customers cancel prior to the time of service.

Under the assumption stated here, the number of customers who show up at the time of service, given there are y reservations on hand, is denoted $Z(y)$ (the *show demand*), and is binomially distributed:

$$P_y(z) = P(Z(y) = z) = C_{y,z} q^z (1-q)^{y-z}, \quad z = 0, 1, 2, \dots, y \quad [1]$$

$$F_y(z) = P(Z(y) \leq z) = \sum_{k=0}^z C_{y,z} q^k (1-q)^{y-k} \quad [2]$$

5.1.4 Overbooking-limit policies

Two different kinds of overbooking-limit policies are adopted by firms. One is based on economic criteria. The other is based on service-level criteria according to the following:

Type 1 service level, which measures the probability of oversale at the time of the service; and

Type 2 service level, which measures the long-run fraction of customers who are denied service.

In the *Type 1 service level*, firms accept a limited number of reservations, called x , and they continue to accept them up to the achievement of this target. The equation of this type is

$$s_1(x) = P(Z(x) > C)$$

where $s_1(x)$ is the probability to exceed the overbooking limit and to be inadequate in providing the service to the customer. In particular, with a limit of x , the probability to deny service doesn't surpass $s_1(x)$.

In the *Type 2 service level*, the long-run fraction of customers dissatisfied, denoted by $s_2(x)$, is represented by the following formula:

$$s_2(x) = F_{x-1}(C-1) - (C/q_x)F_x(C)$$

Fixing an overbooking limit x , the maximum value of the fraction of customers dissatisfied is represented by $s_2(x)$.

The aforementioned formula is convenient for computation with the utilization of specific tables that report Type 1 and 2 service levels for specific values of C and q , in relation to a desired service level. For example, if we want no more than 1% of customers to be denied service, and we want a capacity of $C = 150$ and $q = 0,85$, we should search the largest value of $s_2(x)$ less than 0,01 that corresponds at an overbooking limit of 175.

If we receive a number of reservations that is fewer than x^* , the service level will be greater than $s_1(x)$ and $s_2(x)$ resulting from the computation; therefore, with these formulas we obtain the worst-case (not the average-case) service level. The average-case service level $[S_2(x)]$ is given by the following equation:

$$S_2(x) = \{E[\min(D,x)s_2(\min(D,x))]\}/\{E[\min(D,x)]\}$$

With specific tables, it is possible to search the largest value of x that provides an average level, $S_2(x)$, that is within the desired limit.

The average-case service level is not very useful because on congested days customers will experience a service level closer to $s_2(x)$ than $S_2(x)$; this is called “inspection paradox” and justifies the prudent utilization of $s_2(x)$.

Overbooking based on economic criteria calculates the estimate revenue loss from not accepting additional reservations and the cost of denied service. Hence, hereafter we analyze these costs and the potential revenue loss. A common assumption is that each denied-service costs the firm a constant marginal amount h , that is,

$$c(z) = h(z - C)^+$$

where

z = customers show up on the day of service; and

$c(z)$ = denied service cost, which we assume is an increasing function of z .

The total expected profit is given by the following equation:

$$V(y) = py - E[c(Z(y))]$$

where

y = reservations on hand;

p = marginal revenue generated by accepting an additional reservation; and

$Z(y)$ = number of customers who show up the day of service, out of y reservations.

It is optimal (because V function is concave) to accept the y^{th} reservation until the marginal profit [expressed by $\Delta V(y) = V(y) - V(y - 1)$] is positive.

Therefore, the optimal overbooking limit x^* is the largest value of x that admits

$$\Delta V(x) = E[c(Z(x))] - E[c(Z(x - 1))] \leq p$$

6

Case Study: Applications for the Hotel Industry

Abstract: In the concluding chapter, as a review of the concepts of the previous chapters, the author presents a case study applied to the hospitality industry. In particular, the power of online travel agencies, as opposed to that of the hotels themselves, in recent years in regard to booking rooms is explored. These findings apply widely to other services, such as airlines and car rental businesses. To respond to very recent new information, the chapter also presents tentative possible future scenarios, starting from the specific case of online travel agencies.

