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Flexible Work Organizations

The Challenges of Capacity Building
in Asia

Springer

Flexible Systems Management

Series editor

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Preface

The topic of Flexible Work Organizations is emerging as a key concern in Asia due to the opening up of economies. Flexibility is an important characteristic for success in dynamic and sometimes unpredictable environments (Farnese et al. 2015). Hence, it has been advocated that business enterprises practice reactive flexible capacity (in the form of adaptiveness and responsiveness) in order to cope with changing and uncertain business environments. Organizations may also endeavor to develop their capacity for flexibility through various organizational change initiatives, leadership strategies, reengineering, innovation in products and processes, the use of information and communication technology, learning orientations, and more.

The chapters in this book combine the concept of 'Flexible Work Organizations' with the various challenges associated with 'Capacity Building in Asia.' The chapters represent a variety of papers that were reviewed and developed following presentation at the 7th ICCB (International Conference on Contemporary Business) and the 14th GLOGIFT (Global Conference on Flexible Systems Management) held at Curtin Business School, Curtin University, Singapore, in October 2014. The twin International Conference theme was 'Flexible Capacity Building in Asia and the Pacific.' Here, practitioners and academics from different continents gathered and shared their practical experiences, knowledge, and insights into the conceptualization, formulation, implementation, and assessment of flexibility in the dynamic environment of business. The objective of the conference was to provide a knowledge-sharing platform for the dissemination of academic and practical findings through empirical study, qualitative modeling, case studies, new concepts, and state-of-the-art research.

The conference 'call for papers' resulted in more than 100 research papers being submitted which were then subjected to blind peer review prior to acceptance. Participating authors came from various parts of India, Austria, the USA, Singapore, Australia, Indonesia, and Malaysia. Selected papers that were presented at the conference were subsequently reviewed again and then organized in the form of this edited volume that is intended to serve as reference material in the area of Flexible Work Organizations and the Challenges of Capacity Building in Asia.

The selected chapters cover a variety of topics concerning Flexible Work Organizations and the Challenges of Capacity Building in Asia which are organized into following four parts:

I.   Flexible Work Organization
II. Flexible Capacity Building for Management and HRM
III. Flexibility and Internationalization
IV. Capacity Building—Government and the Broader Economy

Part I on the topic of Flexible Work Organization incorporates six chapters. Chapter 1 helps to set the scene for the entire book as it focuses on the Theory of Flexible Systems Management. The chapter outlines numerous types of flexibilities in an organization while pointing out that although all these developments contribute to the theoretical basis of the paradigm of flexible systems management, a well-defined and comprehensive theory is still lacking. Consequently, the author endeavors to identify the building blocks of flexible systems management, their relationships, and causality. Chapter 2 focuses on telecommuting and the relatively new concept of co-working communities and how these practices can contribute to both individual and organizational flexibility. Co-working is defined as a practice where people occupy a desk on a casual or temporary basis in a workspace that is shared with others. It is pointed out that the difference between co-working and hot-desking (for example) is that the spaces are usually not controlled by an employer but managed and facilitated by the external organizers. Chapter 3 explores holistic learning in various contexts, introducing a cybernetic framework to assist in structuring exploration and further study of the topic. Chapter 4 examines Flexible Distribution Strategies in Network Marketing Companies, an area that has been largely overlooked in research to date. The purpose of the chapter is to compare customers' perceptions across two companies and formulate 'Distribution Flexibility' models to enable flexible distribution strategies. Chapter 5 examines flexibility and the socially sustainable business practices of two Indian manufacturing companies in different manufacturing sectors. Presenting an empirical study, the authors maintain that the research findings will be useful for supply chain managers in sustainability operations who want to better understand the diverse patterns of social sustainability, and how they can assist as instruments to improve decision making. Chapter 6, the final chapter in this part, examines the facilitation of Spirituality in the Workplace. The authors propose that workplace spirituality is increasingly being considered an organizational variable that affects employee behavior and organizational performance that can facilitate employees' experience of meaning, connectedness, and purpose in life. Focusing on three organizations, the chapter offers implications for practitioners and researchers wishing to further the study and practice of workplace spirituality.

Part II of the book—Flexible Capacity Building for Management and HRM— comprises five chapters. In Chap. 7, the concept 'Ethical Mindsets' is set in an international context. An ethical mindset is defined as '…an appreciation of and reflection on any situation through the filter of personal beliefs and values such as honesty, integrity, harmony, balance, truth seeking, making a difference, and

demonstrating professionalism, deriving from the strength rooted in an individual's inner-self' (Issa 2009, p. 163). This concept supports the importance of different cultures and argues that an appreciation of ethical mindsets will assist in enhancing national capacity building. Chapter 8 presents the findings from a study of the effects of work-life programs on employee attitudes and behavior in the Indonesian higher education sector. The work attitudes and behaviors examined include organizational citizenship behaviors, in-role performance, and organizational commitment. The relationship between work-life balance programs and employee behaviors and attitudes was tested via a survey across Indonesian higher education institutions. Chapter 9 discusses Strategic Human Resource Management (SHRM) programs and practices in the higher education sector in Thailand. The chapter identifies the relationship between HRM strategy, policies and practices, and organizational strategy in the Thai higher education system. This chapter identifies and classifies the HRM programs in place; examines the application of these programs and the impact and relevance of the programs for employees, and discusses measures to improve the design and application of HRM programs within the sector. Chapter 10 examines network-based social capital and the effectiveness of capacity building programs of a particular humanitarian international NGO in Myanmar with respect to networking, social entrepreneurship, capacity building, and targeted populations. There is a particular focus on women, particularly in relation to disaster-related events. The chapter presents a case study of an international NGO program that was involved in economic development for women and girls who lost family members and property after the Cyclone Nargis hit Labutta, Myanmar, in 2008. In Chap. 11, competency development and organizational flexibility in the Indian IT services sector is discussed. In this chapter, it is advocated that people competencies must be constantly upgraded or revised in organizations, since market conditions are constantly changing. In knowledge industries, it is argued that people competency plays a major role in the overall business. The chapter outlines a process for enhancing personnel competencies and organizational ability.

Part III of the book, Flexibility and Internationalization, consists of four chapters. Chapter 12 draws on recent corporate experiences in innovation concerning the unmet needs of the bottom of the pyramid (BOP) market. The author calls for a metanarrative of flexible capacity building in delivering sustainable outcomes, arguing that the search for a grand narrative essentially lies in the ability to overcome mindset traps, not only in the corporate arena, but also in relation to stakeholders such as policy makers, NGO's, and local communities. Chapter 13 concentrates on the flexible capacity building that is driving emerging markets and internationalization. The authors examine the influence of strategic capacity building with regard to the degree of internationalization among Indian firms. Findings from 200 analyzed surveys illustrated that commercial, operational systems and organizational capacity building have the maximum influence on strategic flexibility, which, in turn, was found to have a positive influence on the degree of internationalization of the Indian manufacturing firms that were analyzed. Chapter 14 in this part presents a framework for informal economies in developing nations,

clarifying linkages with the formal economies of both developing and developed nations as a function of national competitiveness. Using a case study to contextualize the framework, the authors conclude with suggestions for future research on the topic. Chapter 15 in this part explores the continuity and change forces of international technology strategy. The intention of the authors is to identify critical continuity and change forces that are associated with the management of international technology strategy. A hierarchical relationship of continuity and change was developed to analyze the effect on the technology performance of an organization with the intention that it provides a useful strategy for practitioners, and a guide for future scholars who may wish to further the study of the topic.

The final Part IV of this book centers on Capacity Building in relation to Governments and the Broader Economy and consists of five chapters. Chapter 16 in this part presents strategic analysis of actor competencies and their impact on e-Governance performance in the context of India. It is based on a survey of government officials and beneficiaries of government services. The competence level of actors has been measured in terms of their 'Ability to use project services,' 'Ability to use computing facilities,' and 'Ability to maintain contact' with implementers and beneficiaries. e-governance performance is measured as the common expected benefits. Chapter 17 deals with the concept of open innovation which contemporary organizations are looking for to cope with change. The authors examined this topic as a flexible practice for intellectual property management in the pharmaceutical sector based on the analysis of secondary data. The findings of this study, though mainly contextual, are intended to add to the conceptual understanding of open innovation and flexibility. Another study on pharmaceutical companies in the Indian context, based on secondary data, is reported in Chap. 18. This chapter attempts to touch upon the marketing strategies that the Indian pharmaceutical companies have adopted, to not just meet new challenges but also leverage on opportunities that have arisen after the implementation of the product patent regime in India. The authors of Chap. 19 report investment patterns and quarterly trading flexible strategies of the Indian mutual funds industry. This work suggests that investors trying to optimize return concentrate their focus on institutions having a large chunk of securities. In contrast, internally managed funds for educational institutions and foundations, which have their own asset management services, are not interested in window dressing their portfolio. The final Chap. 20 in this part of the volume presents an empirical validation of the hierarchical relationship models of strategic crystal elements of telecom business services in the Indian context. Focusing on the flowing stream strategy crystal as a base, it comprises continuity forces, change forces, enterprise factors, and customer factors, reporting on the empirical validation of previously informed total interpretive structural models for each one of these elements of the strategy crystal. The chapters in the final part of the book deal with diverse topics related to capacity building in government and the broader economy, which it is intended to serve as a sound basis for future researchers.

In summary, the various chapters in this book illustrate the concept of flexibility, as an organization's ability to react to and accommodate change in the environment (see Arnold et al. 2011). Most chapters have combined flexibility with capacity building in a range of different contexts in order to further understanding of the topics studied across several countries. The term capacity building is generally used with regard to community development. However, as it has been defined as the organizational and technical abilities, relationships, and values that enable organizations, groups, and individuals to achieve their objectives over time (see Matachi 2006), it was considered useful to integrate with the concept of flexibility for the purpose of this book.

It is anticipated that this edited volume on Flexible Work Organizations and the Challenges of Capacity Building in Asia will provide a useful resource for a variety of audiences such as management students and researchers; practicing business managers; consultants; and professional institutions.

Finally, we would like to thank all of the authors and reviewers who helped to bring this volume to fruition. In particular, we would like to thank Rejani Raghu who communicated with authors and reviewers as well as helped to format the final manuscript.

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Part I
Flexible Work Organization

Chapter 1
Theory of Flexible Systems Management

Sushil

Abstract Flexible systems management has been evolving as a paradigm and has taken a more concrete shape, particularly, in the last two decades. A large number of perspectives and frameworks are linked with it. The term flexibility has been defined by various researchers in different contexts in a different manner. Various types of flexibilities in an organization are treated as strategic flexibility, organizational flexibility, people flexibility, operations flexibility, marketing flexibility, financial flexibility, information system flexibility, decision flexibility and so on. Though all these developments contribute towards a theoretical basis of the paradigm of flexible systems management, a well defined and comprehensive theory in this regard is still lacking. This chapter is an attempt to identify the building blocks of flexible systems management and their relationships and causality. This contributes towards answering the fundamental questions of theory building, i.e. 'what', 'how' and 'why'. The building blocks of flexible systems management are identified as: the situation, actor, process, proactive/reactive flexibility, internal/external flexibility, flexibility maturity, learning, action and performance. The chapter provides a critical appraisal of all the building blocks and relationships among them, which can be tested as a full-fledged theory in due course.

Keywords Flexibility · Flexible systems management · Theory building

1.1 Introduction

Flexible systems management has evolved and been enriched over a period of time, particularly in last couple of decades and has been reflected in many different shades in a variety of contexts (Sushil 2012a, 2015a). This has evolved

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more as an applied research area and resulted in the ideations and development of frameworks and models, largely, from the ground reality and work practices being followed in organizations. Some notable field-based contributions in this area comprise of output flexibility for small firms by Fiegenbaum and Karnani (1991), operating flexibility of multinational corporations by Allen and Pantzalis (1996), flexible enterprise by Gewirtz (1996), flexibility at work by Reilly (2001), determinants of organizational flexibility by Hatum and Pettigrew (2006), adaptability by McKeown (2012) and flexibility in decision making by Gerber et al. (2014) among others. Keeping in view the work practices in diverse areas, it has emerged as a multidimensional and polymorphous concept that embraces different types of flexibilities such as strategic flexibility, organizational flexibility, people flexibility, operations flexibility, marketing flexibility, financial flexibility, information system flexibility, decision flexibility and so on.

It has also been reflected in various connotations or dimensions of flexibility such as adaptiveness, adjustment, agility, amiability, autonomy, balance, compromise, customization, elasticity, liberalization, localization, malleability, mobility, openness, responsiveness, resilience, variability, versatility and so on. In the early stages, practical developments in business organizations took place mainly in the area of manufacturing flexibility through development of flexible manufacturing systems (Browne et al. 1984; Sethi and Sethi 1990) and defined in terms of labour flexibility, capacity flexibility, routing flexibility, machine flexibility, materials handling flexibility, maintenance flexibility, process flexibility, product flexibility, supply chain flexibility and so on. Upton (1994, 1995) connected the manufacturing flexibility work with organizational flexibility. Flexible work practices have also evolved over time such as flexi-time, flexi-place and flexible compensation, among others.

Some early thinking and research on flexibility in an organizational context include the contributions of Marschak and Nelson (1962) on flexibility and uncertainty, Ansoff (1975) in organizational and strategic flexibility, Heimann and Lusk (1976) on decision flexibility, Ackoff (1977) on flexible organizations, Eppink (1978) on strategic flexibility, Krijnen (1979) in flexible firm in terms of organizing, Buzacott (1982) in manufacturing flexibility, Aaker and Mascarenhas (1984) and Harrigan (1980, 1985) on strategic flexibility and Mason (1986) on valuing financial flexibility. A number of reviews have been published on different aspects of flexibility over time (e.g. by Shank et al. 1991; Saleh et al. 2009; Sharma et al. 2010; Roberts and Stockport 2014). However, despite development of various concepts, definitions, frameworks, models and systems, the theoretical discussions and attempts of theory building in the area of flexible systems management have been lacking. A good discourse on the theoretical exploration of the magic word 'flexibility' has been presented by Kickert (1985) in the context of public administration and policy making. He considered four theoretical approaches, i.e. contingency theory from organization science, cutback policymaking from administration scientific approach, meta-decision making from decision theoretical approach, and control variety from system theoretical and cybernetic approach. He concluded that flexibility is about speed and the degree of change in control

instruments to cope with environmental uncertainty. But, at the end, he also agreed about the lack of clear theory and expressed that to enhance its practical usefulness theory building on flexibility, is warranted. Any theory building attempts to answer fundamental questions such as 'what', 'how', 'why', 'who', 'where' and 'when', as delineated by Whetten (1989).

This chapter is an attempt to answer some of these questions towards building a theory of flexible systems management. Initially, a discussion is presented to trace the theoretical roots of flexible systems management from a variety of disciplines. Further, some well-established frameworks related to it are discussed. The central part of the chapter is devoted to identify 'what' are the elements or building blocks of flexible systems management and 'how' these are interrelated with reflection on 'why' these are supposed to be related in that manner. This can be treated as a consolidation of thinking and theoretical underpinnings of flexible systems management that may be treated as a base conceptual framework to be tested further for establishing a theory of flexible systems management. Finally, the chapter concludes with discussion on the proposed theoretical framework and directions for future research in this area.

1.2 Theoretical Roots

There are rich theories developed over a period of time in diverse disciplines that directly or indirectly indicate some type of flexibility in systems under consideration. The diverse areas of knowledge from where rich theoretical insights are derived in flexible systems thinking include socio-political thoughts, anthropology, economics, organizational theory, management theories, theories of strategic management and systems theory. A selective set of theoretical roots of flexible systems management are outlined in this section covering agency theory, duality theory, contingency theory, stakeholder theory, change theory and systems theory as depicted in Fig. 1.1. This is only a representative set of dominant theories that have been taken as base for flexible systems thinking and may not be treated as a comprehensive set of its theoretical roots.
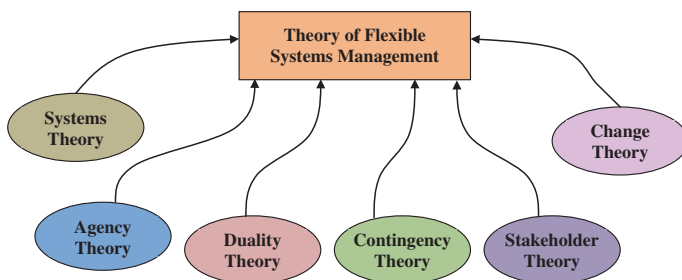
Fig. 1.1 Theoretic roots of flexible systems management

1.2.1 Agency Theory

The philosophical, political, economic and social thinkers have treated individual subjects as 'agency' having freedom to decide and act as self-determined individuals. This freedom may be circumvented by the external situation or structure binding the individual to take a set of actions not solely by free-will but guided by morality, ideology, hierarchy, power relationship, etc. This agency-structure debate in political and sociological circles acts as a basis of flexible systems management in the situation-actor-process (SAP) framework, where the actor is construed to have a free-will or rational freedom of choice, that is guided/restricted by the situation in which he/she is placed and the processes that govern him or her. Ross (1973) has discussed the economic theory of agency; a comprehensive review of agency-theory can also be seen in Eisenhardt (1989). Howard-Grenville (2005) deliberated on the role of agency while examining the persistence of flexible organizational routines.

1.2.2 Duality Theory

According to this theory, there is inherent duality of paradoxically opposite forces in the world, i.e., light-dark, above-below, male-female, continuity-change and so on. Duality theory has been applied widely as it can be seen in the works of Friedman (1972) and Epstein (1981), among others. Lawrence and Lorsch (1967a) have deliberated on the duality of differentiation and integration to be taken up side-by-side in complex organizations. The systemic flexibility treats this duality on the continuum from thesis to antithesis, thereby creating a range of options (some may be paradoxically opposite) and synthesize and dynamically change them by using the freedom of choice of the actors concerned. The core of the concept of flexible systems management has evolved around the concept of duality and management of paradox, which embraces the concept of ambidexterity.

1.2.3 Contingency Theory

Contingency theory reflects on the failure of the universalization of management principles and approaches. This theory, for the first time, gave significance to the 'situation' (context) in which a management action is to be taken up. Lawrence and Lorsch (1967b) have deliberated that structure of an organization depends upon the factors called as contingencies, which have been interpreted by various authors in a different manner. The management style and strategy are governed by 'if-then' relationship with the situation (Luthans 1973; Hoffer 1975). Mintzberg (1979) defined the two situation variables of dynamism and complexity and

accordingly defined four types of organizational structures, with adhocracy associated with dynamic as well as complex environment. The driving force for flexible systems management is also considered as 'situation', but rather than taking 'if-then' proposition, which is predeterminate and reflects pseudo-flexibility with one option for each situation, it is governed by 'both-and' proposition taking a range of options from thesis to antithesis. Depending upon the situation, an appropriate dynamic interplay of these options is to be exercised.

1.2.4 Stakeholder Theory

Any enterprise works effectively due to the contributions of and towards the benefit of a number of stakeholders such as owners, investors, shareholders, employees, customers, partners, suppliers, distributors, government, regulators, society and so on (Mitroff 1983; Freeman 1984). Thus, the flexibility of enterprise should be linked to all the stakeholders for overall performance (Sushil 2014a). It provides a basis for internal and external contexts of flexibility. In order to get full benefit of performance, all the stakeholders should contribute to the enterprise with their own share of flexibility. At the same time, enterprise should also create a framework for providing flexibility to all the stakeholders.

1.2.5 Change Theory

Change theory treats the reality around as continuously changing. In the context of organizations, the change is seen as the only constant. Flexible systems management addresses the issue of change in a holistic manner, i.e. treat change alongside the continuity in which organization is placed. Almost all the propounders of change have also agreed to such a balance in continuity and change in some form or the other including Weick (1982), Mintzberg (1987), Collins and Porras (1994), Drucker (1999) and Pettigrew (2000). This is also governed by the dynamic capabilities, as theorized by Teece (2009), and results in strategic flexibility (Evans 1991; Sanchez 1995; Young-Ybarra and Wiersema 1999; Warren et al. 2002; Shimizu and Hitt 2004; Nadkarni and Narayanan 2007; Sushil 2015b). Rhenman (1973) categorized the changes to be reversible and irreversible changes. Whereas Eppink (1978) proposed a typology of environmental changes that were operational, competitive and strategic. He mainly dealt with strategic change and corresponding strategic flexibility to cope with unforeseen circumstances or crisis situations by considering two options, i.e. "reduce the relative impact of change" and "increase the response capacity".

1.2.6 Systems Theory

Systems theory deals with the holistic concept of organizations as open systems governed by the causality generated by feedback. The theory of flexible systems management is built on the foundation of systems theory that treats a flexible system to be a more holistic conception than a rigid system. In systems theory a famous law, i.e. "law of requisite variety" was propounded by Ashby (1956) which reflects on the increase in environmental variety to generate more variety in control as a flexibility measure. While the older frameworks have largely treated flexibility as the opposite to rigidity in some way or the other, the upcoming frameworks are more holistic and treat flexibility as a mechanism of managing paradoxes. Systems theory also embraces decision theory (Simon 1947; Mintzberg et al. 1976), which evolved as a cognitive learning process. Argyris and Schon (1978), in their pioneering work on organization learning, defined different types of learning and pointed towards meta-learning, i.e. learning to learn as the basis of flexibility. A large range of organizational and strategic management theories have derived insights from systems theory, which also acted as a base of theory of flexible systems management. The contributions of Ansoff and Brandenburg (1969) on organization design, and Emery and Trist (1969) on causality of organizational environment are worth mentioning along with many other organizational and strategic thinkers. The systems theory has evolved over time by the contributions of many thinkers in the context of general system theory and systems approach (Boulding 1956; Forrester 1968; Churchman 1979). The basic systems concepts of 'hierarchy and emergence' and 'feedback and control' act as building blocks that are enriched by the concept of 'learning' (Checkland 1981). The feedback is not only to be used for control but also for continuous learning as well (Senge 1990). Feedback and learning act as a major building block of the proposed theory of flexible systems management.