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6.1 Introduction

The hotel industry is an appropriate example to use for applying the online marketing practices discussed in this book and for understanding the dimensions of this massive marketing tool—the Internet. Simply put, with the emergence of Internet, hotels had to adopt new methods to market their services.

It all started in the late 1990s when hotels made static websites consisting of scanned brochures. Guests started sending e-mails, but, due to lack of IT resources, it was time-consuming and costly to reply to each guest and confirm bookings. Archer et al. (2003) suggested why small and medium hotels have been slow to adopt Internet solutions in supply chain and procurement transactions: cost of innovation, lower transaction volumes, and problems associated with integrating information. For these reasons, online travel sites came into existence with their own booking engines that allowed guests to instantly receive booking confirmations after filling a form. The use of the Internet as an information medium has greatly increased price and rate transparency as well (O'Connor, 2003). Meta-search websites have allowed travelers to more easily make comparisons among many different hotel offers. This led to the creation of *online travel agencies (OTAs)* becoming a key business driver (Kim et al., 2007).

Expedia, Priceline, Travelocity, and Orbitz are some examples of OTAs that offer hotel rooms, air tickets, rental cars, and other hospitality-related services. OTAs enable guests to compare other hotels in the same area with same star level and facilities by reading guest reviews. The increase in business from OTAs prompted large hotel chains like Marriott and Starwoods to create more dynamic websites and offer unique services like instant booking confirmations, discounts, and promotions via the Internet. Currently, OTAs, large hotel chains, and travel sites are all striving for dominance in the virtual marketplace. Small and independent hotels are trying to figure out their best way to compete in the Internet marketplace.

The majority of customers these days do not search for hotels in the yellow pages or call to book rooms, but instead they book via the Internet themselves or through *global distribution systems (GDS)* of travel agents. Traditional methods of cold calling and making appointments to increase hotel bookings still work to an extent, but hotels need to have a virtual presence to really succeed. OTAs are able to reap benefits from

Internet marketing, but what are hotels doing to keep up with the changing marketing trends birthed by widespread use of Internet worldwide?

According to the United Nations World Tourism Organization (UNWTO) data, international tourism started to decline in mid-2008, leaving the hotel industry to face low occupancies (Andreas et al., 2010). The hotel industry has exhausted traditional methods of marketing and is now trying to distinguish itself from OTAs and competitors in order to maintain or increase revenue from web sources.

The traditional ways to market a hotel still have a use since customers tend to use travel agents and tour operators mostly when buying sophisticated travel products. Especially for booking multiple destinations, customers like to rely on a personal travel agent in case something does not go as planned. However, with changing customer patterns, hotels need to have an online presence to gain more bookings. According to an Irish Tourism Report,

The Internet has already transformed the way in which visitors research, plan and purchase their trip. The Internet's power as a marketing tool cannot be ignored and should not be underestimated, and tourism product providers must respond actively to the opportunities that it offers—or suffer the consequences. (CHL Consulting Company, p.viii)

OTAs have built up a level of visibility and a network that hotels cannot match (Lee et al., 2012). When a search is made via any search engine for hotel bookings, OTA results show up before large chain hotels. OTA and hotel websites are targeting the same Internet users that make them direct competitors in the online world. In this chapter we will investigate how this happens and how hotels can improve their online presence.

6.2 Impact of online travel agencies on hotels

OTAs dominate the hotel industry and they witness continuous growth, allowing for flexible pricing policies (Garcia & Angel, 2013). More than 95% of hotels confirm that the OTAs' share increased or held steady during the past three years. For the majority of participating hotels, the OTAs' revenue and occupancy exceeded their direct Internet revenue and occupancy. Some reasons why OTAs dominate follow:

- ▶ more trustworthy
- ▶ brand image

- ▶ 24-hourcall center facility
- ▶ security
- ▶ reward points
- ▶ incremental revenue
- ▶ rate comparison possible with peer reviews
- ▶ last-minute bookings
- ▶ brand management
- ▶ able to offer large discounts without hurting brand
- ▶ “we are on your side” in customers’ eyes

The Internet has changed the way hotel rooms are distributed. Independent hotels are not able to achieve the same economies of scale as large hotel groups, franchises, and consortia in terms of media advertising, but now all hotels have a similar playing field in online marketing. With the Internet being widely used for reservations, good online reviews provide a key advantage because 24% of travelers who book rooms research reviewed sites on the Internet. Every hotelier needs to understand the full importance of the Internet: a website is not just an electronic brochure.

Hotelier Daryl Jaeger has summed up the OTAs’ benefits and shortcoming as follows: “OTA’s bad side is distribution cost and rate parity rules that work to their advantage. They have a lot of power. OTA’s good side is their level of visibility and their network. It’s a trade-off” (<http://blogs.sas.com/content/hospitality/2012/01/12/are-hoteliers-losing-control-of-their-inventory/>) OTA’s commission may never go down, so the only course of action is for hotels to launch their own campaign to be visible on the Internet. This is not easy and not cheap. Such a campaign encompasses website overhaul and search engine optimization (SEO) strategy, operating a blog, and actively managing social media and hotel-review websites. Done correctly, these efforts will drive more traffic to the hotel website, and if the site is attractive enough, visits will convert into bookings. Currently the conversion rate from lookers to bookers on hotel websites is less than 5%. If that ratio increases, hotels can sell less through OTAs, bringing their distribution cost (commission payments) down.

Hotels require online marketing strategy to gain their share of online business. They have to set targets to increase their direct bookings to an extent that they are always above online booking sites’ percentages. The result will be less commission for the online booking sites and less expense for the hotel—and more savings for the customer.

OTAs have been trying to offer lower rates, which is not what every customer demands. Customers have different needs and therefore

product differentiation is required. Products should be designed for the customers, but that is not happening at the moment in travel industry.

In regard to airlines, OTAs have access to personal data that includes preferred airline seats, meal choice, and frequently used destinations. They can notify customers if their preferred seat is available and show the flights with preferred layover stop sen route to destinations. Similarly, hotel websites have access to their customers' preferences and can offer the same room and location where the customer stayed before. They can show nearby places to eat and activities to do instead of only promoting hotel restaurants and services. And there are some more ways to offer customers differentiated products from third-party vendors and thus make commissions. For example, the customer can be offered a rental car service from the hotel's website, day tours can be sold as well, and tour guides can be secured. Hotels can learn from Amazon.com, which is selling products of different retailers according to customers' preferences.

KLM Royal Dutch Airlines is planning to offer an option for customers to choose their seatmates from Facebook or LinkedIn profiles. Malaysia Airlines will offer a service for passengers to find out if their friends from social media sites are on the same flight. Hotels can use similar technology to their advantage, allowing guests to find out if their friends are staying at the same hotel or at a different hotel in the same city during the same dates. Such benefits for customers require an integration of their accounts with social media sites.

Selling a product isn't the beginning of a company's relationship with customers; that starts when they first become aware of its brand. Likewise, the relationship doesn't end at the point of sale, because every interaction with customers is an opportunity to foster their loyalty or lose their future business (Carey et al., 2012).

EXAMPLE 1 *Amari Hotels*

Amari hotels are using every possible means to obtain business directly from end users. Sunish Sadasivan, director of revenue, states that they are targeting 50–55% of the online business to come from their website by 2013. At the moment, OTA occupancy (12%) is higher than direct Internet occupancy (9%), so this is a very ambitious goal, but it is also very possible to achieve by means of certain efforts to increase online business. For example, in mid 2011, the company invested in a platform to help avoid missing mobile

customers that have other options in the form of OTAs to book from. They have installed software solutions that compute forecasting rates for up to six months. This enables them to see the extent of downward and upward trends by putting in data about natural disasters like floods and attractions like new exhibitions/events in the city. Their booking engine is revamped every couple of months to cope with the newest trends in technology.