1.3 Underlying Frameworks

The dominant frameworks (in the context of flexible systems management) that have been developed and tested in the last two decades are exhibited in Fig. 1.2. Some of the leading frameworks that jell with the paradigm of flexible systems management are meta-flexibility, ambidexterity, super-flexibility and SAP-LAP (based on systemic flexibility).
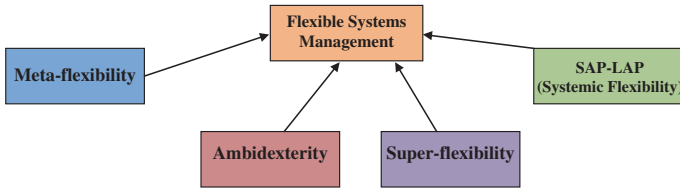
Fig. 1.2 Underlying frameworks of flexible systems management

1.3.1 Meta-flexibility

Volberda (1996, 1997, 1998) made a significant contribution while conceptualizing the framework of a flexible firm. According to him, a flexible firm has meta-flexibility that balances controllability (in terms of organization task) on one hand and dynamic capabilities (as managerial task) on the other. He took two dimensions of variety and speed and provided a taxonomy of steady-state, operational, structural and strategic flexibilities. At the same time, he provided a framework of balancing flexibility against controllability and defined four organizational forms: rigid (low flexibility and low controllability), planned (medium level of both flexibility and controllability), flexible (high level of both flexibility and controllability) and chaotic (very high flexibility and low controllability) organizations. Though Volberda's framework appears to have taken roots in duality theory, a theory of flexible firm still not taken a concrete shape.

1.3.2 Ambidexterity

The concept and framework of ambidextrous organization is proposed by Duncan (1976), and further developed and applied by O'Reilly and Tushman (1996, 2004), Birkinshaw and Gibson (2004), Lubatkin et al. (2006), Raish et al. (2009) and Mom et al. (2009) that visibly incorporates duality theory. An ambidextrous organization is defined as one that is able to effectively balance two opposite requirements at the same time. The most prominent framework, in this regard, is one that deals with a balance of 'exploitation' and 'exploration' strategies at the same time. The 'exploitation' refers to existing strengths, business domain, and systems for the organizations like GM. 'Exploration' on the other hand, refers to new business areas and innovation, as can be seen in organizations like 3M. It concludes by conjecturing and providing fieldbased evidences that the organizations balancing these opposite tendencies prove to be far more effective. Though the concept of ambidexterity does not directly refer to the term flexibility, it by and large provides a parallel framework of strategic flexibility.

1.3.3 Super-Flexibility

Bahrami and Evans (1995) had been working for long to understand the flexibility practices in high-tech and knowledge intensive organizations in Silicon Valley. They have also provided multiple dimensions of flexibility such as adaptability, agility, ambidexterity, hedging, liquidity, malleability, mobility, modularity, plasticity, resilience, robustness and versatility. Finally, they have matured their framework in defining the concept of super-flexibility (Bahrami and Evans 2010, 2011) that, in essence, treats flexibility in real time, i.e. an organization responds to the changing requirements almost on a real-time basis. The framework of super-flexibility comprises of the constructs such as agility, versatility, malleability, robustness and resilience and is defined as the ability to dynamically adjust to fluid conditions, at present and in the future. It provides a balance between withstanding unsettled conditions on one hand, and transforming and reinventing on the other. This gives a new dimension to the flexibility discourse with special reference to the organizations placed in highly turbulent situation. This work summarizes the evolution of concept of flexibility in literature and proposes a field-based framework answering the 'what' part of flexibility, but still a theory of flexibility seems to be at infant stage.

1.3.4 Systemic Flexibility and SAP-LAP

The work on flexibility was synthesized in the form of an evolving paradigm of flexible systems management (Sushil 1997). It clarifies the myths of flexibility (Sushil 2001b) and defines the concept of systemic flexibility that treats all the options from thesis to antithesis on the continuum (Sushil 1997, 1999, 2000a).

> Flexibility is the exercise of free-will or freedom of choice on the continuum to synthesize the dynamic interplay of thesis and antithesis in an interactive and innovative manner, capturing the ambiguity in systems and expanding the continuum with minimum time and efforts.

It brings out three keywords of flexibility as 'options', 'change mechanisms' and 'freedom of choice'. The overarching framework of flexible systems management has been taken as SAP-LAP (situation, actor, process, learning, action, performance) (Sushil 2000b, c, 2001a, 2009). The concept is deep rooted into systems theory and takes both the planes of analysis (SAP) and synthesis (LAP) with learning at the core to create flexibility in organizations as well as individuals. The theoretical underpinnings of this framework are deep rooted in the theories outlined in the previous section. It takes duality theory as the basis of systemic flexibility to manage the paradox of thesis and antithesis on the continuum by taking 'both-and' proposition rather than 'either-or' proposition considered in early stage frameworks. A typical illustration of simultaneously managing the opposing forces of continuity and change is visible in the framework of 'flowing stream strategy' (Sushil 2012b, 2013).

The constructs of SAP-LAP have further evolved taking insights from many well-established theories. For example, the 'situation' construct addresses the significance of contingency theory of management. The 'actor' construct imbibes the insights of agency theory (in terms of 'freedom-of-choice') and stakeholder theory (treating various, stakeholders as actors). The 'process' construct derives its basis from systems theory and theory of change (both incremental and radial). The synthesis in the form of learning, action and performance (LAP) flowers out of the modern systems and cybernetics theory. Though this framework seems to be encompassing a number of theoretical constructs, a fullfledged theory of flexible systems management is still awaited.

1.4 Building a Theory of Flexible Systems Management

Keeping in view that various past works in the area of flexible systems management have largely been related to provide frameworks for assessing and implementing flexibility in different facets of organizations, this section makes an attempt to consolidate them and conceptualize towards theory building. In order to answer the basic questions of theory building, i.e. 'what', 'how' and 'why', it takes SAP-LAP framework as the foundation. This framework, though derives insights from all the theories outlined earlier, takes duality theory and systems theory as the prime basis of conceptualization. The building blocks of proposed theoretical framework, taking SAP-LAP as the foundation are: situation, approach, context, maturity, performance, basic elements of flexibility and feedback (including learning and action). The question 'what' is answered in terms of the building blocks that takes the constructs of SAP-LAP and further builds on them and develop relationships ('how') and explains their causality ('why'). The conceptualization of the proposed theory of flexible systems management is portrayed in Fig. 1.3.

The fundamental building blocks of the proposed theoretical framework are situation, approach, context, maturity, performance, feedback (learning and action) and flexibility elements (actor and process).

1.4.1 Situation

The situation (both external and internal) is considered the prime driver for flexibility in organizations. The organizational reality is circumscribed by forces of both continuity and change. The situation can be both prevailing and anticipated in nature and thus drives the approach to be followed for practicing flexibility by the organizations. The situation acts as the prime mover in the theory of flexible systems management, which ultimately to be addressed by the leaning and various flexibility elements and developing a positive culture that promotes organizations flexibility and agility. Both external and internal situation factors are relevant for
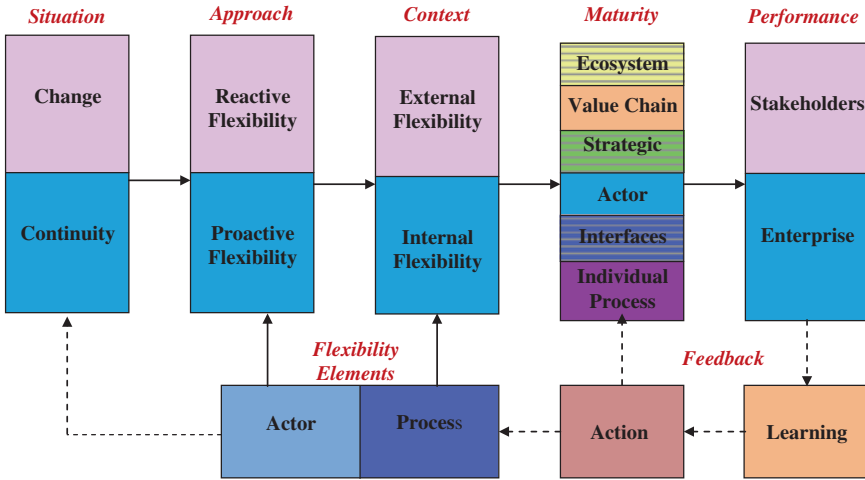
Fig. 1.3 Conceptualization of theory of flexible systems management

organizational flexibility. Early attempts of external factors of change on organiza-
tion flexibility are reported by Burns and Stalker (1961) and Lawrence and Lorsch
(1967a) and are related primarily to environmental structure and its uncertainty.
The internal factors are perceived as continuity in terms of core values (Collins
and Porras 1994), and organization culture and leadership (Schein 2010).

1.4.2 Approach

The flexibility approach could be reactive as well as proactive in nature. The reac-
tive flexibility addresses the requirements of the prevailing situation; for example,
unforeseen crisis, competitors' moves, and shift in customer requirements. Such a
reactive flexibility has been addressed by the leading car maker, Honda in Indian
context. Keeping in view the fuel cost, the customer preference shifted from
petrol-based vehicles to diesel vehicles. Most of the competitors such as Maruti
Suzuki, Hundai, Volks Wagon, and Tata came up with models in diesel segment
but Honda continued with only petrol segment, which resulted into considerable
erosion of its market share. Realizing the shift in the market, Honda responded by
carrying out R&D and introducing diesel models like Amaze and Mobilio, which
put it back on the pedestal of the market leaders in India. Thus, reactive flexibility
in terms of adaptiveness and responsiveness contributes to effectively cope with
the prevailing situation. Eppink (1978) has mainly treated the unforeseen environ-
mental uncertainty as the driving force for strategic flexibility.

On the other hand, to realize higher return and to minimize business risk, the
organizations should also anticipate the future changes in situation and adopt

proactive flexibility by innovation, adding variety, enhancing agility and building modular and reconfigurable designs to meet future flexibility requirements. The proactive flexibility would encompass both prospector and defender strategic approaches (Miles and Snow 1978) to deal with future opportunities and threats, respectively.

1.4.3 Context

Both the reactive and proactive flexibilities may be created internally as well as externally at the basic flexibility elements of both the processes and actors. The internal flexibility is delimited to the processes and actors within the organization, e.g. manufacturing flexibility, flexible work practices, information systems flexibility, and so on. The internal flexibility has been deliberated at level of groups by Okhuysen and Eisenhardt (2002), processes by Narassipuram et al. (2008) and projects by Olsson (2006). The external flexibility involves external actors such as vendors, partners, dealers, government and society to address flexibility in external processes of supply chain, strategic alliances and so on. The external flexibility has been treated in the context of outsourcing by Sia et al. (2008), and through the strategic alliances by Young-Ybarra and Wiersema (1999).

1.4.4 Maturity

Depending upon the context, the maturity level of flexibility is determined. A typical flexibility maturity model takes internal flexibility at lower levels and external flexibility at higher levels (Sushil 2014b, 2016). According to this model, there are six maturity levels; lower four levels deal with the internal context and upper two levels are for the external context. In the internal context, the first level is to have flexibility in individual processes, which then matures to second level by interfacing flexibility of one process with another one. Further, it matures by making internal actors or stakeholders flexible and finally, at the fourth (highest internal) level, comes the strategic flexibility (both proactive and reactive).

In order to realize the full potential of flexibility, an organization is supposed to transcend it to external level; first at operational and then at strategic plane. Thus, the fifth maturity level is of operational flexibility in value network by making supply chain partners and processes flexible. The highest (sixth) level of maturity would be attained by imbibing strategic flexibility in the whole ecosystem. All the levels of flexibility maturity will encompass the internal as well as external flexibility in different proportions.

1.4.5 Performance

It is theorized that the higher the maturity level of flexibility, the higher would be the performance. Thus, keeping in view the lower maturity levels for organizational internal context and higher maturity levels for external context, the performance at both the levels of enterprise and stakeholders is conceptualized. The performance of the enterprise as well as stakeholders would interplay with each other. It is of great significance to carry out the valuation of flexibility and presented by Triantis and Hodder (1990) and Schober and Gebauer (2008). The valuation of flexibility should incorporate the costs as well as benefits to both the enterprise and stakeholders.

1.4.6 Feedback and Learning

Flexibility enhancement in any organization tends to take place through feedback in terms of 'learning' and 'action'. The learning derived by the assessment of maturity and performance levels would be converted into appropriate strategic as well as operational actions (at the level of flexibility elements) to upgrade the flexibility at these levels. This will also be going back to recreate the situation in which the organization is placed. Organizational learning develops ability of individuals to respond to the stimuli quickly as well as effectively (Fiol and Lyles 1985; Gaile 2013).

1.5 Research Propositions and Discussion

In view of the above-mentioned building blocks and their inter-relations, the following research propositions are formulated in the process of building theory of flexible systems management. These propositions are based on the theoretical roots, as discussed earlier, and answer the 'how' and 'why' at the relationships among the building blocks of flexible systems management. These propositions need to be examined further in real life situations for validating the proposed theory.

Proposition 1 *The situation is the main driving force for adopting the reactive or proactive approach of flexibility based on prevailing or anticipated situation to be addressed (based on contingency theory and theory of change).*

The situation, both external in terms of change forces (opportunities and threats) and internal defined by continuity forces (strengths and weaknesses), acts as the prime stimuli for adopting an appropriate mix of flexibility approaches. As Krijnen (1979) proposes, a flexible firm responds to the environment in three ways, i.e. adapt, anticipate, or influence. The adaptation to environmental pressures is more an approach of reactive flexibility, which has been treated most

widely in the flexibility literature. But the firms are also supposed to have pro-active flexibility to anticipate the environmental changes and to some extent also influence it. It should not only respond to environment in a passive mode, but also more in an active mode. Much of it depends on the positive culture as a part of the internal situation of the organization.

Proposition 2 *Both the internal and external contexts of flexibility are addressed by flexibility of actors as well as processes (based on agency theory, stakeholder theory and systems theory).*

Responding to the situation by flexibility approach would depend on the context as well, which could be internal as well as external. A lot of discussion on internal and external flexibilities has been done by many flexibility thinkers. The work of Ansoff (1968) is worth noting on this part of the theory of flexible systems management, which has been further developed by Eppink (1978) and Volberda (1998). Both internal and external flexibilities are created by the flexibility at the levels of actors as well processes. The internal actors and processes create internal flexibility in organizing and decision making to enhance response capacity. On the other hand, external actors (stakeholders) and processes would contribute to external flexibility having scope beyond the organizations.

Proposition 3 *The flexibility maturity level is dependent upon the internal/external context; the lower flexibility maturity levels are related to internal flexibility and higher maturity levels are related to external flexibility (based on systems theory).*

The internal/external context of flexibility has a direct bearing of the flexibility maturity of the organization. The lower four levels of maturity are internal to the organization created as the flexibility capacity within it at the level of processes, interfaces, actors, and strategies. The upper two levels of flexibility maturity are created beyond the organization. An organization has to be first flexible internally and then take it to the linkages beyond it in the value network and ecosystem as a whole. It treats only two levels of flexibility, i.e. operational flexibility and strategic flexibility to define the flexibility maturity in contrast to three levels taken by Eppink (1978), i.e. operational, competitive and strategic.

Proposition 4 *The flexibility maturity level influences the organizational performance; both for the enterprise and stakeholders (based on stakeholder theory).*

The higher the flexibility maturity of an organization, the better it would be in handling the environment (internal as well as external), and thereby enhance its performance. The performance would be enhanced for the enterprise not only in financial terms, but also in terms of long-term survival and growth. In addition to this, it will also contribute to the performance of all the stakeholders in terms of higher value through flexible and sustainable offerings and relationships.

Proposition 5 *Feedback from assessment of maturity level and performance is reflected in learning to determine actions required at the level of actors as well as processes in order to respond to the situation and recreate the situation (based on systems theory and theory of change).*

The feedback from the flexibility maturity and performance will lead for further flexibility enhancements. It will create organizational learning to take actions for developing flexibility capacity at the levels of actors as well as processes. The development of flexibility as an initiative stimulated by learning will respond to the situation on one hand, and will create a positive culture to create organizational agility and innovation on the other.

Thus, the proposed theory of flexible systems management envisages that both the external and internal stimuli related to various situations influence the approach and context of flexibility to be adopted. This turn, will help in evolving the flexibility maturity of the organization impacting the performance, both from organizational and stakeholders' perspectives. The learning generated in the process leads to taking of actions on various elements of flexibility and the evolution goes on.

1.6 Conclusion

The work on different aspects of flexible systems management have been done in past to bring out the relevance and importance of flexibility of different types in the management of organizational systems. The research work on flexibility (reported in literature) is more of applied nature and is largely restricted at the level of frameworks, definitions, and real-life illustrations and implications. The theoretical underpinnings of flexible systems management have, in general, been lacking in most of the past researches except a few that deliberated on some theoretical basis of flexibility in organizations. In view of this research gap, the chapter has made an attempt to propose a theory of flexible systems management. First, it traced the theoretical roots and then reviewed dominant frameworks related to it. The systems theory, agency theory, duality theory, contingency theory, stakeholder theory and theory of change are considered as the main channels that seep into the flexibility theory. The paradoxical nature of flexibility is reflected in a number of past definitions such as meta-flexibility, super-flexibility, ambidexterity, and systemic flexibility. The SAP-LAP framework has been examined for synthesis of various theoretical constructs and treated as the foundation for identifying building blocks of the proposed theory of flexible systems management. The basic questions of theory building, i.e. 'what', 'how' and 'why' have been answered around these building blocks and their conjectured relationships that are summarized in the form of research propositions of the theory of flexible systems management.

In order to build a more comprehensive theory, the constructs taken in macro conceptualization will have to be defined in terms of various variables in flexibility theory. Further, this requires testing of this theory conceptualization in empirical settings and case contexts. At this stage, this attempt can at best be treated as a stepping stone towards building a comprehensive theory of flexible systems management.

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Chapter 2
Telecommuting and Co-Working Communities: What Are the Implications for Individual and Organizational Flexibility?

Catherine Raffaele and Julia Connell

Abstract In recent years, telecommuting has increased exponentially, although rates vary across different countries. The US has one of the highest rates of telecommuting adoption in the world, with approximately 16 million US employees working from home at least 1 day per month—about 10 % of all employees (Shieh and Searle SOAC 2013: 6th State of Australian Cities Conference. State of Australian Cities Research Network, 2013). In Australia, it has been estimated that in 2013, 5.6 million adult Australians aged 18 years and over were 'digital workers'—that is, they use the internet to work away from the office (Di Gregorio Home is where the work is: Research snapshots, 2013). This represents 51 % of the total employed workforce in Australia. Telecommuting environments vary with regard to the life and work opportunities provided for telecommuters (Shieh and Searle SOAC 2013: 6th State of Australian Cities Conference. State of Australian Cities Research Network, 2013), as well as the range of advantages and disadvantages telecommuting can provide for both workers and organizations. Consequently, this chapter reviews existing literature in order to explore how telecommuting can either contribute to, or detract from individual and organizational flexibility. The emergence of co-working practices is also examined as a telecommuting environment that has the potential to overcome some of the issues that telecommuting poses both from the individual and organizational perspectives.

Keywords Co-working · Flexibility · Telecommuting · Teleworking

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2.1 Introduction

This chapter reviews existing literature to explore how telecommuting can either contribute to, or hamper, individual and organizational flexibility. The emergence of co-working practices is examined as one way of overcoming some of the issues that telecommuting poses.

Work standardization was a defining feature of the industrial era, which was reflected in its work practices. For much of the twentieth century in industrialized countries, work could be viewed as 'standard'—that is full time and permanent waged employment, often where the male was the main income earner and the female the main domestic carer (Watson et al. 2003). Since the latter part of the twentieth century, significant structural changes to the nature of work and the economy have led to the decline of standardized work and the rise of diverse and fragmented employment relationships (Standing 2012). Changes in employment relationships have led to the relatively new concept of 'Flexicurity' which is a hybrid term combining concepts related to employment security and flexibility with regard to the general labour market context. Wilcox (2012), Chief Executive of the Australian Industry Group, stressed that employers need flexibility to maintain productivity and competitiveness, and employees need flexibility to meet family responsibilities and lifestyle choices, whereas the community needs flexibility to achieve economic growth, high levels of employment and increased workforce participation. However, others such as Viebrock and Clasen (2009) suggest that 'flexicurity' has an ambiguous and 'buzzword character' that pays little regard to existing traditions in labour market policies and is not easily distinguishable from "… an old agenda aimed at making labour markets more flexible and curtailing employee' rights" (2009, p. 23).

Other key changes in global labour markets have included the steadily increasing female workforce participation rate (Thévenon 2013). As women still disproportionally bear the responsibility for domestic duties and childcare, there is strong demand for flexibility in their working arrangements to reconcile work and home needs. In many countries, people are also living longer. The OECD (2006) has raised concerns that unless the workforce participation of older workers improves, the increase in retirees may threaten existing living standards and social welfare systems. Thus, far many policies have concentrated on trying to encourage older workers to maintain their employability and postpone retirement (Griffin and Beddie 2011). There are various ways this could be addressed—for example through workplace change and restructuring, focusing on financial systems, communities and housing to enable greater workforce and workplace participation (Per Capita Australia 2014, p. 7) to name a few. Thus, policies and practices are needed that create more employment choices for older workers, such as enabling flexibility around the hours and location of work to support different of levels of mobility and working capability. Similarly, improving the flexibility of work arrangements is critical to increasing inclusive work options for people with disabilities or health conditions, who are currently underrepresented in the workforce and over represented among the poor (OECD 2010).

Organizations face existential challenges in the postindustrial era as standardization and relative stability are replaced by rapid changes and volatility. One approach to uncertainty is to move toward employing more contingent and outsourced labour, and shrinking the core workforce (Kalleberg 2001). Another approach is to create more resilient and agile organizations by investing in workforce retention, innovation and capability development (Burgess and Connell 2013). Both approaches recognize the need for increased organizational flexibility in order to respond to ongoing economic and technological disruption. Contemporary organizations also have to manage more diverse and international workforces. In addition to introducing workplace flexibility policies and practices for equitable reasons, many jurisdictions legally require organizations to offer flexible working arrangements to employees who have caring responsibilities or to accommodate disability or health conditions. Another example is Australia's 'Right to Request' (RTR) provisions which give parents of preschool children and those with a disabled child aged up to the age of 18 the right to request flexibility with regard to their working arrangements.

2.2 Telecommuting and Flexibility

Telecommuting has been proposed as a way of contributing to individual and organizational flexibility. Telecommuting can be defined as "any form of substitution of information technologies (such as telecommunications and computers) for work-related travel; moving the work to the workers instead of moving the workers to work" (Nilles 1998). Other generally synonymous terms for telecommuting include: 'telework', 'remote work', 'virtual work', 'distributed work', or 'anywhere working'.

Where workplaces have implemented telecommuting, workers are not all colocated in the same geographic location (and may not even be working in the same time periods), but are instead connected via technology, usually the Internet (Lipnack and Stamps 2000). Telecommuting can occur in isolation without communication with other workers, or it can be collaborative where a group of workers cooperate toward shared goals (Zenun et al. 2007). Garrett and Danziger (2007, p. 28) found that telecommuting broadly encompasses three types of workers: "(a) those whose remote work is from the home or in a satellite office, (b) those whose telecommuting is primarily in the field, and (c) those whose work is 'networked' in such a way that they regularly work in a combination of home, work, and field contexts." The predominant model of telecommuting involves workers regularly (but not necessarily exclusively) working from their home or a nearby site that is neither owned nor leased by their employer.

Internationally, a growing number of organizations have implemented telecommuting arrangements (Hertel et al. 2005). In the US, it is estimated that in 2012, 3.3 million people considered the home as their primary place of work, growing by 79.7 % from 1.8 million in 2005 (Global Workplace Analytics 2013). The

number of US adults engaging in at least occasional telecommuting was estimated at 34 million in 2009, forecasted to reach 63 million by 2016 (Forrester Research Inc. 2009). In Australia, it is estimated that in 2013, 5.6 million adult Australians aged 18 years and over could be classified as 'digital workers'—that is, they used the internet to work away from the office (Di Gregorio 2013). This represented 51 % of the total employed workforce in Australia. Mostly this work away from the office is being undertaken at home with 82 % of digital workers (4.6 million) reporting working from home and only 28 % (1.6 million) reporting that they worked while travelling or commuting. Di Gregorio reports that 2.8 million Australians (49 % of digital workers) worked away from office at least two days a week.

Much of the extant literature on the topic recognizes that implementing telecommuting arrangements can potentially offer a range of flexibility benefits for both individuals and organizations. Some of the key factors highlighted in relevant literature are summarized in Table 2.1.

For individuals, telecommuting can enable flexibility in a number of ways that can help to improve their work–life choices. It can allow flexibility to accommodate other duties outside of the workplace, most notably domestic caring responsibilities (Troup and Rose 2012) and it can provide a much needed accommodation to increase accessibility options for those living with disability or health issues, such as reducing or eliminating the need for travel, and offers greater flexibility with regards to working hours (West and Anderson 2005). Telecommuting also enables individuals to have a greater choice of residential location and thus the ability to choose from a greater range of employers, not just those that have conveniently located workplaces (Tayyaran et al. 2003). Benefits for individuals associated with telecommuting flexibility include: increases to perceived autonomy, job satisfaction and performance, along with reduced stress and work–family conflict (Gajendran and Harrison 2007). Furthermore, telecommuting has been posited to lessen time lost in long commutes (Fuhr and Pociask 2011), lower costs associated with travel to the workplace (Kitou and Horvath 2008) and reduce workplace distractions (Van der Meulen et al. 2012).

Table 2.1 Summary of benefits of telecommuting for individuals and organizations

Benefits for individuals	Benefits for organizations
Greater individual flexibility and autonomy (Gajendran and Harrison 2007)	The reduction of office costs (Offstein et al. 2010)
Flexibility for domestic caring responsibilities (Troup and Rose 2012)	Access to a global talent pool (Offstein et al. 2010)
Accommodation for those living with disability or health issues (West and Anderson 2005)	Increased productivity (Bloom et al. 2013)
Reduced time lost in long commutes (Fuhr and Pociask 2011)	Improved employee engagement (Sardeshmukh et al. 2012)
Reduced workplace distractions (Van der Meulen et al. 2012)	Improved retention (Di Martino and Wirth 2001)
	Claim reduced carbon emissions (Fuhr and Pociask 2011)

For organizations, telecommuting can provide flexibility with regard to the management of office premises and thus assist with reduced costs (Offstein et al. 2010) and potential carbon emissions (Fuhr and Pociask 2011). Perhaps the greatest set of benefits is likely to accrue from increased flexibility in workforce recruitment and management. Supporting telecommuting options allows organizations access to a far larger global talent pool (Offstein et al. 2010) rather than being limited to candidates who are either local or willing to relocate. Once recruited, telecommuting can help organizations to retain their staff, and while this may be particularly helpful in retaining valuable employees who have caring duties (Di Martino and Wirth 2001), telecommuting options have been found to more generally improve workforce engagement (Sardeshmukh et al. 2012) and reduce turnover intent (Gajendran and Harrison 2007). Telecommuting has also been found to reduce absenteeism (Collins 2005), improve productivity (Bloom et al. 2013) and performance (Gajendran and Harrison 2007).

2.3 Telecommuting Issues for Individuals

While there are numerous posited benefits, telecommuting also reportedly has potential drawbacks and challenges for workers. Most notably, numerous studies have raised concerns about the possibility of reduced socialization and increased worker isolation (see Morgan and Symon 2002; Montreuil and Lippel 2003; Golden 2007; Di Gregorio 2013). For example, Bloom et al. (2013) conducted a telecommuting trial for workers in a call centre based in Shanghai, China. Despite the study finding that productivity greatly increased (by 13 % over nine months), at the end of the trial, over half of the employees who had expressed a preference to work at home changed their minds by choosing to remain in office due to social isolation and the reduced success rates associated with the promotion of telecommuting workers.

There are also acknowledged risks that career advancement may be hindered for those who practice telecommuting. Employees who telecommute can be perceived by their managers and colleagues as having 'opted out' of a career regardless of their actual choices (Leslie et al. 2012). Research conducted by Maruyama and Tietze (2012) found that a common reported outcome of telecommuting, especially for women who spent more than 50 % of their working time at home, was reduced visibility and a lack of career advancement. Cooper and Kurland (2002) found that telecommuters were at risk of professional isolation, a more specific type of social isolation, and this was connected with exclusion from employee development activities. They found that telecommuters missed out on three important sources of employee professional development. The first being interpersonal networking with other colleagues in an organization. The research study found that some managers felt that the reduction in face-to-face interactions with telecommuting staff had a negative impact on organizational camaraderie, which in turn reduced productivity. A second source of professional development was the

learning that happens informally and spontaneously, often through face-to-face contact and observation. Telecommuters in the study felt that they missed out on much of the informal learning that happened in the office—especially information sharing that could better support being able to do their work tasks as well as help their more general professional development. The third source noted by the study was mentoring as some managers reported feeling hampered in their ability to coach and develop telecommuting employers because they were not able to support them as they worked.

There can also be the additional stigma associated with managers and co-workers viewing telecommuting as an opportunity for 'shirking' (Peters et al. 2006), meaning telecommuters would not be trusted to work diligently without supervision. The belief that telecommuters do not perform as well as those in the office can negatively affect how a telecommuting employee is perceived in a team. An experimental study conducted by Dutcher and Saral (2014) found that false beliefs about telecommuting team mates such as their being less productive than their non-telecommuting counterparts led to lower team effort and thus lower productivity. These false beliefs were held by both telecommuters and non-telecommuters despite the study finding no evidence that telecommuters were less productive. The lower the team's estimations of productivity associated with telecommuting, the lower were found to be the resulting effort and performance (Dutcher and Saral 2014).

In addition to expressed beliefs about telecommuters, there are also subconscious effects that can exert influence over a telecommuter's standing in an organization. Elsbach and Cable (2012) investigated the importance of "passive face time" and found that just being seen in the office was enough to create inferences about the observed person's work-related traits. These inferences were formed without the need for active interaction and where no information was provided about what the worker was doing or how well the worker was doing it. If the worker was seen during expected work hours, then the worker was viewed as being "responsible" and "dependable"; if the worker was also seen outside expected work hours, then the worker was seen as "committed" and "dedicated" and more likely considered as having the potential for future leadership roles. Such perceptions can be problematic for telecommuting workers who are not frequently seen in the office. The researchers found that telecommuters develop strategies to compensate for 'non face time' such as sending e-mails or voice mails early or late in the day and by making themselves immediately available when working from home. However, these compensating strategies tend to lead to another paradoxical problem that arises from telecommuting.

Although telecommuting is proposed as a solution to better manage work–life conflicts as it allows workers to have more flexibility as to when and where they work, that same flexibility can contribute to increasing work–life conflict by blurring the boundaries between work and home. Where telecommuting employees feel that they need to prove their commitment to work by demonstrating work out of standard hours or a level of responsiveness that they would not feel necessary if they were working from an office, this is likely to further blur such protective boundaries. For example, Pocock and Skinner (2013) examined the use of email

by workers outside of work hours and found that while workers valued the flexibility to respond rapidly, this was also associated with work–life interference.

A partial explanation of the paradoxical outcomes of telecommuting is the differences in individual cases and their contexts. Some researchers suggest that individual characteristics may play a prominent role in determining successful telecommuting outcomes (Khalifa and Davison 2000; Raghuram et al. 2003). Others argue that telecommuting success is more dependent on organizational support and training (Martínez-Sánchez et al. 2008; Lautsch et al. 2009; Lautsch and Kossek 2010). Maruyama and Tietze (2012) found notable differences in perceived telecommuting outcomes depending on gender, the presence of caring responsibilities, and occupation. Similarly, Cooper and Kurland (2002) found there were salient differences in the way public and private sectors organizations perceived and approached issues arising from telecommuting. Not only are individuals and organizations different, but so are the premises at which telecommuting takes place. So while telecommuting has been associated with fewer distractions, it has also been associated with additional distractions (Sullivan and Lewis 2001). This can be explained by some telecommuters having to share their working space and hours with others, such as family members, while others do not. Likewise, some telecommuters may have dedicated office space in their home with good quality equipment and communication services, while others may not. Hence, such differences can result in differing outcomes (Fonner and Stache 2012).

2.4 Telecommuting Issues for Organizations

There are a number of issues that can arise for organizations considering implementing telecommuting practices. Many of the issues that individuals face can also create issues from an organizational perspective. For example, social isolation has already been raised as a significant issue for individuals who telecommute, likewise, the organization may also be affected if the employee disengages as a result of social isolation.

Another prominent issue, raised previously in this chapter, is the concern that reduced face-to-face time will impede workplace socialization. Workplace socialization is widely recognized as a critical component of workplace learning and organizational knowledge transfer (e.g. Lave and Wenger 1991; Nonaka 1994; Nonaka and Takeuchi 1995). For example, Davenport and Prusak (1998) highlighted the importance for organizational knowledge transfer of unplanned informal workplace conversations, such as those that might occur around a communal water cooler, despite managers viewing this as wasted time. Colocation with work colleagues has been recognized as important for tacit learning, that is, learning that cannot be easily codified (Nonaka 1994; Nonaka and Takeuchi 1995; Parrino 2013). Consequently, separation from the central workplace may lead to those who are working away from the office being excluded from knowledge sharing and transfer (Davenport and Prusak 1998; Zakaria et al. 2004). It could also result

in reduced learning (and thus reduced capabilities) for the employee, and fewer opportunities for the employee to share knowledge with others, thus reducing overall organizational learning.

While many of the issues associated with telecommuting can be addressed by better support, policies, and training, many organizations and managers struggle with knowing what to do (Peters et al. 2006; Lautsch et al. 2009). Best practices are far from clear and often depend on the individual situation and context. Managing telecommuting requires adaptive strategies to balance a range of needs (Lautsch and Kossek 2010). Managers are often apprehensive about the loss of control due to no longer being able to see the telecommuting employee and can be tempted into implementing restrictive policies in order to wrest back some of that control. These attempts could potentially undermine the benefits of telecommuting for both the worker and the organization (Lautsch and Kossek 2010). Similarly, if not fairly and adequately supported, telecommuting can affect the cohesiveness and effectiveness of teams. Facilitating communication and the coordination of virtual teams can be challenging, with both managers and staff reporting concerns that telecommuting would impair collaborative teamwork (Mahler 2012). Despite Dutcher and Saral (2014) finding in their study that the belief that telecommuters were less productive than their in-office counterparts did not hold up to the evidence, they found that the false belief still had the potential to negatively impact on team productivity. Moreover, if telecommuting options are not open to all (or able to be taken up by all), resentment can occur from those who are unable to telecommute (Lautsch et al. 2009; Mahler 2012).

Managers can also struggle with how to best support the infrastructural needs of telecommuters. Reliable and adequate information technology and communications systems are known to be associated with better telecommuting outcomes (Bélanger et al. 2001; Collins 2005). However, supporting off-site work seats can add complexity to the organization's existing arrangements and require additional expertise (for example, knowing how to set up and use virtual communications software). These challenges are compounded by the uncertainty that many managers face around the occupational health and safety risks and requirements in relation to telecommuting workers. Legal responsibility and liability can differ between jurisdictions and many organizations do not have adequate policies to guide managers and staff. While Montreuil and Lippel (2003) acknowledged that telecommuting was generally seen by workers as having a positive effect on their health, the researchers identified some specific risks that applied to telecommuting workers. In addition to distress from isolation, telecommuters could experience ergonomic issues arising from work station design and long hours spent working without adequate breaks.

2.5 Emergence of Co-working

Co-working is an emerging form of work organization that arose out of the needs of telecommuting employees and independent consultants working from home and to overcome isolation and loneliness (Spinuzzi 2012). Co-working is a practice

where people occupy a desk on a casual or temporary basis in a workspace that is shared with others. Unlike a traditional workplace or "hot-desking" workplaces where employers have enacted a policy of no set desk spaces (Hirst 2011), the workspace is not usually controlled by an employer but is managed by an external organizer with the aim of facilitating access to shared working spaces and resources. These facilities are then accessed by a range of individuals who may be employed by an external organization or they may be self-employed or contractors (Foertsch 2013).

The co-working spaces themselves and the types of work undertaken there are fluid and emergent. While co-working practices seem to be most prevalent in the technology and communications fields, the co-working model is expanding to other professional and creative fields (Surman 2013). Some co-working spaces are more formally organized, for example, with a dedicated role to support learning and development, while others may emerge from a company casually renting out some unneeded space. In addition, there is recognition of the prior existence of informal co-working spaces such as libraries (Caldwell et al. 2012; Chen et al. 2013) and coffee shops (Liegl 2014).

2.6 Potential Benefits of Co-Working to Flexibility

As co-working practices are still a relatively new phenomenon it means that, as yet, there is scant academic research published on the topic. What appears to be clear is that, co-working is meeting a market need as there has been an exponential increase in the creation of co-working spaces and numbers of people taking up co-working since its advent in the early 2000s (Deskmag 2012). Co-working spaces are becoming more prominent in communities as well, with some universities being associated with community incubators and 'accelerators' operating as a bridge until entrepreneurs and their businesses can operate alone (Aliaga-Isla and Rialp 2014).

Co-working by its very nature is social, and thus a primary benefit is its potential to address one of the biggest issues associated with telecommuting—that is, social isolation. Co-working provides an opportunity for people who work geographically away from their fellow organizational colleagues (or those who may have none due to being self-employed) to be able to still work in the company of other people. Co-working spaces may even provide some additional benefits as they enable social access to others, without the same distracting or destructive office politics that plague some organizations.

Co-working may also be able to address some of the professional development drawbacks of telecommuting. Although co-working does not prevent the lack of face time with office colleagues or professional visibility within an organization as a co-working employee is still working at a geographical distance (and indeed, there is evidence that employees in satellite offices can suffer loss of professional visibility even though they are colocated with other organizational colleagues

(Morganson et al. 2010)), it may create other developmental opportunities that are unlikely to exist for those working from the organization's central office.

Co-working spaces can attract a diverse range of users that in turn, can enable rich learning experiences. For example, research conducted in Queensland, Australia found that users of co-working spaces in libraries created curated ecologies of hybrid personal learning environments that combined work, play and learning (Caldwell et al. 2012). While telecommuting employees who use co-working spaces may still miss out on the informal and spontaneous opportunities to learn from their colleagues, they can gain access to informal learning and mentoring opportunities from others outside of their organization who are sharing their co-working space. This opens up the possibility of learning new skills and knowledge that cannot (or are difficult to) be found within the organization. In particular, co-working spaces have developed in conjunction with a strong association to entrepreneurialism and start-ups, as many new businesses use co-working spaces as an affordable and flexible way of renting office space. There has been an interest in the co-working space model to encourage the formation and growth of new businesses and to inject innovation and creativity into existing ones (Johns and Gratton 2013). Large companies and governments are starting to locate some of their employees in co-working spaces to stimulate new ways of thinking and operating (Sharp 2013). For example, one of the authors recently conducted research interviews with a sample group of 'Spacecubed' co-workers and staff. Spacecubed is a 'coworking, collaboration and innovation workspace' based in Perth, Western Australia and was created in March 2012. In 1 year it outgrew its original space and opened another venue to accommodate its 300 plus members. Spacecubed has amongst its members: telecommuters; entrepreneurs; local government; not-for-profit-organizations; bank staff; private enterprise; and more. Members join the community environment in order to share ideas and innovate, supported by numerous facilitated and informal events such as start-up weekends (Connell and Tharaup 2014).

While co-working spaces may not address the loss of face-to-face intra-organizational networking that is so important to career development, it can potentially create new opportunities for networking and professional visibility outside of the traditional organization. This can benefit telecommuting individuals by expanding their interpersonal networks and the scope of their professional reputation while also benefitting organizations by increasing access to external networks. Increasingly, co-working spaces are developing more formal programs to support learning and professional development activities such as regular networking events and organized educational seminars (Bizzarri 2010).

A key aspect of many co-working spaces is the provision of information technology and communication infrastructure. While some co-working spaces require a user to supply their own computer and others will provide desktop computers, generally, internet and printing facilities are provided as standard. In addition, many co-working spaces also provide access to meeting rooms that can be booked by users. In this way, co-working spaces can enable greater access to telecommuting for those whose might otherwise be excluded due to not having adequate equipment and facilities. For example, co-working hubs have been created outside

of metropolitan centres to enable people to remain living in rural and regional areas providing access to high quality office infrastructure and reliable communications technology that they may not have at home.

Another benefit that co-working spaces have is that they are a professional work environment that is separate from the home. As such, co-working spaces can play a role in helping to establish and maintain work–life boundaries. They may even help counter some of the stigma and concerns in relation to nonwork distractions that can be associated with working from home, as telecommuters are working in an environment free from domestic distractions, while amongst other professional workers.

2.7 Conclusion

Telecommuting can be used to improve flexibility for both individuals and organizations. It can expand workforce participation options for those who may face barriers attending work—such as people living with disability or health issues. It can enable flexibility as to where and when work gets done, so that individuals can have more choices in balancing other responsibilities such as caring for children. For organizations, telecommuting facilitates greater flexibility in managing office space and staff. Offering telecommuting options to employees may help to improve workforce engagement and retention, as well as potentially expanding recruitment access to a more global talent pool. However, telecommuting is not without its risks and challenges. The most notable risk is the likelihood of social isolation if people work all day from their homes and see little of their work colleagues. This isolation can lead to professional isolation and reduced learning and development opportunities, which is harmful for individual careers and can also impact negatively on organizational teamwork and knowledge transfer.

Co-working is emerging as a way of working that enables individual and organizations to gain many of the benefits of telecommuting but without many of its drawbacks. In particular, co-working can help address the social isolation that many telecommuters report experiencing, as well as providing easy access to reliable infrastructure on a flexible basis. While co-working may not address issues such as loss of visibility within an organization or exclusion from face-to-face everyday office learning and mentoring, co-working offers new and expanded opportunities for learning and networking that may not be easily found within an organization. Moreover, governments and larger organizations are starting to support staff use of co-working as a way of stimulating innovation and creativity.

In summary, this chapter outlined some of the key issues related to individual and organizational flexibility in relation to telecommuting. By examining relevant literature, it illustrated that there are a number of advantages and disadvantages that are apparent from both perspectives, while finally, proposing that co-working may not be able to solve all the issues that telecommuting raises, but it does offer a promising new way of working that can contribute to individual and organizational flexibility.

It is recommended that future research on the topic includes an empirical study of co-working, co-workers, and telecommuters in order to gain a better understanding of the issues.

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Chapter 3
An Exploration of Holistic Learning in Different Contexts

Tirumala R. Vinnakota

Abstract In order to excel in today's competitive and complex business world, one has to be a holistic learner and be flexible enough to take on the challenges of holistic learning. The purpose of this chapter is to explore 'holistic learning' and introduce a cybernetic framework to aid in that structured exploration. A comparative analysis of various descriptions of holistic learning is explored in simple, complicated, and complex contexts by mapping these three contexts against three types of learning, viz transmissive, transactive and transformative. In order to aid structured conceptual explorations, a cybernetic framework based on X-matrix that has been implemented using Microsoft® Excel® is introduced. In the course of this conceptual exploration, the relationship between understanding and acting and what it means to transition from understanding to acting and acting to understanding is explored. The findings of this research suggest that holistic learning is context dependent and is different in different contexts. If the context is simple, then holistic learning may be described as a circular conjoining of learning from acting to understanding and understanding to acting. If the context is complicated, then holistic learning may be described as a spiral conjoining of learning from acting to understanding and understanding to acting. If the context is complex, then holistic learning may be described as a journey of learning's and not an end by itself. In general, transformative learning is considered holistic learning. Through this exploration of holistic learning, distinctions are drawn across different contexts enabling the learner to be aware of the challenges involved in holistic learning. The learner has to be flexible to acquire various learning's that will lead to holistic learning. The framework will be useful for learners to carry out explorations, test their previous understanding's/learning's, analyze the relationships between 'actions/activities and understandings' and vice versa. The framework can be customized to suit various explorations with an emphasis on iteration, reflection and flexibility.