For Amari, it all started a decade ago when the Department of Revenue Management and E-commerce was created especially to handle the growing trend of online commerce. Since 2011, their OTA business has increased at the rate of 30–35%. However, their revpar (revenue per available room) has decreased by \$30 to \$40 due to increase in competition within OTAs. Setting the best rate to reach maximum occupancy is the goal of any hotel, but hotels sometimes do not understand the seriousness of lowering rates through the direct channel and maintaining higher rates at OTAs. This leads to penalties by the OTAs or to the hotels being given warning and finally getting blacklisted. Rate parity and setting the best rate to increase occupancy are two main priorities of Amari. Rates at the reception desk change frequently to fill the rooms, but OTAs are not forgotten, and the same rates are updated as frequently in their systems as well to avoid rate discrepancies. This enables the hotel to keep points of parity in the industry. Amari offers other services like complimentary breakfast or complimentary airport transportation to customers from their web portal that keeps them in parity in terms of rates but offers a point of difference. This enables them to lure customers to book directly in order to gain the advantage of many more offers and numerous package deals that are offered only through the direct channel.

Not having rate parity is one of the reasons OTAs keep dominating the online distribution channel. Offering a best-rate guarantee to customers directly will assure them that they cannot find better rates anywhere else, and since ultimately it is the hotel that will be offering the accommodation and confirming the booking, customers might as well book directly—if the best rate is guaranteed. OTAs can offer lower rates by reducing their commission. It can become a tedious job to check each OTA to figure if it is deviating from its contract by offering lower rates.

Instead of monitoring all OTAs, the major OTAs can be examined for rate parity issues.

When dealing with OTAs, hotels' revenue managers need to control the distribution through wholesalers as well. For example, a hotel spokesperson pointed out, "We sell rooms to wholesalers for a discounted rate, but they sell those rooms on small OTAs with very little margins. The small OTAs charge less commission, and their rates are lower than major OTAs." The participating hotel here had two different ways of dealing with this. One was to add a clause mentioning that the wholesaler cannot sell it to any OTAs, and in case they do, their agreement can be cancelled. The other way was to offer everyone, including the OTAs and wholesalers, the BAR (best available rate). If a hotel is offering the BAR, an OTA that is charging the lowest commission will be able to sell the room for the lowest price and the rate parity issue will be raised. However, if the hotel is offering the BAR and any other OTA offers a lower commission, it is not hotel's fault, so the hotel should not incur penalties.

As more and more users are using social media, it is becoming necessary to have a presence on this medium. It is like an advertisement where the audience participates. That is the main benefit because the participants make the advertisement more interesting by adding their knowledge and experience to it. The audience does not have to sit through the ad, but they do it voluntarily and willingly. They bring in a bigger audience with the help of their networks. These people have an attachment to the product or service. Most importantly, social media is free or less costly if a resource is assigned to keep up with audience comments.

Many big hotel chains mention that they had "a hundred thousand tweets per day" for a special promotion, "tens of thousands" of Facebook likes, and "thousands" of LinkedIn group members, and so on. These numbers look very impressive but they do not have a direct relationship with ROI. One should not expect sales from social media in the first few weeks as it is a brand-awareness channel. Sales will begin once customers start to get attracted to the social media. But the media must be regular and on social channels or it will lose audience.

Social media management is a possible key to driving direct bookings, but so far there is no formula to quantify the costs versus increased revenue. With social media, the marketing is continuous—you know how much time you put into it—but how do you determine if it is working? Some work with the GPS devices to offer real-time suggestions for hotels based on users' location, price, and rating preferences.

Social media cannot be considered a distribution channel in the hotel industry. Distribution channels have hotels that sell their inventories through travel agents, global distribution system, OTAs, and their websites. On the other hand, social media can be considered as a customer relationship and loyalty channel. It is part of the overall marketing mix because it complements the online marketing strategy. The public relations department should manage, monitor, and reply to customer's feedback on social media platforms. Large hotel chains should have a property-based social marketing presence, and hotel employees should be managing it instead of outside social media companies.