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3.1 Introduction

In today's complex world with rapid growth of information mainly due to the
internet, approaches to learning have once again taken a centre stage. Action leads
to rich understanding due to unique and enormous possibilities that exist in the
environment. This is one type of learning approach. The other learning approach is
from applying the understanding to action. These two learning's can be described
as linear causalities and when these two learning's are conjoined in a circular fash-
ion, it can be described as circular causality and needs to be explored. However,
there is a risk to one's learning, since the belief is that not having holistic learning
is a risk. So holistic learning is explored here.

Correct understanding is necessary but not sufficient to complete the goal, since
correct acting is also important. Improper actions/misunderstandings may lead to
loss of time, money and other undesirable circumstances. Occurrence of positive
feedback loop, resulting from incorrect understanding and incorrect action rein-
forcing each other in a circular way is a bigger risk in reaching the goal. There is
learning when the goal is reached and also when the goal is not reached. Having
holistic learning may mitigate the risk to one's learning in some contexts. So the
learner has to be flexible to acquire various learning's towards gaining holistic
learning.

In this chapter, we have explored relationships and the transition between act-
ing and understanding and how these can be explained using commute principle,
cybernetics circular causality, spiral causality and their patterns. The explored
relationships and transitions were further used to explore holistic learning about
different contexts (simple, complicated and complex) and different approaches
to learning (Transmissive, Transactive and Transformative). The chapter explores
only individual learning. Group learning or organizational learning is not explored.
In order to operationalize these explorations, a cybernetic framework based
on X-matrix was proposed and it was implemented using Microsoft® Excel®
software.

The organization of the chapter is as follows: Sect. 3.2 discusses the character-
istics of simple, complicated and complex problems, Sect. 3.3 briefly discusses the
literature review of theories of learning, holistic learning and cybernetics, Sect. 3.4
discusses the approach to explore relationships between action and understanding
and holistic learning, Sect. 3.5 introduces a cybernetic framework that will be use-
ful for these explorations and Sect. 3.6 draws some conclusions.

3.2 Different Types of Problems—Simple, Complicated and Complex

Glouberman and Zimmerman (2002) discussed different types of problems–simple, complicated and complex and also provided comparison of the properties of each class of problem. They equated simple problems with similarity of "Following a recipe", complicated problems with similarity of "Sending a Rocket to the Moon" and complex problems with that of "Raising a Child". According to them: simple problems involve jargons and procedures or practices and there is a high certainty of solving them once the procedures are understood and well practiced; complicated problems involve many simple problems and are not just a collection of them but with a high scale, needing skills of organization and expert knowledge; complex problems involve many complicated and simple problems and are not just a collection of them. They also involve special concepts such as nonlinearity, interdependency, self-adaptation, initial situations with a large amount of ambiguity and uncertainty.

For Kurtz and Snowden (2003), simple problems are: the domain of the orderly, cause and effect are visible and well known; complicated problems are: the domain that can be known and calls for expert knowledge; complex problems are: not visible, not completely understood, the domain that cannot be known, but only patterns can be known after the fact.

3.3 Learning—Theories of Learning, Holistic Learning and Cybernetics

Schunk (2012) uses different words, i.e. proposed, maintained, etc. about two types of learning theories: behavioural theories and Cognitive theories. Behavioural theories deal with the metrics of learning that will have an impact on behavioural changes and cognitive theories deal with the workings of the mind for learning (Schunk 2012). When significant problems are dealt, these two theories are contrasted in the way of their approach. Kolb's (1984) experiential learning theory claims that it is a process-based holistic learning model that not only focuses on experience but also combines it with "perception, cognition and behaviour".

According to Holistic learning theory by Laird (1985), individual's effective learning calls for activation of his/her personality elements especially "the intellect, emotions, the body impulse(or desire), intuition and imagination". Yang (2003) elaborates the details of Holistic learning theory with three facets of knowledge mapped against three knowledge layers and claims that learning according to holistic learning theory is both an individual and social activity.

Johnson (2006) discusses three views of teaching shown below.

Transmission View of Teaching: In this view, Johnson (2006) discusses that the teaching content is broadcast from the Teacher to students in a structured way but is passively received by students. The extent to which the student absorbs the content is measured for their academic learning and progress.

Transaction View of Teaching: In this view, it is perceived that the teacher provides conditions for students to transact with the teaching content and construct knowledge actively and this view is based on constructivism. The students are measured for their achievement on how they use this knowledge to deal with real-life situations or design solutions that can be used in society.

Transformation View of Teaching: In this view, Johnson (2006), briefs that teaching provides situations with the aim of transforming the learner in multiple dimensions and is based on the educational philosophy of holism. Achievement is measured against the learners' capabilities for greater understanding and care for different levels in the environment.

Pickering (2004) discussed the work of Stafford Beer in Management cybernetics and informatics and how his work demonstrated cybernetics as a science to address the unknowability of complex systems. Sushil (2012) suggests systemic flexibility as the way forward to deal with today's turbulent business situations and states different views on flexible systems management. To add to that, in our view, cybernetics provides immense support for understanding/learning of systemic flexibility design.

3.4 Method/Approach for Exploration

In order to carry out our exploration on relationships between acting and understanding and holistic learning, we intend to structure it such that endless wandering can be avoided. At the same time, we want the exploration to be reasonably complete or holistic. Learning about problems that are either simple, complicated or complex as defined by Glouberman and Zimmerman (2002) have been mapped with the types (approaches to) of learning that is an outcome of the three types of teaching, i.e. transmission, transaction and transformation as proposed by Johnson (2006) to arrive at a matrix structure shown in Table 3.1 will be used for conceptual exploration of the relationships between acting and understanding and vice versa along with holistic learning.

Though Glouberman and Zimmerman (2002) discussed problems, for learning sake, it may be generalized to include not only problems, systems or domains but also, examples like a simple system, complicated system and complex system or simply name it as context that is either simple, complicated or complex. The context is generic and can refer to a situation, environment and occasion. In other words, the learning about contexts has been mapped with approaches to learning them.

Table 3.1 Matrix structure of learning about contexts versus learning types for exploration of holistic learning

Learning	Context		
	Simple	Complicated	Complex
Transmissive	commute principle—Acting to Understanding	Circular Causality—Acting to Understanding	Patterns of acting to understanding basing on commute principle and circular causality
Transactive	commute principle—Acting to Understanding or Understanding to acting	Circular Causality—Acting to Understanding or Understanding to acting	Patterns of acting to understanding or understanding to acting basing on commute principle and circular causality
Transformative	Circular Conjoining of Acting to understanding and Understanding to acting	Spiral Conjoining of Acting to understanding and Understanding to acting	Journey of Acting to understanding and Understanding to acting

(Adapted and modified from Glouberman and Zimmerman 2002 and Johnson 2006)

The first dimension of the matrix structure is learning about contexts. The other dimension is approaches to Learning. Learning that uses a transmission approach, where the learner passively receives/learns by transmission, is Transmissive learning; Learning that uses a transaction approach where the learner actively constructs learning by transacting, is Transactive learning; Learning that uses transformation approach where the learner uses both passive transmission and active construction and gets transformed in respect of learning, is Transformative learning.

3.4.1 Exploration for Holistic Learning—Simple Context

3.4.1.1 Learning—Simple Context with Transmissive Approach

Learning about a simple context is a reference to either Glouberman and Zimmerman (2002) saying that simple problems do not need expertise or Kurtz and Snowden (2003) saying that simple problems are the domain of the orderly, cause and effects are visible and well known. Here, context is being referred to as problems.

The Transmissive approach is about gaining understanding by performing actions, so the learning—acting to understanding using a commute principle is depicted in Fig. 3.1. Since the characteristics of simple context (like expertise is not needed, cause and effect are well understood and it is the domain of the known) are well-suited for the Transmissive approach, the commute principle—Acting to understanding applies here without any problem. The activities here

Fig. 3.1 Learning process commute principle—Acting to understanding

refer to attending a session or lecture on some topic, reading a handout, listening, asking questions, comprehending, etc. to gain the understanding of the topic.

Learning about a simple context with transmissive approach is all about applying the commute principle—Acting to understanding as shown in Fig. 3.1.

3.4.1.2 Learning—Simple Context with Transactive Approach

The Transactive approach is about performing transactions or actions/activities by applying prior understanding. Hence, the learning—understanding to acting applies here in case there is prior understanding with the learner. If not, the learner may imagine the understanding and proceed with acting, changing the course, and again acting. Once the acting is complete, the learner may construct the understanding. Since the cause and effect are related in a simple way, performing actions with or without actual understanding may not be difficult since it is the domain of the known. So performing actions or transactions will be with or without prior understanding.

Hence, learning about a simple context with Transactive approach is all about applying the commute principle—understanding to acting as shown in Fig. 3.2; or acting to understanding as shown in Fig. 3.1.
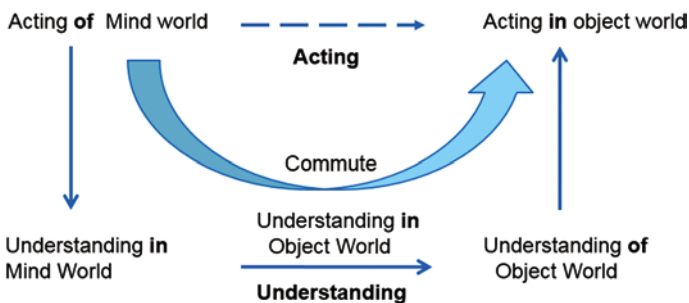

Fig. 3.2 Learning process commute principle—Understanding to acting

3.4.1.3 Learning—Simple Context with Transformative Approach

The Transformative approach is about performing transactions or actions/activities to gain understanding and applying that understanding to perform actions. Thus, the combination of learning's from acting to understanding and understanding to acting applies here. With these learning's there may be a transformation in the learner with a self-recognition that the learner has learnt and it may be complete in a holistic sense.

Learning about a simple context with transformative approach is all about applying the circular conjoining of commute principles—acting to understanding and understanding to acting. This may be considered as holistic learning in a simple context as shown in Fig. 3.3.

3.4.2 Exploration for Holistic Learning—Complicated Context

3.4.2.1 Learning—Complicated Context with Transmissive Approach

Complicated context refers to characteristics defined by authors Glouberman and Zimmerman (2002) and Kurtz and Snowden (2003) as discussed earlier and these are: success needs multidisciplinary specialization with higher degree of skills and higher coordination, also it is the domain that can be known. Cybernetics applies here due to the multidisciplinary nature and it involves understanding the domain that is knowable.

In a complicated context with Transmissive approach, understanding is required by performing variety of actions, so the commute principle of acting to understanding that applies in a simple context do not apply here. The complicated context calls for multidisciplinary specialization with higher degree of skills and with higher coordination. So, for example, activities may include attending many special sessions conducted by many experts on the same topic, reading books, synthesizing perspectives, getting clarifications, being critical, etc. to gain an expert understanding of the topic. Since, it is necessary to synthesize many views and involves many iterations in understanding, the commute principle of acting to understanding may not apply and it will be necessary to consider the cybernetic principle of circular causality.

Fig. 3.3 Circular conjoining of learning's—Acting to understanding and understanding to acting
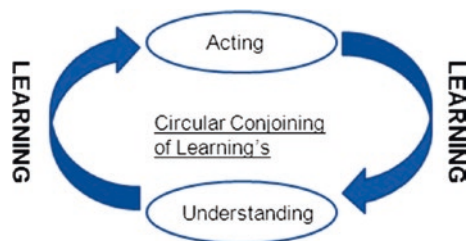
Fig. 3.4 Circular causality—
Acting to understanding
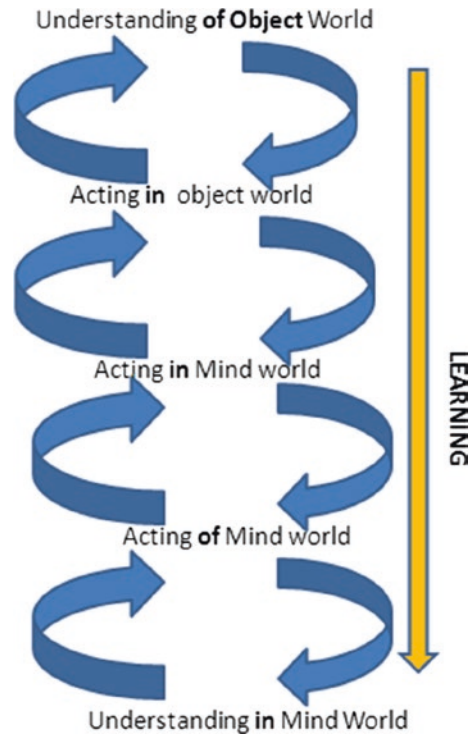
The movement from understanding of the object world to understanding in the mind world is not straight forward as in a simple context and involves circular causality with multiple iterations between all stages from understanding of the object world to understanding in the mind world as shown in Fig. 3.4.

Learning about a complicated context with Transmissive approach is all about applying the circular causality cybernetic principle—acting to understanding.

3.4.2.2 Learning—Complicated Context with Transactive Approach

In a complicated context with Transactive approach, two possibilities need to be considered. One is acting to understanding and the other is understanding to acting. It is possible that either of them exist based on whether prior understanding exists. If prior understanding exists, then that understanding can be utilized for acting, but it may not be a straight forward case as in a simple context and may involve multiple iterations between stages from acting in the mind world to acting in the object world as shown in Fig. 3.4. If no prior understanding exits for acting, then the learner can only perform actions iteratively and construct the understanding as shown in Fig. 3.5.

Fig. 3.5 Circular causality—
Understanding to acting
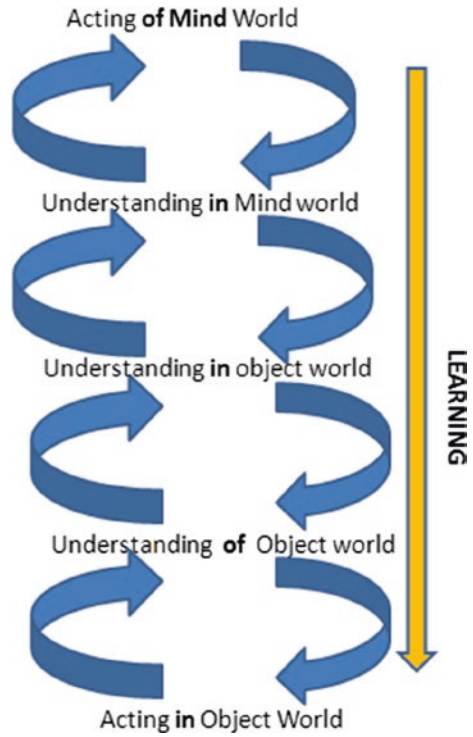
Learning about a complicated context with Transactive approach is all about applying the circular causality cybernetic principle—acting to understanding or understanding to acting.

3.4.2.3   Learning—Complicated Context with Transformative Approach

In the complicated context with Transformative approach, circular conjoining of acting to understanding and understanding to acting may not work and it is necessary to look for alternatives as it involves higher level of expert knowledge and higher level of coordination for success. Spiral conjoining of acting to understanding and understanding to acting seems to be a promising approach in this case as shown in Fig. 3.6. The difficulty level of the learner to get transformed in a complicated case is higher when compared to the simple context.

Learning about a complicated context with transformative approach is all about applying the spiral conjoining of circular causality cybernetic principle of acting to understanding and understanding to acting. This may be considered as holistic learning in a complicated context.

Fig. 3.6 Spiral conjoining of learning's—Acting to understanding and understanding to acting
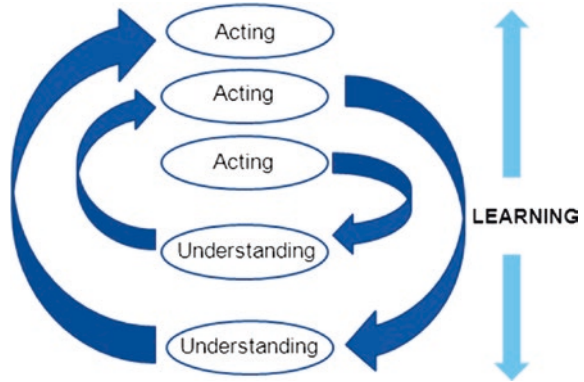
3.4.3 Exploration for Holistic Learning—Complex Context

3.4.3.1 Learning—Complex Context with Transmissive Approach

Complex context refers to characteristics as defined by the authors Glouberman and Zimmerman (2002) and Kurtz and Snowden (2003) and these are: each context is different, not visible, not orderly and not completely understood, the domain that cannot be known but only patterns can be known after the fact, expertise may or may not be useful with a lot of uncertainty on success. Cybernetics applies here due to the multidisciplinary nature and it can aid in the exploration of the unknowable by identifying the patterns that are at work due to cybernetic thinking.

In the complex context with transmissive approach, cybernetic thinking on the part of the learner is the only help. The learner may attend various expert sessions where they share their expert knowledge and experiences in complex contexts. However, that may not be sufficient due to the characteristics of complex contexts. The learner using cybernetic thinking should identify the patterns in all those complex contexts that experts shared and try to gain understanding that may be useful in exploring the unknowable.

Learning about a complex context with Transmissive approach is all about applying cybernetic thinking to identify patterns to gain understanding in the process of acting to understanding.

3.4.3.2 Learning—Complex Context with Transactive Approach

In the complex context with Transactive approach, the learner may use the understanding gained through Transmissive approach and start acting by applying it. In case the learner does not possess any such understanding, the learner has to start acting iteratively in a complex context using cybernetics principles, and will need

to be aware that every situation in a complex context is unique and start constructing the understanding of it iteratively. There is a need to leverage the patterns of commute principle and causality principles in complex contexts with Transactive approaches. Use of 'conversations' may be considered as they aid in Transactive learning.

Learning about a complex context with Transactive approach is all about applying the cybernetic principles in the case of acting to understanding if the learner does not possess any previous knowledge or understanding to acting in case the learner possess previous understanding.

3.4.3.3 Learning—Complex Context with Transformative Approach

In the complex context with Transformative approach, the Transmissive and Transactive approaches are combined and the learner has to not only understand the patterns in a complex context using cybernetic thinking but also act using cybernetic practices after understanding the relevant patterns in the complex context. Since, the complex context is the domain of the unknowable and every situation is unique, it is plausible to conclude that transformation of the learner may be seen only as journey of acting to understanding and understanding to acting and is not an end by itself.

Learning about a complex context with transformative approach is all about applying the cybernetic thinking and practices in acting to understanding and understanding to acting and it can be seen only as a journey and holistic learning in a complex context may not be possible due to the characteristics of complex context.

3.5 Operationalization of All Learning's Using a Cybernetics Framework

All the learning's that we have discussed so far using the matrix (Table 3.1) of structured exploration can be operationalized. In this chapter, we propose a cybernetic framework shown in Fig. 3.7 that will be useful as an aid to carry out structured explorations. The framework basing on X-matrix is implemented using Microsoft® Excel®. The four quadrants of X-matrix-based framework are Actions/Activities, Learning's/Understandings, Activities/Actions and Understanding/Learning's in a clockwise direction labeling them as first, second, third and fourth quadrants, respectively. The framework can describe linear causalities, circular causalities, spiral causalities and their patterns. The framework will be useful for explorations, testing of the previous understanding's/learning's, analyzing the relationships between 'actions/activities and understandings' and vice versa, and it can be customized to suit various explorations with an emphasis on iteration, reflection, and change.
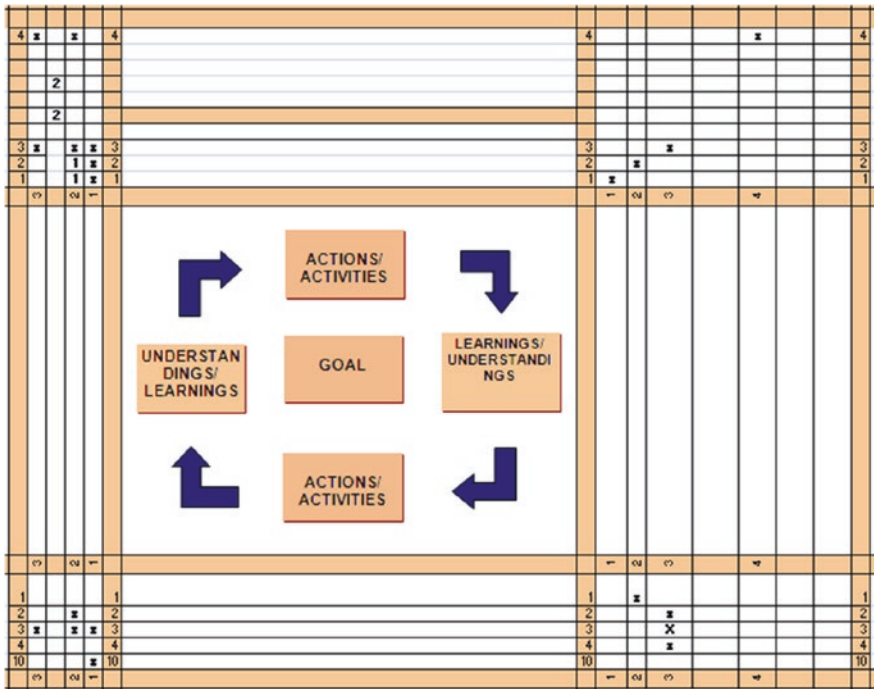
Fig. 3.7 A cybernetic framework for exploration based on X-Matrix using Microsoft® Excel® software

3.6 Conclusion

This chapter has focused on the characteristics comparison of different types of problems—simple, complicated and complex as defined by Glouberman and Zimmerman (2002) and Kurtz and Snowden (2003). The comparison of the three views of teaching as viewed by Johnson (2006) has been highlighted. Learning types, theories of learning and what is viewed as holistic learning, mentioned in the current literature have been discussed. Exploration of the relationships between acting and understanding, their transitions and how those relationships can be understood using the commute principle and causality principles have also been highlighted. Not having holistic learning is a risk to the learner, so we explored what may be described as holistic learning, so the learner will have an awareness of challenges involved in holistic learning and will be flexible to acquire various learning's towards gaining holistic learning. This exploration has been performed using the matrix structure of Learning about Contexts (simple, complicated, and complex) and Learning types (Transmissive, Transactive and Transformative) using the relationships and transitions of acting and understanding. How all these explorations can be operationalized using a cybernetic

framework based on X-matrix using Microsoft® Excel® software is briefly discussed. It has been observed that holistic learning is context dependent and it is different in different contexts. If the context is simple, then holistic learning may be described as circular conjoining of learning's from acting to understanding and understanding to acting. If the context is complicated, then holistic learning may be described as spiral conjoining of learning's from acting to understanding and understanding to acting. If the context is complex, then holistic learning may be described as a journey of learning's and is not an end by itself.