By understanding and implementing all these marketing channels (see Figure 6.1), hotels can control the distribution channel instead of letting OTAs dominate. This is possible by using multi-channel marketing and

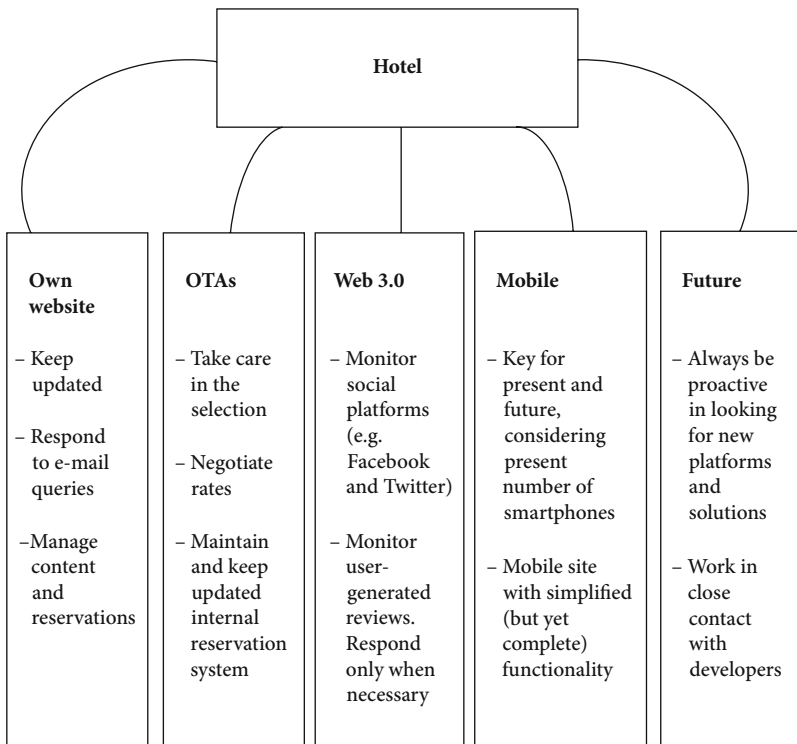


FIGURE 6.1 Main online marketing channels used by hotels

distribution techniques. Customer engagement should be strived for by creating a relationship with the customers. Simply bringing customers to the website may not ensure a booking, but conversions can be achieved by exposing the customers to these channels. If a promotion is planned, it should be announced using the multi-channel approach, and then it will have a greater effect and better results.

The marketing should be handled by all possible methods because customers will not remember where they saw or heard the message. It is not easy to keep track of marketing messages in the form of SEM, SEO, e-mail, social media engagements, banners, editorials, customer reviews, and so forth.

EXAMPLE 2 *Holiday Travel Sale for a Multi-Property Resort Company*

A multi-property resort company launched a multi-channel marketing campaign in conjunction with a scavenger hunt that counted down the days until the travel sale launched. The scavenger hunt required each entrant to become a fan on Facebook, follow the brand on Twitter, sign up for the e-mail and mobile opt-in lists, subscribe to the brand's YouTube channel, and more.

Results: As a result of buzz-generating campaigns, the sale was a success from launch to completion, as demonstrated by the following:

- ▶ Dramatic increase in Facebook fans
- ▶ Increase in Twitter followers
- ▶ Doubled the mobile text list opt-ins
- ▶ Thousands of YouTube channel views and new e-mail list opt-ins
- ▶ Revenue: \$200K

U.S. mobile leisure gross bookings for travel reached nearly \$2.6 billion during 2011, representing 2.4% of the U.S. online travel market. Among U.S. mobile web users, 36% of business travelers and 26% of leisure travelers have booked a travel product on a mobile website or app during the past year according to a PhoCusWrightreport. The trend is catching up with hotels as well, but it is mainly the large chain hotels or luxurious hotels like Roger Smith Hotel in New York, whose VP says, "There has

been an effort to make sure we are using the right [Google] AdWords, and people are learning that we have a [mobile-booking] app.” Mandarin Oriental’s marketing manager, Nicholas Cohen, says, “Although mobile conversions make up a small percentage of overall transactions, we do see that mobile bookings have a shorter booking window and actually have a higher daily rate.” Mandarin Oriental has an application for mobile bookings that allows the users to book the rooms and also shows destination content, such as restaurant recommendations and night life and cultural events.

The next state of mobile marketing is to be able to send alerts to customers’ mobiles via SMS (short message service) while they are passing by the hotel. This will allow hotels to communicate relevant and timely information. Hotels can also sell products other than the rooms. For example, people passing by or sitting in the lobby of Roger Smith Hotel will get alerts for Roger Smith arts center, restaurants, and shops. Interested customers will receive a QR code that can be scanned at hot spots around the hotel, and the information of the art product will appear on the smartphone. Roger Smith is bringing people from the street to inside the hotel and then from hot spots to the art center, restaurants, or shops. This is part of brand awareness because it might not lead to an immediate room booking or art sale, but it is a stepping-stone to start an engagement with potential customers. Once the customers are locked in and looking up your products on their smartphones, there is a greater chance that they might click on the small link that is available on every mobile website for booking a room.

6.3 Future

The future of online travel agencies is in evolution (Del Chiappa, 2013). Large chain hotels make their online marketing strategies at corporate headquarters with the help of web consultants. However, there are no set marketing strategies for independent hotels that are using a trial-and-error approach to market their products.

OTAs have become important obligatory points of passage when looking for reviews online. An example of the culmination of such online commentaries is the creation of ranking lists, such as the Trip Advisor Popularity Index, a clear numbering system that instantly signals a hotel’s level of quality and service to satisfy consumers (Jeacle & Carter, 2011).

A large number of reviews can lead consumers to feel more sure of their purchase decision. When more reviews are present, consumers increase their behavioral intention because they perceive the set of information to be more informative (Park et al., 2007), reducing the uncertainty and the perceived risk. Intuitively, an individual who believes a popular alternative to be poor might choose that alternative anyway because it is popular.

We can relate OTAs to a department store, where guests enter to shop for different products of different brands while comparing prices. Wealthy individuals may prefer the specific luxury brands; therefore, luxury brands are less prone to OTAs' attack. Price-conscious customers will be attracted to the best deals and will shift between OTAs and hotel websites.

The loyalty programs try to encourage customers to stick to one brand. If we consider price and brand choices as the only two reasons for guests to choose where they book online, then Facebook, Twitter, SEO, own website, Google Adwords, and so forth are simply communication channels, not distribution channels.

OTAs offer a ready-made platform for hotels to take their inventory and rates to every corner of the world. Reachability is a factor addressed by OTAs. Cyril Ranque, senior VP of Global Lodging of Expedia, mentions that the key for hoteliers is to treat OTAs as another piece in the overall pie, because they bring great complementary business.

Conclusions

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Online marketing has become a necessity in today's competitive environments, especially amid the chaos of the cumulative financial crises of the past decade. The phrase "Innovate or die" comes into play in the everyday strategies of companies across almost all industries. Even the more traditional industries are urged to embrace the Internet as a marketing platform.

Marketing practices have dramatically shifted with the mass adoption of social media, along with a proliferation of mobile devices, platforms, and applications. This rapidly changing communication channel presents new opportunities and challenges for marketers. Platforms, consumption trends, or even whole services, can change drastically or die off in a matter of months or weeks. Marketers need to stay up to date on the evolution of e-marketing.

We presented a short introduction to online marketing, its history and evolution, as well as its characteristics. We then covered the different product categories and made a comparison between online and traditional marketing. To better explain the relationship between the consumer and the online market, we explored the profile of the online consumer and established the factors that motivate sales.

Many different communication channels are available to online marketers, ranging from mobile and affiliate marketing to more established channels, such as e-mail and social media marketing. We analyzed these categories in detail, offering comparisons across channels.

In the online markets, pricing is key. It is important to consider the broad revenue management theories and strategies—including reference price, dynamic pricing, and overbooking—in order to afford a clear view of the economic aspects of online marketing. For this reason we discuss these aspect, which are the core of this manuscript, in terms of their impact both from a consumer and a professional perspective.

The hotel industry is a sector that has experienced a significant paradigm shift due to the explosion of e-commerce. The majority of customers no longer search for hotels in the yellow pages or call to book rooms but instead book via the Internet by themselves or through the global distribution systems of travel agents. This has had significant impacts on the tourism sector, which has been forced to modify its approaches to both competitive marketing and new customer acquisition. To show this, we presented a complete case involving online travel agencies (OTAs).

Our final goal has been to go beyond a basic understanding of online marketing and its evolution in order to help the reader grasp these theories from a scientific standard point so as to better apply these lessons in practical but rigorous ways.

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