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Chapter 4
Flexible Distribution Strategies in Network Marketing Companies

Bhavannarayana Kandala and Sudha Vemaraju

Abstract This chapter focuses on rarely explored areas in research, i.e. flexible distribution strategies in Network marketing (NM) companies. The purpose of this chapter is to compare the customer's perception on flexible distribution strategies across the two companies i.e. *Amway India Enterprises (AIE)* and *Hindustan Unilever Network (HUN)* and formulate 'Distribution Flexibility' models for flexible distribution strategies. Empirical models are developed to test the predictors of 'Distribution Flexibility' in NM companies (*HUN* and *AIE*). This objective is attained through gathering information using 'Snowball' sampling technique from 300 *Hindustan Unilever Network* and 300 *Amway India* customers through structured questionnaire in Greater Hyderabad (Telangana State). The data was analyzed through descriptive and inferential statistics. The findings of this chapter reveal that the majority of *HUN r*espondents are business people, whereas housewives are more prevalent in *AIE*. 'Word of Mouth' (WOM) through 'Reference group' plays a leading role. 'Distribution Flexibility' is mostly by Network management support and acquaintances. 'Support' is low in *Amway* when compared to *HUN*. 'International quality' is comparatively high in *AIE* than *HUN*. Prices are perceived to be higher in *Amway India than Hindustan Unilever Network* customers. The study highlights the importance of taking appropriate corrective measures to attend major classes like demographics, customer loyalty and satisfaction by increasing the distribution flexibility in network marketing. Even though precautions are taken to include all sections to represent the Telangana state, it is more effective to conduct such studies geographically segment-wise to be more accurate. It is intended that the information from this study will help customers, distributors, and companies' executives to respond to the ever changing needs of end users in Indian marketing through increasing flexibility

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via Network marketing. The studies which focus on comparison of 'Distribution Flexibility' through network marketing (NM) in Indian context are very few and hence add more value in understanding customer's buying behaviour in these areas.

Keywords Consumer behaviour · Distribution flexibility · Marketing flexibility · Network marketing

4.1 Introduction

Network marketing has been transforming the distribution system through creating flexibility in distribution and is gaining momentum. Many organizations across the globe have professed the potential of NM in reaching prospective customers through flexible distribution strategies in every corner of the contemporary world. The long-established distribution chain in most of the companies relied on a physical distribution system of "Manufacturer—Wholesaler—Retailer—Consumer" concept. Berry (1997) articulates that in essence, Network Marketing [NM] is a way of organizing sales operations of a direct selling organization. It is a non-store approach relating to distribution of goods and services, directly to the customers. Network Marketing integrates the crux of free enterprise by providing an opportunity for the interested individuals or independent contractors to run a home based business. The network marketing thrives as a sales force catering to the recruitment of other members down the line in the market—making and hierarchy of multiple levels of compensation. It is like lessening the scale of networking of sales persons in selling products to the end users through 'Referral' and WOM marketing. The globalization coupled with rising incomes, increased customer exposure to different media, modern retail formats and digital marketing lead to customer centric revolution.

According to AC Nielsen study report (2002), consumers are seeking a flexible shopping experience across various channels, and expect marketers to deliver this. These shifts towards flexible shopping experience of customers have important implications for distribution systems that are competing in increasingly competitive environments. Added to this consumers are seeking more customized products or services than ever before. These shifts have fueled the growth of flexible distribution systems to increase reach and satisfy customers in a better way. But there is a huge gap in what customers say and how they exactly behave. Hence there exists a strong need to understand flexible distribution strategies, as it enables the distributors and marketers to serve customers better.

4.1.1 Context of the Study

According to the *World Federation of Direct Selling Association* (WFDSA), globally NM is operating in 100 plus countries. The market size of the direct selling industry was INR 63,851 million for 2011–2012 and is expected to reach INR 108,436 millions by 2014–2016. As per the *Indian Direct Selling Association*

(IDSA) estimates direct selling (DS) industry is expected to reach INR 340,000 million in 2011–2012 while the distributor base is expected to reach 80 Lakhs by 2014–2015. In India 'Direct Selling' is in nascent stage, i.e. two decades due to various reasons like lack of awareness and negative image etc. *AIE and HUN* are currently facing dip in sales revenues and hence the market share is coming down due to the high customer churn. According to AC Nielsen study report (2002) there is a significant shift in consumer buying behaviour. The study reports a sharp decline in average number of customers visit to store. Therefore, these swings in customers buying behaviour have an important bearing on Non-store retailers who are competing with store retailers in competitive environments through Network marketing.

This chapter progresses with providing the literature review relevant to distribution flexibility, identification of research gaps, approach of the study, design which includes sampling design, framed research questions, formulated hypotheses, data analysis and findings. The study concludes with providing the managerial implications, suggestions to distributors/customers, retailers for redesigning flexible distribution strategies, to attract and retain prospective consumers.

4.2 Literature Review

Flexibility is concerned with firm's ability to adapt itself to a wide range of possible environments, uncertainties that it may encounter (Nour et al. 2015, p. 88). 'Distribution Flexibility' is firm's ability to alter distribution processes in an efficient manner in order to adapt and meet the requirements of direct and indirect customers (Yu et al. 2012). Cova and Cova (2002, p. 2), stated that shoppers' within horizontal consumer-to-consumer networks can exhibit ethnic behaviour. As an adaptation to the current revolution in retail scenario and ambiguity in current business scenario, flexibility became a core issue in management research in the 1980s and 1990s (Slack 1987; Sethi and Sethi 1990; Gerwin 1993; Upton 1994; Koste and Malhotra 1999). As an extension to the above (Sezen and Yilmaz 2007) further stated that many distribution firms altered their channel relationships to sustain in this contemporary and vibrant scenario of the volatile business environment forces.

Distribution flexibility in general may be defined as the capability to alter distribution strategies by satisfying the distributors/network members in an efficient way to meet the requirements of customers'. Distribution flexibility strategies in this study refer to the firms' capability to swiftly adapt and react to the shifting customer needs through integrative capacities. Distribution flexibility plays a vital role in gaining and sustaining a strategic competitive advantage through customer satisfaction, loyalty and thereby converting loyal customers into customers plus distributors for spreading positive WOM and thereby expanding the distribution network of the firm. Research on the recipient side of 'Word-of-mouth' by Duhan et al. (1997) has shown that consumers have been found to seek more 'word-of-mouth' information when they are faced with a decision that is more difficult. Hence, there is need to address the true drivers of creating distribution flexibility in the Indian context.

Sparks and Schenk (2006, p. 3) stated that, multilevel marketing organizations (MLMs) are emerging speedily but regularly counter marketing organizational type boasting nearly 10 million members and over US $20 billion in annual sales. In terms of regional figures of overall direct selling industry, South India remains a central hub for direct selling companies closely followed by North India. Flexibility along with market orientation within chronological sequencing also seems to be a major theme for future research (Levinthal and Fichman 1988).

Berry (1997) stated that, in lieu of a supply organization building a large administrative and sales force comprising of employees, self-employed independent contractors can be encouraged to build a sales organization of persons, by deploying a unique training system called 'sponsoring'. In this system of sponsoring the distributor (sometimes referred to as an 'independent contractor' or 'a direct salesperson') the knowledge and expertise gets shared with the new entrants. In turn, for this commitment, the sponsor earns commission based on a percentage of the sales from those recruited, subject to the structure of the organization plan. As per the Debroy, *FICCI* (April 2013), NM companies' sales revenues are rapidly increasing year by year with compounded annual growth rate (CAGR) of 20 %. Additional source of income and employment is motivating more people to join this new sales channel (Sreekumar 2007). On contrary note, they are several myths associated with NM and many who join NM get disillusion very quickly, they lose interest and give up as a result the NM companies have large number of customers on paper but find very few active distributors (Bloch 1996). Msweli-Mbanga (2001) opined that distributors generate more sales and recruit more distributors in their network, only if they are committed to their organizations and have positive perceptions towards the organization's marketing mix. Distributor's social contacts have a higher propensity to purchase and this would result in increased performance. On the flip side, these organizations seem to attract critics which have complained that the average Network Marketing (NM) distributor earns very little. In light of the above mentioned facts, there is a need to take up research study on NM practices in Indian context focusing on the impact of demographic and behavioural aspects of the distributors of NM companies.

Hence we considered the demographic variables which were adapted and developed from Richard (1992), customer orientations and distributor attributes from the research conducted done by Reinartz et al. (2004) and Macintosh (2007), in order to understand the impact of demographic variables and the behavioural aspects like customer orientations and distributor attributes impact on consumer buying behaviour in network marketing firms.

4.3 Gaps Addressed and Evolved Research Questions

Based on the literature review this study identified research gaps, developed research questions, formulated objectives and framed hypotheses which form the base for this chapter. Earlier studies have not covered a major area of distribution

flexibility in NM firms. Hence, this study is focused on understanding customer buying behaviour, maintaining relationships and retaining them by attracting through 'royalties' and 'empowering them to recruit' prospective customers. Past studies have not covered Multilevel Marketing (MLM) in Non-store retail formats. Hence there is a strong need to explore various aspects of customers buying behaviour and membership of customers/distributors belonging to *AIE and HUN* for the following reasons:

(1) The problems and prospects of Network marketing in India have not been researched in depth to date.
(2) Earlier studies have not mentioned the key factors for increasing flexibility through NM.
(3) *Amway India and Hindustan Unilever* Network is currently facing dip in sales revenues and market share is coming down due to high customer churn.

In order to fill these gaps, this chapter focused on comprehending NM practices in Indian context covering the demographic and behavioural aspects of the distributors belonging to NM companies like *AIE* and *HUN*. From the above gaps in literature the research questions which evolved are:

RQ1: What are the 'Sources of Information' for customers to improve distribution flexibility?
RQ2: What is the 'Demographic profile' of customers associated with network marketing firms?
RQ3: What are the factors that motivate customers to buy/join network marketing companies?
RQ4: What are the factors influencing distribution flexibility in network marketing firms?

4.4 Distribution Flexibility In Network Marketing-Objectives and Design

Network marketing organizations [NMOs] like Amway, Mary Kay, Nu Skin, Shaklee etc., have been growing their importance over the last few decades. Today two per cent of direct sales reference is generated by network marketing organization and business units (Coughlan and Grayson 1998). It is observed that 'Attrition' percentage has been distressingly high among *Network Marketing* distributors especially in India (differs from company to company and time to time). Misuse or abuse of practices by a few fly-by-night operators, lack of distributor motivation, high pricing, etc., necessitated further in understanding the *network marketing* practices in true spirit as an alternative distributor mechanism focusing on its dimensions and the perception of existing *network marketing* distributors. Further researchers (Xueming and Homburg 2007) opined that customer satisfaction generates free word of mouth and thereby leads to a positive impact on a
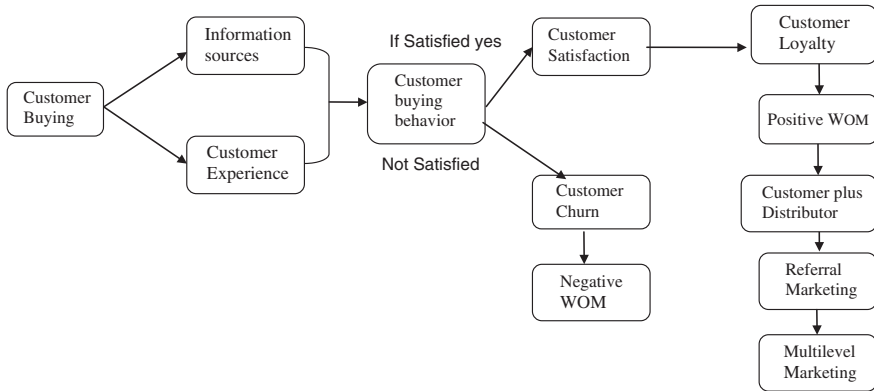
Fig. 4.1 Framework for multilevel marketing

company's excellence in human capital (employee talent and manager superiority). In order to review the distribution strategies in NM companies, we formuated the objectives of this study as following

1. To ascertain flexible distribution strategies in network marketing companies.
2. To compare the customer perceptions on distribution flexibility of *AIE* and *HUN*.
3. To formulate models for flexible distribution strategies in *AIE* and *HUN*.

In order to fulfil the above objectives and comprehend the concept of NM we developed a framework based on the review of past studies in NM (see Fig. 4.1). Dash et al. (1976) in their study, found that the level of pre-purchase information regarding the brand effects consumer buying behaviour. Schiffman (2001) opined that consumers purchase involvement is indicated by the extent of information search and their past experience. Shim and Kotsiopoulos (1992) identified four information sources: fashion advertising, fashion publications, media and personal sources and concluded that these factors to be insignificant on re-patronage loyalty behaviour. Zeithaml et al. (1996) further found evidence that loyal customers spread positive word of mouth and exhibit repeat purchase behaviour and are also willing to pay higher price. Sreekumar (2007) further extended that the network is built by the distributors themselves as the loyal customer whom they recruit or sign up becomes a wholesale customer who in turn can sponsor others as sub-distributors known as 'Down lines', which is also termed as 'Referral Marketing' and the subsequent layers thus formed is termed as 'Multilevel Marketing'. The introducer is known as 'Up Line' distributors. On contrary, research studies (Wotruba et al. 1991; Bloch 1996; Berry 1997) found that if the customer is dissatisfied they not only the spread of negative word of mouth, but also switch from one product supplier to another. They further found evidence that, the direct selling industry suffers very low rates of distributor retention. The low retention rate in the industry results in high costs associated with engaging new salespeople, and significant costs arising from broken relationships with customers.

4.5 Hypotheses Development

Thomas et al. (2005) found that there are significant differences in demographic variables between multilevel (ML) and single level (SL) forms of direct selling organizations, but none of these differences correspond to differences in quitting intentions. They are also found evidence that significant difference exist between ML and SL salespeople on the behavioural and attitudinal variables like job satisfaction, organizational commitment, perceived image of direct selling in the marketplace, the importance of the job characteristics of work rewards and career growth. Analysis revealed that the relationship between some of these variables and quitting intentions differed substantially betweenML and SL salespeople. Hence the hypotheses formulated are

$H_o1.0$: There is a significant relationship between demographic variables (Ho1.1 Age, Ho1.2 Sex, Ho1.3 Marital Status, Ho1.4 Education, Ho1.5 Occupation and Ho1.6 Monthly Income) of customers belonging to *HUN* and and *AIE*.
Ho2.0: There is no significant association between 'Consumer attributes' and their Satisfaction of *HUN* and *AIE*.

4.6 Research Methodology

The data was collected using a structured questionnaire and distributed to customers of *HUN* and *AIE* from Hyderabad and Secunderabad, Telangana State. Reliability of the questionnaire is measured by using Cronbach's alpha. For all the variables, in the research instrument, descriptive statistics are presented using mean, standard deviations and variances, etc. To test the hypotheses on relationships of model variable, Chi-square, ANOVA, multiple linear regression Analysis are used. These statistical tools are used with the help of Predictive Analytics Software (PASW) 21.0 Version.

4.6.1 Research Design

Greater Hyderabad, Telangana State consists of sixteen revenue mandal offices. The respondents were selected from fifteen revenue blocks only (as there is no proper response from the 16th Mandal). A structured questionnaire was distributed to 1032 *Amway India* and *Hindustan Unilever Network* distributors of various levels, out of which only 602 were returned and only 600 respondents were considered for the study as their responses are complete in nature. The response rate is 58 %. A time period of about nine months from May 2011 to January 2012 was spent to collect the data. Finally the responses are analyzed using 'descriptive' and 'inferential' statistics. IBM-PASW version 21 was used for data analysis. Cross sectional descriptive research design was used. The data were collected through a structured questionnaire and distributed to customers who belong to *HUN* and *AIE* from Hyderabad and Secunderabad, Telangana State.

4.6.2 Sampling Design

I Population The total regular *AIE* customers in Hyderabad and Secunderabad are 1750 and *HUN* are 1250 ($N = 3000$).

II Sample Size The total sample size is 600, which is 20 % of the population. The study was conducted on 300 *AIE* and 300 *HUN* customers.

III Determination of sample size For determination of the sample size, categorical sample size formula is being used. Set of alpha level a priori at 0.05 assumed by the

$$\frac{(1.65^2 \times 1.167^2)}{(4 \times 0.03)^2}$$

author/researcher. The acceptable error was set at 3 % and an estimated standard deviation of Likerts' 5 point scale. The following sample size formula of Cochran's for continuous data are used

$$n_o = \frac{(t^2 \times \sigma^2)}{d^2} \,|||\, n_o = \frac{(1.65^2 \times \sigma^2)}{d^2} \,||\, n_o = \frac{(1.65^2 \times x^2)}{(z \times 0.03)^2} = n \,||$$

$$n_o = \frac{(1.65^2 \times 1.167^2)}{(4 \times 0.03)^2} \,||\, n_o = \frac{(1.65^2 \times x^2)}{y^2} = 527$$

The sample for the present study is 600 > 527 hence it is a valid sample.

IV Sample Unit The regular customers of *AIE* and *HUN* belong to Greater Hyderabad and Secunderabad, Telangana State.

V Sample Frame As *AIE* and *HUN* are private companies the details of distributors and customers were not disclosed, but permitted the researcher to interact with active distributors and regular customers at product distribution point and business building seminar/meetings at different location.

VI Sampling Technique The sample had been drawn using *Snowball sampling technique* from 600 *AIE and HUN* customers through structured questionnaire in Hyderabad, Telangana State.

4.6.3 Data Collection Procedure

The data were collected through the field survey using structured questionnaires. The data were collected from 600 *AIE* and *HUN* customers randomly selected from point of sale (product delivery points) and at different ventures of business building seminars located at Khairatabad, Begumpet, Bharkatpura, etc., in Hyderabad and Secunderabad. The secondary data such as corporate CDs, literature and price list, etc., were collected from Head office, New Delhi and other regional offices Gurgoan, Chennai, Bangalore and Mumbai, etc., from various *AIE* and *HUN* officers.

Dependent Variable

The dependent variable is 'Distribution Flexibility'. Likert's five-point scale was used to measured why customers purchase, become loyal and promote products through 'positive' and 'referral' marketing of products in *HUN* and *AIE*.

Independent Variables

The three independent variables taken in the study are: Network Management Support, Acquaintances and Obedience.

Reliability and Validity Analysis

The reliability of the scale was measured using Cronbach's alpha. The list of item used in the questionnaire for independent and dependent variables and their reliabilities are summarized in Appendix 1.

4.7 Data Analysis and Findings

The major findings of the study are as follows: The mean age of overall 600 respondents was 33 years, for AIE Customers 34 and 32 years for HUN customers (see Table 4.1).

4.7.1 Sample Description

Nearly half of the respondents (46 %) belong to 18 to 30 years age group, 30 % of respondents belong to 31–40 and 24 % of respondents belong to above 41 years age group. Two-third of the sample (66 %) is woman and only one-third of them (34 %) were men. Half of the sampled respondents are Graduates (50 %), one-fourths (26 %) of consumers are Professional students and have just done schooling (24 %). Two-third of the sampled respondents (66 %) were married and one-thirds of them (34 %) are single. Housewives (41 %) occupy a major share, 25 % of consumers are Govt. Employees, 20 % of consumers are Business people, 6 % of consumers are Agriculturists, 6 % of consumers are Professionals and 3 % of consumers are from 'Other' category. More than one-thirds of the sample (37 %), earn Rs. 20,001 and above, 34 % of consumers earn less than Rs. 10,000 and 29 % of consumers earn between Rs. 10,001 and Rs. 20,000 (see Table 4.1).

4.7.2 Demographic Variables of Amway India and Hindustan Unilever Network Respondents

To test the significant relationship between demographic variables of *AIE* and *HUN* customers ANOVA was used.

$H_o1.0$: There is a significant relationship between demographic variables ($H_o1.1$ Age, $H_o1.2$ Sex, $H_o1.3$ Marital Status, $H_o1.4$ Education, $H_o1.5$ Occupation and $H_o1.6$ Monthly Income) of customers belongs to *AIE* and *HUN*.

Table 4.1 Sample characteristics

Variable	Description	*HUN* No. of respondents (%)	*AIE* No. of respondents (%)	$N = 600$ total	Mean	SD
Age* (Years)	18–30	158 (52.7)	118 (39.3)	276	33	
	31–40	110 (36.7)	71 (23.7)	181		
	41 Plus	32 (10.7)	111 (37.0)	143		
Sex	Men	63 (21)	139 (46)	202	NA	NA
	Women	237 (79)	161 (54)	398	NA	NA
Marital status	Married	181 (60)	214 (71)	395	NA	NA
	Unmarried	119 (40)	86 (29)	205	NA	NA
Education	School dropouts/SSC	69 (23)	75 (25)	144	NA	NA
	Graduation	133 (44)	168 (56)	301	NA	NA
	Postgraduates and above	98 (33)	57 (19)	155	NA	NA
Occupation	Housewives	79 (26)	164 (55)	243	NA	NA
	Employees	63 (21)	84 (28)	147	NA	NA
	Agriculturists	28 (9)	9 (3)	37	NA	NA
	Business	100 (33)	21 (7)	121	NA	NA
	Professional	30 (10)	6 (2)	36	NA	NA
	Others (Students)	0 (0)	16 (5)	16	NA	NA
Monthly income**	<Rs. 10,000	93 (31)	113 (38)	206	20,300	0.844
	10,001–20,000	94 (31)	79 (26)	173		
	>20,001	113 (38)	108 (36)	221		
		300 (100)	300 (100)	600		

NA Not Applicable

* Minimum Age 18 years as eligible for contractual obligation to sign as distributorship for Amway India and Hindustan Unilever Network as well

** Monthly Income from salary and other soures like Rent, Interest Capital gains etc not commissions earned from the business of Amway or HUN

The ANOVA test results shows that the variables age does not differ significantly with, $F(28, 571) = 0.757$, $p = 0.814$ and all the other variables differ significantly like Gender with $F(28, 571) = 1.539$, $p = 0.039$; Marital Status with $F(28, 571) = 1.762$, $p = 0.010$; Occupation with $F(28, 571) = 1.339$, $p = 0.116$; Education with $F(28, 571) = 2.167$, $p = 0.001$; Monthly income with $F(28, 571) = 1.586$, $p = 0.030$ among *AIE* and *HUN* distributors from Table 4.2.

Findings Majority of the *HUN* respondents are business people, whereas house wives are majority in *AIE*. Majority of the *HUN* respondents earn above Rs. 20,000 whereas majority of *AIE* consumers earn less than Rs. 20,000.

Table 4.2 ANOVA for demographics of *AIE* and *HUN*

Demographic variables		Sum of squares	DF	Mean square	*F*	Sig.
Age	Between groups	1333.299	28	47.618	0.757	0.814
	Within groups	35928.994	571	62.923		
	Total	37262.293	599			
Sex	Between groups	9.404	28	0.336	1.539	0.039
	Within groups	124.589	571	0.218		
	Total	133.993	599			
Marital status	Between groups	10.733	28	0.383	1.762	0.010
	Within groups	124.226	571	0.218		
	Total	134.958	599			
Occupation	Between groups	78.389	28	2.800	1.339	0.116
	Within groups	1193.505	571	2.090		
	Total	1271.893	599			
Education	Between groups	28.701	28	1.025	2.167	0.001
	Within groups	270.097	571	0.473		
	Total	298.798	599			
Monthly income	Between groups	30.785	28	1.099	1.586	0.030
	Within groups	395.840	571	0.693		
	Total	426.625	599			

Source Primary Data

4.7.3 Consumer Attributes and Satisfaction

To test the significant association between consumer attributes of *AIE* and *HUN,* ANOVO was used. Consumer attributes like quality, advertisements, utility, bio-degradable, advantages, concentrated, beliefs and reputation, status symbol and prices are high in *AIE* whereas personal volume, business volume, satisfaction, highly concentrated and beliefs and reputation are high in *HUN*. Service remains to be the same across two firms from Table 4.3.

Ho2.0: There is no significant association between 'Consumer attributes' and their satisfaction of *AIE and HUN*.

4.7.4 Distribution Flexibility Strategies of AIE and HUN

Multiple regression models were developed for 'Distribution Flexibility' of *AIE* and *HUN*. The R square value explains 0.509, 50 % of the variation in 'Distribution flexibility' of *HUN* is explained by network management support, Acquaintances and Obedience. The R value of 0.509 is close to 1 Distributor of *HUN* has a high positive relationship with Network Management Support, Acquaintances and Obedience (see Table 4.4).

The regression equation line for the above data is,

Table 4.3 ANOVA for 'consumer attributes' and satisfaction of *AIE* and *HUN*

Description		Sample size	Average	SD	SE	95 % Confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Quality	AIE	300	4.20	0.855	0.049	4.11	4.30	1	5
	HUN	300	3.80	0.921	0.053	3.70	3.91	1	5
	Total	600	4.00	0.910	0.037	3.93	4.08	1	5
Advertisement	AIE	300	3.69	0.885	0.051	3.59	3.79	1	5
	HUN	300	3.49	1.08	0.063	3.37	3.62	1	5
	Total	600	3.59	0.993	0.041	3.51	3.67	1	5
Service	AIE	300	3.56	0.932	0.054	3.45	3.67	1	5
	HUN	300	3.56	0.932	0.054	3.45	3.67	1	5
	Total	600	3.56	0.932	0.038	3.49	3.63	1	5
Utility value	AIE	300	3.44	0.921	0.053	3.33	3.54	1	5
	HUN	300	3.08	1.08	0.062	2.96	3.21	1	5
	Total	600	3.26	1.01	0.042	3.18	3.34	1	5
Biodegradable	AIE	300	3.77	1.04	0.060	3.65	3.89	1	5
	HUN	300	3.57	1.17	0.068	3.44	3.70	1	5
	Total	600	3.67	1.11	0.046	3.58	3.76	1	5
Advantages	AIE	300	3.93	0.911	0.053	3.82	4.03	1	5
	HUN	300	3.51	1.03	0.060	3.39	3.62	1	5
	Total	600	3.72	0.997	0.041	3.64	3.80	1	5
Highly concentrated	AIE	300	3.52	0.931	0.054	3.41	3.62	1	5
	HUN	300	3.54	1.04	0.060	3.42	3.66	1	5
	Total	600	3.53	0.989	0.040	3.45	3.61	1	5
Beliefs and reputation	AIE	300	3.59	1.03	0.060	3.48	3.71	1	5
	HUN	300	3.62	1.04	0.060	3.50	3.74	1	5
	Total	600	3.61	1.03	0.042	3.53	3.69	1	5

(continued)

Table 4.3 (continued)

Description		Sample size	Average	SD	SE	95 % Confidence interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Status symbol	AIE	300	3.96	1.04	0.060	3.84	4.08	1	5
	HUN	300	3.81	1.01	0.059	3.69	3.92	1	5
	Total	600	3.89	1.03	0.042	3.80	3.97	1	5
Prices	AIE	300	3.54	1.05	0.061	3.42	3.66	1	5
	HUN	300	3.44	0.932	0.054	3.33	3.55	1	5
	Total	600	3.49	0.996	0.041	3.41	3.57	1	5
*Personal and business volume	AIE	300	3.45	0.965	0.056	3.34	3.56	1	5
	HUN	300	3.91	0.972	0.056	3.80	4.02	1	5
	Total	600	3.68	0.995	0.041	3.60	3.76	1	5
Timely availability	AIE	300	3.50	1.07	0.062	3.37	3.62	1	5
	HUN	300	3.41	1.08	0.062	3.29	3.54	1	5
	Total	600	3.46	1.07	0.044	3.37	3.54	1	5
Satisfaction	AIE	300	2.18	0.805	0.046	2.09	2.27	1	3
	HUN	300	1.95	0.741	0.043	1.87	2.03	1	3
	Total	600	2.06	0.781	0.032	2.00	2.13	1	3

* Minimum Age 18 years as eligible for contractual obligation to sign as distributorship for Amway India and Hindustan Unilever Network as well

Table 4.4 Model summary of distribution flexibility for HUN[b]

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	0.717[a]	0.514	0.509	0.328

[a] Mathematical measure of the average relationship between two or more variables in terms of original unit of data e.g. Constant, Obedience, Network Management Support and Acquaintance
[b] Hindustan Unilever Network is company

Table 4.5 Distribution flexibility model for HUN

Model 1				Explanatory variables		
Predictors			Constant	X_1 Support	X_2 Acquaintance	X_3 Obedience
Hindustan unilever	Coefficient		−0.632	0.998	0.0019	0.0169
	Standard error	0.332	0.224	0.161	0.041
	p-value	0.059	0.000	0.996	0.139

Adj R Square 0.509, F-Statistic 104.367, p-value 0.000[a]

Table 4.6 Model summary of distribution flexibility for Amway[b]

Model	R	R square	Adjusted R square	Std. Error of the estimate
1	0.810[a]	0.657	0.653	0.293

[a] Mathematical measure of the average relationship between two or more variables in terms of original unit of data e.g. Constant, Obedience, Network Management Support and Acquaintance
[b] Amway

Distribution Flexibility of $HUN = -0.632 + 0.998$ (Network Management Support) $+ 0.0019$ (Acquaintances) $+ 0.0169$ (Obedience)

The above equation is the calculated as contribution for the tested elements to achieve Distribution Flexibility of HUN effectively. From the regression equation line one can notice that network management support, Acquaintances and Obedience all the factors have a positive impact on distribution flexibility for *Hindustan Unilever Network*.

Results Adjusted R Square 0.509, F-Statistic 104.367, p-value 0.000[a] which means the hypothesis is not true. Further detailed analysis shows that there is a positive variation as given below. 'NM Support', 'Acquaintances' and 'Obedience' all are supporting with positive direction with 0.998, 0.0019 and 0.0169 respectively with negative constant, i.e. −0.632 for HUN from Table 4.5.

The regression model for distribution flexibility of AIE indicates R value of 0.653 is close to 1, indicates a high positive relationship with network management support, Acquaintances and Obedience. The R square value explains 0.653, 65 % of the variation in distribution flexibility for AIE Enterprises is explained by Network Management Support, Acquaintances and Obedience from Table 4.6.

The regression equation line for the above data is

Distribution Flexibility for $AIE = -1.282 + 0.326$(Network Management Support) $+ 1.184$(Acquaintances) $+ 0.029$(Obedience).

From the regression equation line one can notice that network management support, acquaintances and obedience all the factors have a positive impact on distribution flexibility for *Amway India Enterprises*.

Table 4.7   Distribution flexibility model for Amway India

Model 2			Explanatory variables		
Dependent variable	Constant		X_1 NM support	X_2 acquaintances	X_3 obedience
Amway India	Coefficient	−1.282	0.326	1.184	0.029
	Standard error	0.135	0.124	0.169	0.027
	p-value	0.000[a]	0.009[a]	0.000[a]	0.283[a]

Adj R Square 0.653, *F*-Statistic 188.65, *p*-value 0.000[a]

Results For 'Distribution Flexibility' of *AIE,* the most influencing elements are 'Support', 'acquaintances' and 'Obedience' all these factors are supporting with positive direction with 0.326, 1.184 and 0.029, respectively, with negative constant, i.e. −1.282 from Table 4.7.

Findings In case of Amway the 'distribution flexibility' is contributed more by acquaintances followed by network management Support. The contribution of obedience is negligible. In case of HUN 'Distribution Flexibility' is contributed more by network management support followed by acquaintances. The contribution of obedience is negligible.

4.7.5   Sources of Information

Henry Garret Rank Scores have been calculated for eight possible 'sources for information' using: Percentage Position $= \frac{100\,(Rij - 0.5)}{Nj}$, Where $R_{ij} =$ Rank given for *i*th factor by *j*th individual, $N_j =$ Number of factors ranked by *j*th individual.

'Word of mouth' through friends and relatives are the major sources of information to customers and independent sales consultants and public events were found to be least preferred sources of information. The results of 'Sources of Information' for *AIE* and *HUN* are shown in Fig. 4.2.

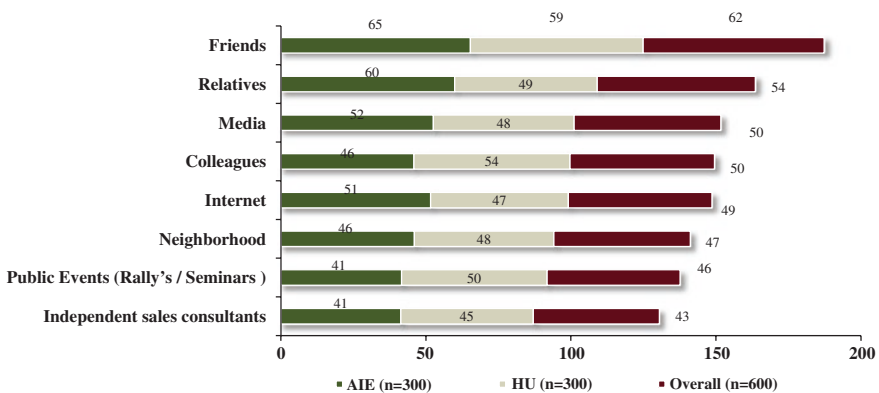**Findings** distributor support is low in *A*IE when compared to *H*UN.
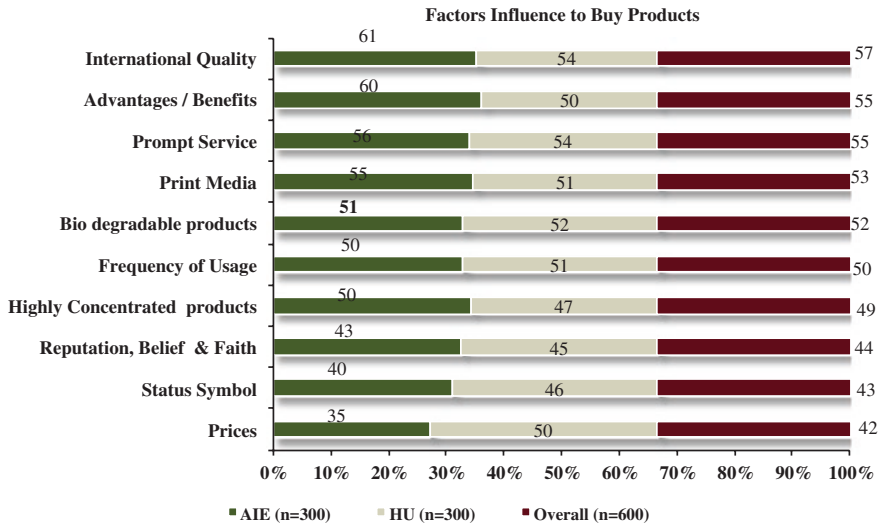

Fig. 4.2   Sources of information

Fig. 4.3 Factors influencing customer buying behaviour

4.7.6 *Factors Influencing Purchase Behaviour of consumers from network marketing*

Henry Garret Rank Scores have been calculated for ten possible 'Factors influencing customer buying behavior' and found that 'International Quality', 'Benefits' and 'Service' are the key factors in customer buying behaviour from *AIE* and *HUN* (see Fig. 4.3).

Findings 'International quality' is comparatively high in *AIE* than *HUN* 'Prices' are perceived to be higher in *HUN* than *AIE* by customers.

4.8 Limitations and Managerial Implications

The study is limited to 16 mandals of Greater Hyderabad, Telangana State. Only specific products categories and attributes which are similar in both companies are taken for this study. The study is limited only to two specific companies, i.e. *HUN* and *AIE*, hence cannot be generalized.

It is suggested that the results of this study may help marketers, i.e. companies/distributors/customers respond to the ever changing needs of end users in an Indian Network marketing scenario. This study helps the retailers and mangers in redesigning customer retention through distribution flexibility strategies and taking appropriate measures to attend all classes of task definitions like purchase loyalty, purchase frequency and tenure by increasing the marketing efficiency. This

study has shown how definitions and risk factors affect method of selling selection processes and underline the need to put concerted efforts to understand risk sensitive customer and distributor clusters and risk relieving strategies.

4.9 Conclusion

With the heightened level of competition in Indian network marketing scenario, an increasing number of network marketing entities are currently facing difficulties in operating profitability, as it is evident from the high churn rate. So, it is proposed that the findings from this study may enable producers to alter their responsibilities and redesign their flexible distribution strategies and marketing communication to retain the existing customers and also to attract prospective distributors. 'Friends and relatives' are identified to be as important sources of information through powerful 'word of mouth' which has found to be more credible than other commercial sources in re-patronage behaviour. Customer re-patronage behaviour is found to be high if the marketer offers an exemplary product mix at competitive prices, quality, flexible distribution service and point of sales, physical facilities to offer a better atmosphere across all segments of customers and distributors. *HUN* should match *AIE* in terms of product range. Thus, findings of this study addressed critical issues of distributor behaviour by developing an integrative theory supporting the sequential structure of the constructs in Network marketing. Given the absence of published academic literature relating to network marketing this study will add value to the existing 'body of knowledge' on this subject.

As budgetary expenses on independent sales consultants and public events are yielding low returns, it is advocated that it is better to spend less and invest in giving more incentives to customers and network marketers as they improve distribution flexibility and play an vital role in spread of positive WOM through 'friends and relatives'. 'International quality', 'advantage and benefits' are dominant factors in consumer purchase decision. *HUN* should be on par with *AIE* in terms of quality. Though the study has indicated prices as least significant, others feel that product prices are exorbitant in price sensitive market especially in *AIE* than *HUN*. So, *AIE* must emphasize more on redesigning distribution strategies to suit the price sensitive Indian market. Overall it can be concluded that the factors 'Network Management Support' and 'Acquaintances' are more important for increasing 'Distribution Flexibility' than 'Obedience' in 'Network Marketing' companies. Therefore, attempt should be made to use social Network Media such as Facebook, Twitter, etc., between the customers and customer contacts with the company. Frequent customer meet should be arranged by the companies to facilitate 'Network Management Support' to the distributors.

Therefore this study emphasizes the importance of 'Method of Selling', driven by determinant 'Network Marketing Organization' which is decisive in determining repeat purchase and recruitment of new members. It is more pertinent to

mention exemplary product mix, quality distributor service and facilities at product delivery points and facilities to offer a better atmosphere and environment that enhance customer plus distributor satisfaction.

Appendix 1

List of Dependent, Independent Variables and Their Reliabilities

Support ($\alpha = 0.826$)

I guide my down line in product-selling activities.
I orient my down line into our practices and procedures.
I recruit new members into the sales organization.
I keep in touch with my down line.

Obedience ($\alpha = 0.853$)

I use my NMO products regularly participate in training and meetings organized by my NMO or my up line.
I keep in touch with the personnel in the my NMO office.
In my activities, I follow the model given by my sponsor (or up line) with extreme care.
I follow the distributor contact with extreme care.

Acquaintances ($\alpha = 0.871$)

I aim at contributing to issues concerning direct selling and network outside the NW organization.
I keep in touch with distributors in other direct selling and NM organizations.
I aim at contributing to the development of direct selling and networking activity, e.g. through associations.
I make recommendations to NMO concerning issues that affect the distributor network.

Distribution Flexibility ($\alpha = 0.71$)

I refer NW products to acquaintances to expand distribution.
I recommend NW products to other people besides acquaintances.
I keep in touch with my distributors regularly.
I recommend NW membership to acquaintances to improve flexibility in distribution.

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Chapter 5
Flexibility in Social Sustainability: Evidence from Indian Manufacturing Industries

V. Mani, Rajat Agrawal and Vinay Sharma

Abstract Sustainability has been the buzzword in the business environment for quite some time, because of the increasing awareness of the environmental and social aspects where the business strategies and practices may be unsustainable. Sustainability encompasses three dimensions—economic, environmental and social—though the social dimension has largely remained ignored till date. However, due to the emergence of social issues increasingly flagged by social organizations in the developing countries, the social dimension too has started gaining momentum in the recent past. The aim of this chapter is to study the socially sustainable business practices of two Indian manufacturing companies in two different sectors: one, a cement company, and the other, a pharmaceutical firm. The authors have explored the flexibility nature of the practices in these two companies. Particular attention has been paid to the drivers of such practices and the lessons that can be learned from them. The research uses a comparative case study method, whereby, the authors first identify various social sustainability dimensions through the literature review, and then compare the business practices of the two companies for social sustainability. A comparison of the socially sustainable business practices of the two companies opens up the avenues to examine the similarities and divergences in their paths to social sustainability. The findings of the research reveal that certain similarities and differences (flexibilities) do exist in the social practices of the cement and pharmaceutical companies examined for this study and help them to reach sustainability in different ways in the particular context of their sectors. The findings will be useful for the supply chain managers

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and sustainability operations managers who wish to understand the diverse patterns of social sustainability, as also how social sustainability can behave as a leading instrument for decision making.

Keywords Comparative case study · Flexibility in social practices · Social dimensions · Social sustainability · Social sustainability in supply chain · Sustainability practices

5.1 Introduction

With increasing awareness of the sustainability issues, organizations have felt compelled to incorporate sustainable practices in their supply chain, in addition to thetraditional parameters such as price, quality and reliability, helping them to be more competitive in their respective markets (Bai and Sarkis 2010). The term sustainability refers to the management of the economic, environmental and social issues by an organization for its stakeholders and others (Elkington 1997). This is a comparatively less-expensive and yet powerful means of conveying to them, and the general public, what sustainability means to the organization and how much the organization cares for it. However, as argued by several scholars, social sustainability in the supply chain remains the least explored dimension of sustainability.

Nevertheless, in the backdrop of increasing awareness of the social issues—connected not just with the immediate corporate environment but also with other stakeholders who have any kind of economic and trade relations with the organization—the trend to incorporate social sustainability has started gaining momentum, as the extended stakeholders' unethical actions and patterns have an impact on the organization's image and clientele. Most such incidents are a function of the upstream supply chain, involving the suppliers and their installations. Therefore, business organizations need to be prudent enough to get their supplier base audited to avoid such negative publicity which not only affects the business, but also degrades the reputation of the organization. Some multinational companies, for example ZARA and Apple, have set about monitoring their supplier base in the developing economies through supplier development training and supplier audit practices that check for child labour, health and safety conditions, living environments and ethical criteria. Apple has even gone ahead with an 18 months' supplier training programme, emphasizing health and safety standards for the employees in the supplier locations (Apple Progress Report 2014). Because of globalization, firms' boundaries nowadays tend to be fluid, as companies are moving towards more vertical integration which is mostly offshore in nature. Therefore, it is significant for them to realize the societal issues that encompass the suppliers, in-house operations workers, downstream distributors, clients and end users.

Social issues develop over a long period of time, based on the societal norms and expectations. Hence, they are location specific and highly contextual

(Gugler and Shi 2009). Therefore, in this changing business environment, it is imperative for the corporates to understand the need for flexibility in their practices while addressing various stakeholders' expectations, so that the employees, suppliers and vendors may also be able to reciprocate them (Sushil 2014). The purpose of this research is twofold: to explore the literature on social sustainability and various social dimensions used in the supply chain of manufacturing industries located at different geographical locations; and to examine the socially sustainable practices of two manufacturing companies in two different sectors located in India. Hence, the research aims to answer the following questions:

- What are the social dimensions used in the supply chain of manufacturing industries?
- What are the social sustainability practices adopted by the two companies chosen from the two different manufacturing domains?
- How do these practices differ and how far are they flexible? Does this flexibility lead to better sustainability?

5.2 Review of Literature

In this section, we group the available literature based on the evolution of social sustainability, socially sustainable practices in the supply chain and different social sustainability dimensions practiced in various countries.

5.2.1 Social Sustainability and Supply Chain

Sustainability has been defined as meeting 'the needs of current generations without compromising the ability of future generations to meet their own needs' (WCED 1987, p. 45). Until the 1990s, the term sustainability was predominately used for the economic and environmental aspects. Later, the United Nations Conference on Sustainable Development (UNCSD 1998), in its Agenda-21, emphasized social sustainability. To be more precise, social sustainability in operations and supply chain management can be narrowed down to those aspects of the products and processes that determine human safety, welfare and wellness. The way these human and social issues are managed in the supply chain ultimately affects the sustainability of a firm and its reputation.

For instance, in a recent incident in China, McDonald's largest meat supplier was on fire for supplying 'expired meat' leading to the suspension of its burger products in Shanghai, China and the US. On the other hand, in an instance of unethical practices being followed by the US hospitals, the patients were being unnecessarily billed for inessential medical procedures. This not only led the US government to impose large fines on these hospitals but also to issue a code of

conduct, named HEAT, to audit the hospitals for unethical practices. There have been several other instances that have forced the corporates to recognize the importance of social sustainability in their business practices. Thus, between December 2005 and November 2006, most of the shrimps sold at Wal-Mart stores were procured from the Thailand-based supplier Matsushita whose workers, in its manufacturing environments, were not only being paid low wages and treated like bonded labourers, but also lacked the basic living conditions such as health and hygiene, sanitation, safety and potable drinking water. This was highlighted and questioned by several NGOs and human rights activists (CBS News 2014). In another such instance, the living conditions of the workers of Tata's plantations in India were questioned by the United Nations (World Bank 2014). All these instances of unethical and unsafe practices have tarnished the image of the companies and can no longer be ignored (Roth et al. 2008).

To probe deeper into the social issues in supply chain, one needs to answer three questions: Whom are we supposed to target? What are the issues that need to be addressed? How are these issues being addressed? (Wood 1991). According to the Stakeholder theory, the people spanning across three storeys of the establishment are supposed to be managed (Freeman 1984, 2004; Frooman 1999; Walsh 2005; Heath 2006; Campbell 2007; Stieb 2009). The first storey consists of the internal operations of the firm, in which human safety, diversity, health and such other issues are addressed. The second storey encompasses the inter-firm level where strong economic ties exist such as the suppliers, distributors and consumers. Finally, the third storey comprises the external stakeholders, including the community, NGOs and regulators.

In terms of the issues to be addressed, the initial research has explored the supplier labour practices, social homogeneity, equitable income and access to goods and services (Emmelhainz and Adams 1999; Sachs 1999). Many authors have explained how the social sustainability issues in the supply chain can be addressed. One such view advocates "socially responsible organizational buying" in the supply chain. According to Drumwright (1996), socially responsible organizational buying takes place because of a skilful policy entrepreneur and the organizational setting in which the company operates (Maignan et al. 2002; Carter et al. 1999). Krause (1999) argues that social sustainability can be addressed through socially sustainable supplier development. He further explains how socially responsible suppliers can be acquired. On the other side, some writers suggest that fair trade practices in the supply chain lead to sustainability (Strong 1997a, b). Many authors have identified various other means of addressing social sustainability such as through purchasing social responsibility (PSR) and logistical social responsibility (LSR) (Carter and Jennings 2000; Carter and Easton 2011). There have been many other studies focusing on how social sustainability can be effectively implemented in corporate roles. Notably, Clarkson (1995), Strong (1997a, b), McWilliams and Siegel (2001), Ehrgott et al. (2011) have proposed various parameters, including customer requirements, stakeholder requirements, employee requirements, skilful policy entrepreneurs and the influence of the economic status of the company on sustainability adoption. Further, the importance of ethical

supplier development and its impact on the overall corporate social responsibility has been demonstrated (Lu et al. 2012). Ehrgott et al. (2011) explain how socially sustainable supplier selection can be incorporated into the emerging economies. All these scholars and researchers have emphasized various means for addressing social sustainability in business practices in the supply chain. In the succeeding segment, we would attempt to find out some of the best socially sustainable practices adopted by some global supply chains and their relationship with the business.

5.2.2 Socially Sustainable Practices and Problem Definition

Social sustainability of the business practices of a firm can be found out by looking at how it interacts with people spanning across all three stages of the supply chain, in terms of addressing their safety, health, hygiene, wages, labour rights, etc. leading to the firm's sustainability (Mani et al. 2014a, b). Many developed countries enforce socially sustainable practices through law. However, in developing economies, such enforcement has so far not gained momentum (Mani et al. 2015a, b). However, companies are increasingly deemed responsible for the suppliers' actions related to social and environmental practices (Lu et al. 2012). Therefore, organizations need to be prudent enough to embrace the responsibility and address the issues through voluntary action. It would be an interesting exercise to examine these actions, as they vary from company to company.

Many researchers have delved into these subjects at length and brought out some interesting facts on sustainability. For examples, Koplin et al. (2007) have discussed how socially sustainable practices can be integrated with the manufacturing supply chain, through the case study research. Further, Ciliberti et al. (2008) have grouped all socially sustainable practices in selected Italian companies, using logistics social responsibility (LSR) taxonomy. Some of the global supply chains such as IKEA and BAe, have incorporated socially sustainable practices into both internal and external environments, including the suppliers (Andersen and Skjoett-Larsen 2009; Gopalakrishnan et al. 2012). Similarly, Apple is committed to socially sustainable practices across its supply chain. As part of its commitment, Apple regularly carries out supplier audits (Apple's Suppliers Responsibility Progress Report 2013).

However, these practices vary from country to country because of the different social parameters involved. The social parameters evolve in a society over a period of time, based on geographical location, culture and values. Not surprisingly, research on social sustainability in developing countries like India is still scant, even though there is an urgent need to ensure social sustainability in these countries as they are considered to be attractive destinations for global supply chains due to their cost advantage. Nonetheless, sufficient research has been carried out in other locations and can serve as the starting point for this research. For example, a research on two Spanish companies from two different industries has

revealed several similarities as well as differences in their socially sustainable practices because of their different approaches to sustainability (Cambra-Fierro and Ruiz-Benítez 2011). In this research, we intend to explore the best practices of two different manufacturing companies belonging to two different industries and find out whether there are any differences in their practices, as also how these practices lead to social sustainability.

5.3 Methodology

As the research was exploratory in nature, the qualitative approach was deemed to be the most appropriate (Eisenhardt 1989). The research process comprised two main phases. In the first phase, all the social dimensions used by various researchers under different domains in different countries were identified and analyzed. This analysis also included the identification of the main social sustainability dimensions used until now, in the supply chain function. The method adopted in this phase was primarily a review of the literature on the subject, i.e. secondary sources. Subsequently, two Indian companies were selected from two different manufacturing industries, i.e. cement and pharmaceuticals, because of their importance in the Indian economy. The comparative case study method was applied to identify different socially sustainable practices adopted by these two companies.

According to a report by Indian Brand Equity Foundation (IBEF 2013), the entire Indian manufacturing sector has been split into four different groups as per the usage, and these include basic goods, capital goods, intermediate goods and consumer commodities. Thus, both the companies differed fundamentally in their domains, and yet converged on one point, i.e. the use of chemicals in their production process. Hence, it was an interesting exercise to explore the similarities and differences in their sustainability practices.

The research uses the sustainability reports of the two companies made available on their websites, followed by key informant interviews to get a deeper insight into the aspects not adequately dealt with in the reports. The companies have been analyzed on the basis of some key parameters given in the next section. These are the parameters adopted by earlier researchers and found helpful in analyzing the sustainability of different industries through the case study method (Cambra-Fierro and Ruiz-Benítez 2011; Fayet and Vermeulen 2012). Moreover, the outcome of the key informant interviews was corroborated with the sustainability reports and other reports published by the two companies to ensure the reliability of information.

5.3.1 Key Parameters Considered for Analysis

- General information about the company and the company's inception and existence
- The supply chain structure, including the locations of the collaborators, distributors and customers, and the society in which it functions
- The company's understanding of social sustainability
- The company's global value system and strategy for sustainability.
- The way the company adopts various social practices and their influence on the business and network performance (Table 5.1)

5.4 Analysis and Discussion

Social sustainability in the supply chain is all about how a company addresses the social issues in the upstream and downstream supply chains, i.e. how a company addresses the social issues in its own plant and precincts and how it addresses the immediate stakeholders including the society, people and consumers. Finally, it is about the way the social issues are dealt with in the supplier positions. This gives a clear view of how social sustainability can be approached (Wood 1991; Freeman 1984, 2004). We explore the socially sustainable practices adopted by the two Indian manufacturing companies mentioned in the preceding section. We also attempt to ascertain the flexibility in these practices from industry to industry and examine how this flexibility helps attain better social sustainability.

Table 5.1 Details related to the value chain of both the companies

S. No.	Parameters	Cement company	Pharmaceuticals company
1	Inception	1980	1984
2	Presence	Over 35 years	Over 35 years
3	Supplier locations	Middle East and India	All over the world
4	Plant location	12 in India, 2 in UAE, 1 each in Bahrain and Bangladesh	India, Brazil, Mexico, South Africa, China, Venezuela, Srilanka, Myanmar
5	Distributors and customers	India, middle east	India, US, UK, Mexico, South Africa, China, Venezuela, Srilanka, Myanmar
6	Employees	12,247 employees	15,000 employees across Brazil, Mexico, South Africa, China, Venezuela, Srilanka, Myanmar, Vietnam
7	Financials: turn over	3.79 billion (USD)	2 billion (USD)

Source Compiled from social sustainability reports published online from respective companies

5.4.1 Socially Sustainable Practices in Cement Industry

5.4.1.1 Cement Industry: Background

Cement industry plays a significant role in building a country's infrastructure. The cement industry in India is the second largest in the globe. It is expected to grow positively in the coming years, with the demand set to increase at an annual compound growth rate of over 8 % during 2013–2016. High infrastructure investments and housing growth over the past many years have been the drivers of the growth of this industry. According to the data released by the Department of Industrial Policy and Promotion (DIPP), cement and gypsum products attracted foreign direct investment (FDI) of US 2.24 billion dollars in 2014. Moreover, according to a Confederation of Indian Industry (CII) report titled Cement Vision 2025: Scaling New Heights, India needs to double its cement manufacturing capacity by 2025. As highlighted by the report, an additional capacity of 330–380 MT could be needed by 2025. This translates into an investment of about 50 billion US dollars. Hence, it is really essential for the cement manufacturers to find innovative ways to carve out a quick share in this development and continue to be sustainable in the long run.

5.4.1.2 Company Know How

The chosen company is one of the top three players in the Indian cement market. With the revenues crossing over 3.79 billion US dollars and an installed capacity of 53 metric tons per year, it employs 12,247 workers. It is a subsidiary of a 40 billion US dollar corporation anchored by an extraordinarily large workforce of 133,000 employees belonging to 33 nationalities. The group's operations are based in India, Bangladesh, the United Arab Emirates, Sri Lanka and Bahrain. Naturally, its product value chain is also spread across several continents. The company's shareholding pattern is 63 % by the promoters and the remaining by various other investors including the FIIs, corporate houses, banks and the public.

5.4.1.3 Sustainable Practices

Sustainability is built into the core value system and strategy of the company as reflected in the words of its Chairman:

> […] our efforts to solidly consolidate our pole position in the cement business continue unabated, synergizing growth with responsibility […].

According to one of the directors of the company, "social and environmental practices, far from mere compliance, have been an integral part of the group's philosophy since its inception. The company has been investing continuously in them. These investments are an issue of a natural sense of responsibility towards the well-being of the company. The central focus areas are conserving natural

resources, energy, water, emission reduction, safety and social responsibility—all of which are vital to secure a sustainable cement business. Sustainability can be seen penetrating down in the organizational structure".

Further:

> […] the march of technology and industry must be matched with a social and spiritual evolution. At the company, our unswerving focus on incorporating our values and applying the concept of trusteeship in our business decisions will deliver growth that is beneficial to all […].

The company is a member of Cement Sustainability Initiative (CSI) of the World Business Council for Sustainable Development (WBCSD), a worldwide organization for sustainable growth. This affiliation assists the company to realize the environmental and societal impact of its manufacturing operations. Through this association, the company has initiated many actions towards building a sustainable tomorrow. The company measures the key performance indicators of sustainability such as CO_2 emissions per ton of the fuel and raw material used, as well as health and safety measures. The total health and safety parameters are measured on the basis of the number of fatalities (directly employed), number of fatalities (indirectly employed), number of fatalities (third parties) and lost time injuries (LTI) per million man hours. All these parameters in the company show a significant decrease over a period of time. For example, in 2013, the LTI stood at 0.79 which is considerably lower than 3 years before, when it was 0.95. It being cement industry, most of the sustainability initiatives are built around the environmental aspects. These issues are NO_2, SO_2 and dust emissions, and their impact on the environment per tonnage. As part of responsible social development, 92 % of the company sites with quarries have a rehabilitation policy as well as community engagement plans in place, and biodiversity issues are addressed at 12 sites. A sustainability management system such as ISO 14001 or OHSAS 18001, has been implemented in 12 plants. The company has earned many accolades in the environmental and social sustainability measures. The awards for the social measures include the Golden Category Award for Outstanding Achievement in Health and Safety, Greentech Global Safety award, Unnatha Suraksha Puraskara from the Govt of Karnataka, India, Asian CSR Award and ASSOCHAM CSR Excellence Award for commendable social performance. The company is in conformity with the G3.1 Global Reporting Initiative (GRI) A + category norms. The company believes that the stakeholder involvement through various actions would contribute to the long-term sustainability of the firm. As its Chief Financial Officer (CFO) says:

> […] stakeholder engagement is a critical aspect of sustainability. Being able to assimilate various perspectives can help develop more inclusive, effective business strategy. At the company, constructive dialogue helps achieve harmony between development and accountability […].

The company is working towards achieving the ambition of a sustainable future by collaborating with the stakeholders to formulate a relationship based on shared values. This creates a favourable atmosphere in the direction of transparency,

collaboration, facility inspection, business review meetings, timely payments to suppliers, etc. According to one of the company's suppliers:

> […] the transparency and integrity that the company displays in dealing with us is exemplary. It is their values that carry them forward and we hope that we continue to supply them as we consider them to be ideal customers […].

The customers are also engaged in product information sharing, product campaigns, satisfaction surveys and grievance redressal mechanisms for product pricing, product safety, product quality and product information accessibility. At the company, safety mechanisms form the core focus area and are given the utmost importance. The company invests in enhanced working conditions of the employees while proactively engaging in natural actions, in order to allay any problems or situations that they may face at work. The Chief Manufacturing Officer of the company says:

> […] Safety is an integral, non-negotiable cog of our value system. We build safety in our work environment by balancing policy issuance, creating awareness, and incentivising and rewarding safe behaviour. Only a safe today can ensure a sustainable tomorrow […].

In all the plants, child and bonded labour is prohibited, and a 360 degree security arrangement with high vigil is in place to check the entry of a child or bonded labourer in the company premises. The employees' well being is of crucial importance to the company, which has put in place a telemedicinal facilities programme to assist the employees to get admitted to the specialist and super specialist hospitals in the townships. The women employees are given paid maternity leave. Says an employee union member:

> […] the advantage of working here is that everyone from the supervisor to the senior management is very safety and health conscious. We are made aware of the ISO certifications and regulations to keep our environment pollution free. The management is likewise receptive to discussing problems rather than pressuring them on us […].

The company is at its vanguard, developing facilities for the society's well being such as schools, healthcare, sanitation, rural roads and vocational training for the unemployed youth of Tamil Nadu, India, for a better, sustainable tomorrow.

Thus, the company, through its various activities, addresses the safety and health concerns of the employees and the society, ensures the prohibition of child and bonded labour, as well as carries out local supplier development, employee education and training, for the safety of the consumer.

5.4.2 Pharmaceutical Industry

5.4.2.1 Background

India is one of the top five emerging pharmaceuticals markets, estimated to grow at a compound annual rate (CAGR) of 13 % during 2013–16. It is poised to rise to 55 billion US dollars by 2020. Increased income, ageing population, easy

access to health care facilities and greater consciousness of personal wellness and hygiene are the factors expected to drive the growth of the pharmaceuticals industry in India. FDI up to 100 % is permitted in the pharmaceutical industry under the automatic route, for Greenfield investments. The Government of India has taken many initiatives to encourage the pharmaceutical companies for the domestic market as well as exports, as the majority of the population of India lives in the rural areas and requires affordable health care through generic route.

5.4.2.2 The Company Know How

The chosen company is an integrated global pharmaceutical company dedicated to offer healthcare solutions through its core business in three different verticals, i.e. pharmaceutical services and active ingredients (PSAI), global generics and proprietary products. The company started its operations in India in 1984, though it has been doing business for over 35 years with operations spread across the USA, Russia and CIS, Germany, the United Kingdom (UK), Venezuela, South Africa and Romania, with revenues exceeding 2.0 billion US dollars. The company's suppliers and customers are located in 20 different states.

5.4.2.3 Sustainable Practices

The core values of the company include integrity, transparency, safety, quality, productivity, sustainability, respect for the individual and collaboration and teamwork. This is the foremost non-Japanese pharmaceutical company to be listed on the New York Stock Exchange (NYSE) and the first Asian company to be Sarbanes-Oxley compliant. This gives us an understanding of the company's commitment towards sustainability and the society's well-being. It practices the Code of Business Conduct and Ethics (COBE) from the top level in its hierarchy to the lowest level, including the directors and employees, regardless of level and position.

Sustainable practices are integrated with the company's core business operations at two levels: one, at the corporate level, where the policies and strategies are set and funds allocated; and the other at the business unit level, which generates revenues and where the impact on the community and environment is most immediate. The company also believes in stakeholder engagement at various fronts for a sustainable future.

Over the years, the company has come to realize that it is time to shift its sustainability gear from the strategic to operational, and make sustainability parameters an integral part of the daily, weekly and monthly targets. The company's manufacturing operations have emerged as the first destination to start the journey of 'operationalizing sustainability' as they will have a material impact on the economic, environmental and social performance. The company's core team has identified nine pillars of sustainability, all of which assist in translating sustainability

into measurable actions. These include accessibility, productivity, quality, people, safety, environment, community, engineering excellence and continuous improvement. The bulk of its sustainability activities revolve around water and energy conservation, greenhouse gas emission and waste management activities because of it being a pharmaceutical company. The company has achieved substantial results in water and energy conservation, waste management and greenhouse gas emissions targets.

The company has demonstrated positive action and consistent engagement to build and reinforce the trust between the company and the community. Many initiatives have been taken at the national and local level through the company's Charity and Philanthropic Foundation, a non-governmental organization (NGO) that has touched many lives through medical camps, employee volunteering, supporting education and disaster relief, etc. Many patient care initiatives such as Sparsh, for making cancer treatment accessible for the underprivileged; EGFR first, for the diagnosis support for non-small cell lung cancer (NSCLC); Smart women, for special campaign for early detection of breast cancer; Disha, accessibility of 'reditux' for lymphoma patients; Ashayein, for counselling for the CKD; eye camps, blood donation camps and general check up camps are the activities carried out for the society in which the company operates. The Charity Foundation (CF) has been playing the role of a successful change agent in the social sector, by identifying new opportunities to serve the society. The company has identified two core areas, i.e. sustainable livelihood and education, to nurture large-scale sustainable changes. The livelihood initiatives include Livelihood Advancement Business School (LABS) for enhancing the skill sets of the youth, Farmers Livelihood Advancement Business School (F-Labs) for economical and eco-friendly farming and Skilling Rural India(SRI) programme for skilling the rural youth through vocational training. The educational initiatives include 'Pudami', under which a total of 27 schools have been established for the underprivileged in the most backward districts of AP, India; a co-education school; an education resource centre, early childhood care and education centre and a juvenile home for girls in Hyderabad. The company has also instituted Dr. Foundation for Health (DRFHE) for health education with the primary objective of improving patient care, thereby complementing and adding value to the existing system. As part of the DRFHE's initiative to bring about changes in the existing organizations, several programmes have been launched such as 'Abhilasha', a nurses' training programme; 'Sarathi', training programme for doctors' assistants; 'Sanjeevani', training for pharmacists and 'Aakriti', a programme for dentists.

The company is committed to the safety and well-being of its employees. It has launched a transformational change programme for the safety of the employees, named Parivartan. Further, as part of the safety transformation measures, 3000 safety field audits have been conducted under the risk containment phase, with 13,500 observations out of which 90 % have been closed or mitigated. The company's sustainable people management initiatives include promoting diversity, providing opportunities to differently abled people and training and recreation for the employees.

The company also strives to plant sustainable practices into the organizations that supply raw materials to it, contract-manufacturers who produce for it and authorized business partners who dispose of its waste effluents. There are three aspects of the extended sustainability to the suppliers, i.e. engaging the business partner to create a collective knowledge pool which raises the sustainability and strengthens partnerships; cascading the supplier code of behaviour and sharing best safety practices of 'Parivartan'; and implementing the mandatory supplier induction programmes for all new vendors to sensitize them about the business process and culture. Many sustainable initiatives in logistics, including shifting vendors close to the site, thereby cutting down lead time and logistics costs, implementation of ventilated trucks to keep desired temperature for domestic transports thereby minimizing the role of AC trucks and implementation of Tyvek cargo covers in collaboration with Dupont airlines to avoid temperature excursions during transit have been highly helpful in promoting sustainability.

The company pays utmost attention to product responsibility, since every day these products create a world of difference in people's lives. So, the company practices bioethics in product development.

The above analysis shows various flexible activities taken by both the companies for their stakeholders. This, in turn, has opened up different approaches that lead them to sustainability. These different practices adopted by the two companies have shown great flexibility at various fronts.

5.5 Learnings from the Two Cases

Both the companies have adopted different practices which they find suitable for their own domains. These flexible practices lead them to different approaches to sustainability. The discussions indicate the different approaches in all five stages of the value chain in both the industries. It has been found that the majority of the social dimensions, including sustainable sourcing, ethics, health and safety, education, child and bonded labour, women empowerment, sanitation and recreation are being practiced by both the companies. However, the activities under these dimensions are different and flexible in nature. For example, as part of the ethical dimension in distribution, the cement company practices product quality, pricing and facility inspection, whereas the pharmaceutical company has adopted measures such as 'pharmacovigilance', pharmacopeia adherence and bioethics in product development (product responsibility). Through these flexible activities, the two companies operating out of two different domains have found their own approaches to sustainability.

5.6 Final Comments

In this part, we present the implications for the sustainability of business cycles as well as the key implications for the supply chain management derived from the case study carried out above, apart from exploring the scope for future inquiry.

5.6.1 Main Implications for Business Cycle

Based on our case analysis and opinions, there are two aspects of interest that people need to consider about sustainability and future management decisions. One relates to enforcing the supplier sustainability practices in a way that helps the company and its management to have a strategic edge. The second, on the other hand, is about how the company engages all its stakeholders, including the society, through various sustainable initiatives, to create a positive climate for business. Nevertheless, these patterns are difficult to replicate as they involve time and money. On the other hand, the suppliers' alignment and collaboration efforts can also bring in sufficient positive changes in the sustainable practices. In sum, it may be observed that investing in education at different levels enhances the adoption of sustainable patterns and increases the benefits derived from such exercises. For instance, education to the employees, market and society and the consumer create a positive impact and give a competitive advantage. Moreover, when we compare both the cases, it is clear that the managers' education also plays a critical role in embracing sustainable practices and helps much in the long term. These results are in line with Sushil (2010) who says that the enterprise and stakeholder interactions would result in a star model of performance. In this framework, he emphasizes that the performance of enterprises is related to the performance of the key stakeholders, which would result in the creation of a sustainable enterprise.

5.7 Conclusion and Key Implications for SCM

Based on this research, we could identify several social dimensions specifically related to the Indian context such as equity, wages, safety, health, hygiene, ethics, child labour and bonded labour across all the stages of supply chain. Another aspect of interest is the identification of these social activities and their relationship with the manufacturing supply chain. The emergence of many social dimensions in the manufacturing supply chain has given new insights and perspectives to the supply chain managers, to lead their companies towards sustainability in manufacturing. Though the practices adopted by these companies vary in terms of 'name', 'time of execution' and 'to whom it is meant for', all these can be grouped under social dimensions. For instance, sustainable sourcing, local sourcing

methods and enforcement of supplier certifications for social and environmental practices can be grouped under procurement. Similarly, the activities related to the health and safety of the employees and suppliers can be grouped under the safety dimension, and these practices can bring about positive changes in the organization, making it more responsible. The product responsibility activities include the ways of rolling out quality and high performance products that can change the customer perceptions and act as a catalyst for them to repose their faith in the products and the brand. Therefore, sustainability practices can be spread along the supply chain to make all the firms involved in it more efficient. All the actors may benefit from the competitive advantages emerging out of such practices. Also, the relationships between the supply chain linkages and their handling may be essential for the successful management of sustainable practices (Mani et al. 2014a, b). It is also imperative for an organization to consider the adoption of sustainable practices as a long-term strategy. Socially sustainable practices adopted by the suppliers not only increase their efficiency, but also ensure an unstopped flow of the products and materials which, in turn, increases the performance of the supply chain in terms of reduction in the lead time, reliability and cost efficiency. This is in line with the research by Carter and Jennings (2002), which asserts that the social sustainability practices enhance the learning and confidence, which results in cost efficiency. Many educational initiatives and training programmes for the entire medical fraternity as well as awareness campaigns for the consumers, for instance, have increased the company's brand perception in the downstream supply chain. It would be pertinent to refer to the observations made on the companies' brand perception, which assert that the customers' perceptions of the firms' reputation can act as the source of strategic asset and competitive advantage (Aaker 1996; Ghemawat 1986; Weigelt and Camerer 1988). Various socially responsible practices by these companies have helped them achieve a positive perception of the firm and its products. In terms of ethical practices at the supplier locations, improved product quality leads to sustainability and it can also save the company from unwanted recalls. It would again be relevant to refer to a similar research on ethics and its impact on corporate performance conducted by Lu et al. (2012) in china. This research acquaints the supply chain managers with the different aspects of social sustainability and measures, adopted by two different companies and their impact on supply chain performance. With this research, we could conclude that many sustainable practices which are more flexible in nature with slight variations in the structure and execution, can lead to the social sustainability of the organization. Further, this research suggests that social dimensions vary from country to country based on social systems and values, and similarities and differences do exist in the way different manufactures address them.

Since this research considered only two case studies, there are still a number of gaps to be filled with further research. There is also a need to study cases from other industries and carry out inter-industry comparative analysis that might bring in new insights related to flexibility in the sustainable practices of industries. This research focused only on two Indian companies and, therefore, the results obtained cannot be generalized. It would be interesting to study other global

supply chains operating out of the emerging markets and their sustainable practices and challenges. This research primarily focused on the forward supply chain, and therefore, further research can explore the reverse supply chain and its social sustainability.

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Chapter 6
Facilitating Workplace Spirituality: A Study of Organizational Values and Practices

Chitra Khari and Shuchi Sinha

Abstract Organizational science is witnessing a substantial change by considering workplace spirituality as an organizational variable that affects employee behaviour and organizational performance (Ashmos and Duchon, J Manage Inquiry, 9(2):134–145, 2000). The central idea behind the integration of spirituality at the workplace is to facilitate employees' experience of meaning, connectedness and purpose in their life, which has been found to affect employees' work attitudes, job satisfaction, intention to leave and organizational commitment positively (Milliman et al., J Organ Change Manag, 16(4):426–447, 2003; Chawla and Guda, J Hum Values, 16(2):157–167, 2010). In this chapter, we analyze the practices and values adopted by three prominent organizations in India, to identify factors which facilitate workplace spirituality. Data highlights the role of spiritual climate and leadership support in facilitating the experience and development of spirituality at workplace. This chapter offers insights for researchers and practitioners (such as organization development experts) and suggests several future research possibilities to enrich our understanding of workplace spirituality (WPS).

Keywords India · Spiritual climate · Spiritual values · Workplace spirituality

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6.1 Introduction

Organizational science is witnessing a substantial change by considering spirituality as an organizational variable that affects employee behaviour and organizational performance (Ashmos and Duchon 2000). There has been a paradigm shift in the management thought from focusing on the economic and physical needs of an individual to their social, emotional and spiritual needs. Changing societal values, employees' search for meaning and purpose in their lives, work place alienation due to turbulent work environment and the growing impact of eastern philosophies are some of the reasons cited for this shift towards WPS (Jurkiewicz and Giacalone 2004). Organizations are making efforts to integrate the spiritual element, which was once considered a taboo in the organizational context, by providing a work environment that gives a sense of connectedness, purpose and meaningfulness to one's life.

The topic of workplace spirituality (WPS) is more than a decade old, but is still in the nascent stages of development. Research on WPS has prominently focused on defining and measuring the construct (Ashmos and Duchon 2000; Giacalone and Jurkiewicz 2003; Milliman et al. 2003; Kolodinsky et al. 2008; Petchsawang and Duchon 2009) and investigating its effect on employee attitudes and behaviour in an organizational context (Milliman et al. 2003; Rego and Cunha 2008; Pawar 2009; Chawla and Guda 2010). There is a limited understanding around what drives and facilitates employees' spiritual experience at workplace. In this chapter, we analyze some of the practices and values adopted by three prominent organizations in India to explore ways in which these organizations conceptualize WPS and facilitate employees' spiritual experiences at workplace. We highlight the role of spiritual climate and leadership support in facilitating the spiritual experiences of employees in an organizational context.

The remaining parts of the chapter are structured as follows: we begin by outlining the shift in management thought from a mechanistic and economic view of workers to a humanistic and spiritual view of them. We then review the prominent definitions of workplace spirituality and highlight the challenges associated with conceptualizing and measuring it. In the next section, we draw attention to the relevance of workplace spirituality towards enlisting employee engagement and harnessing their potential. This is followed by a discussion around the objectives of this chapter and methodology adopted. Prominent practices and values contributing towards enhancing workplace spirituality in the chosen organizations are discussed and analyzed in the remaining sections. The chapter closes with a discussion of the key contributions and limitations of the chapter and some insights into future research areas.

6.2 Workplace Spirituality: The Journey So Far

6.2.1 Paradigm Shift in Management Thought

Management paradigms have evolved along a continuum from one extreme to the other (Sushil 1997; Quatro 2004). Management's view of employees has metamorphosed from a mechanistic one to considering the spiritual and emotional dimensions of workers.

The classical management theories which emerged around the turn of the twentieth century focused on enhancing the effectiveness and efficiency within organizations. They predominantly emphasized standardization and predictability, which often led to worker exploitation and alienation. Prominent management thinkers like F.W. Taylor, Max Weber and Henri Fayol, adopted an economic view of workers, focusing on their physiological and materialistic needs (Broekstra 1991). In 1924, Mary Parker Follett's work on task significance offered counter-evidence to the economic view, by highlighting that employees seek meaning in their everyday tasks, such that they are willing to forgo the compensation in order to experience task significance (Quatro 2004). 1920s marked the beginning of the paradigm shift in the thinking of management theorists with the emergence of the behavioural management theory. The famous Hawthorne Studies led by Elton Mayo, highlighted the need for a more humane approach to management (Greenberg and Baron 2008). Elton Mayo's work focused on employees' physical and mental health. Maslow's seminal work on self-actualization gave strength to the humanistic view by focusing on the complete self of employees at the workplace (Maslow 1968). Maslow (1962) argued that the notion of self-actualization deals with the individual's innate desire/need for fulfilling their 'being values'. He explained and characterized this innate desire by feelings of awe, happiness, bliss, fearlessness and sense of self-confidence experienced by all individuals. Later on, the concepts of servant leadership and transformational leadership highlighted the idea of self-interest transcendence for the larger good of others. Servant leadership (proposed by Robert Greenleaf in 1970) emphasized that leaders who reflected the idea of selfless leadership by serving above profitability and practising humility by serving 'with' rather than serving 'over' others, are more successful in influencing workers (Quatro 2004). Similarly, transformational leadership (proposed by Bass in 1985) focused on achieving the collective interest through its people-oriented approach of individual consideration and respect for people (Reave 2005). In doing so, Greenleaf and Bass highlighted the idea of purposeful leadership by attending to and fulfilling the higher needs of workers, which is consistent with the notion of workplace spirituality.

A complete review of the evolution of management thought is beyond the scope of this chapter, but we have represented the shift in focus areas by mapping some of the prominent management thinkers in Fig. 6.1.
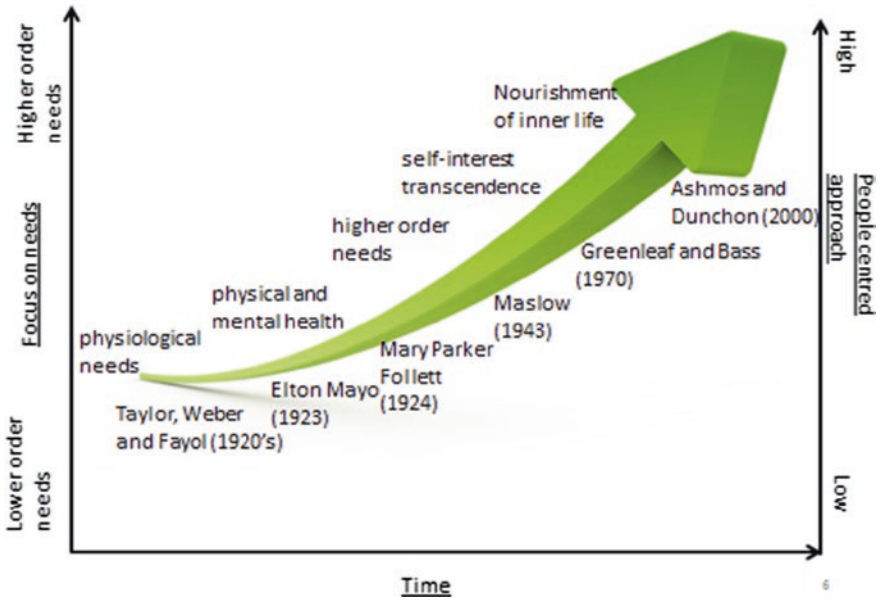
Fig. 6.1 Evolution of management thought

6.2.2 Rise of Workplace Spirituality

Late 1990s witnessed a sudden surge in interest on Spirituality at workplace. The Business Week magazine (June 5, 1995) reported their cover story on "Companies hit the road less travelled: Can spirituality enlighten the bottom line?". In 1998, a significant initiative was taken by the University of Western Sydney, Australia by founding 'Spirituality, Leadership and Management Network'. Business Week (Nov. 1, 1999) devoted a cover story titled, "Religion in the workplace: The growing presence of spirituality in corporate America". In the same year, the World Economic Forum catalyzed the spirituality moment by holding a session on "Spiritual anchors for the new millennium". The Financial Times article "Souls restored in the workplace", and The Independent article "Why God is moving into the workplace" also acknowledged the importance of the topic in today's organizations (Alfred and Shohet 2002). Significant ideas were put forth by six Harvard Business School alumni and three faculty members in their article in the Harvard Business School Bulletin on the meaning, reasons for the rise and relevance of workplace spirituality in the year 1999. Sensing the importance of spirituality in business, the Academy of Management established a dedicated group called "Management, Spirituality and Religion" in 2001. Several articles in reputed journals and books have been published on workplace spirituality.

A search on Amazon.com and Google Scholar on workplace spirituality yielded 820 results and 38,200 results, respectively. The growing popularity of the concept

can also be deduced from the fact that there are dedicated organizations such as the Center for Spirit at Work, Edge Walkers and Kaizen Solutions which aim to improve the employee morale, employee engagement, enhance retention and synergize team work through workplace spirituality. In India, many organizations such as The Art of living, Isha Foundation in Coimbatore, Prasanna Trust based in Bangalore founded by world-renowned spiritual guru—Swami Sukhabodhananda, Brahma Kumaris and Vivekananda Centre for Indian Management (VCIM) in Indore claim to have designed and run special courses for corporates by drawing lessons from ancient Indian literature and applying them to businesses.

6.2.3 Defining Workplace Spirituality

Workplace spirituality (WPS) is a multifaceted construct, which is still evolving with no agreed-upon definition reported till date (Kinjerski and Skrypnek 2006). Broadly, workplace spirituality has been defined and studied at two levels—individual and collective. At the individual level, it is defined as an experience of the nourishment of inner life (Ashmos and Duchon 2000), while at the collective level, it is defined as a framework of organizational values which generates a sense of transcendence, connectedness and completeness in employees (Jurkiewicz and Giacalone 2004).

At the individual level, the most prominent definition of WPS has been given by Ashmos and Duchon (2000), who define workplace spirituality in terms of the nourishment of inner needs by doing meaningful work, which provides a sense of purpose and meaningfulness, thereby generating a sense of interconnectedness with others. Ashmos and Duchon (2000) conceptualized and designed the first scale for the measurement of workplace spirituality at the individual level and gave three dimensions of WPS—inner life (which has items on the awareness of one's spiritual self), meaningful work (has items on joyful and interesting work, connection between one's work and the larger social good) and conditions for community (has items on personal growth, risk taking, fair evaluation, positive conflict resolution). Milliman et al. (2003) proposed a three-dimensional measure for workplace spirituality, based on Ashmos and Duchon (2000) scale, by adding another dimension of alignment (which has items on alignment between individual's values and the organizational values).

At the collective level, Giacalone and Jurkiewicz (2003) defined workplace spirituality in terms of the provision of a humanistic work environment identified by the existence of spiritual values such as benevolence, generativity, humanism, integrity, justice, mutuality, receptivity, respect, responsibility and trust, which emphasizes an individual's need for connectedness with oneself, others in the community and the environment at large. Empirical work in this area has largely focused on defining WPS at a collective level and investigating the role of spiritual values in shaping an organization's culture and (Jurkiewicz and Giacalone 2004), assessing the impact of spiritual climate of an organization (Pandey et al. 2009).

Studies have indicated that when people experience spirituality in the workplace, they feel more committed to their organizations and are less likely to leave (Milliman et al. 2003; Chawla and Guda 2010; Khari and Sinha 2014). Kolodinsky et al. (2008) provided empirical evidence of the positive role of organizational spirituality on job involvement, organizational identification and work–reward satisfaction. They found that organizational spirituality was negatively related to organizational frustration. Pawar (2009) found a positive relationship between workplace spirituality and employee work attitudes such as job satisfaction, job involvement and organizational commitment.

Growing research on WPS indicates a significant change in the way organizations perceive their human resources. Organizations are recognizing the importance of tapping the spiritual dimension of employees at the workplace, by providing a work environment that gives a sense of purpose and meaningfulness to their life.

6.2.4 Workplace Spirituality and HRD

Kahnweiler and Otte (1997) discussed the importance of considering spirituality in human resource development (HRD) and argued that workplace spirituality concerns the development of the latent talents of employees to improve their productivity. Neck and Milliman (1994) noted the significance of workplace spirituality in employees' reaching their full potential. Inducting spirituality at workplace, therefore, can be used to exercise this inherent power of individuals (Kahnweiler and Otte 1997; Fenwick and Lange 1998) in order to bring their whole selves to work (Moore and Casper 2006). Alignment of employees' values with organizational values facilitates the harmonization of one with oneself and others. This harmonization helps in increasing the spiritual quotient of employees which would further facilitate the freedom of choice by making employees aware of their personal capacities, strengths and weaknesses (Sushil 2013), thus reducing the space for biases and fixations which would help in raising their internal flexibility. Similarly, the external flexibility which deals with flexibility with respect to the rules, policies and procedures can be enhanced by the provision of a more humanistic work environment, characterized by autonomy, love, acceptance, compassion, forgiveness, integrity, honesty and respect for employees. This internal and external flexibility affects the freedom of choice which is an important ingredient to manage the flexible systems in the organizations through a complex interplay of actors, situation and processes to improve overall organizational effectiveness (Sushil 1997).

Organizations such as, Intel, Coca Cola, Boeing, Sears, Body Shop, Tom's of Maine (Karakas 2010), South West Airlines, Broadway Tyres (Poole 2009), Xerox (Harrington et al. 2001), HP, Ford Motor Company (Burack 1999), AT & T, Chase Manhattan Bank, DuPont and Apple Computer (Cavanagh 1999) are among the prominent ones to have incorporated spirituality in their workplaces to

provide room for spiritual expression of their employees. Application of spiritual principles at the workplace has helped companies to reduce absenteeism, enhance creativity and organizational performance (Karakas 2010).

6.3 Methodology

The aim of this chapter is to analyze the practices and values adopted by some of the prominent Indian organizations. A sample of three organizations has been chosen for investigation, where these three organizations represent different industries like automobiles, retail and railways, which have witnessed impressive growth of 10.35 % ("Automobile Industry in India" 2015), 24.0 % ("Retail Industry in India" 2015) and 10.9 % ("Indian Railways" 2015), respectively. Amidst their growth, these sectors face high attrition as one of their most pressing human resource challenges. According to the Deloitte (2013) Compensation Trends Survey for different sectors in India, the average attrition rate reported for retail industry was 13 %, while the average attrition rate for the manufacturing sector was 12 %.

The three organizations selected for analysis are: The Tata Group, Delhi Metro Rail Corporation and the Future Group. All three organizations are rated among the best employers to work for. Tata Motors secured the 8th position while DMRC was ranked 23rd in the survey of best companies to work for in the year 2013 (Pande 2013). Future Group was ranked amongst the 15 best companies to work for in the world ("15 best companies" 2015). Tata's have been rated among India's top five companies for CSR in year 2014 ("India's Best Companies" 2014). These awards acknowledge the humane work environments created for employees by these organizations.

A closer look at these organizations would help to highlight the practices and values that can facilitate workplace spirituality; offering insights and learnings for others in these sectors to follow.

6.3.1 Data Collection and Analysis

Information from the official websites of these three organizations was analyzed to understand the values and practices adopted by them to facilitate spirituality at workplace (through its dimensions of inner life, meaningful work, sense of community and alignment of values) for their employees. Official websites were chosen as the primary sources for data, for they offer timely and open access to information. Since this data is self-reported, it gives insights into the messages that these organizations wish to send out to their key stakeholders (including their employees).

The next section offers an overview and discussion of the spiritual values and practices adopted by these three organizations.

6.3.2 TATA'S Way

Tata motors limited, known for its "People's Car" Tata Nano, is one of the Indian companies listed in Fortune 500 companies list in year 2014. Tata motors limited is the fourth largest manufacturer of buses and fifth largest manufacturer of trucks globally. Since its inception in 1945, Tata motors limited has made its presence felt globally and is recognized to be an organization guided by its values of integrity, inclusion, accountability and concern for environment ("Values and purpose" n.d.) which authors like Brown (2003), Petchsawang and Duchon (2009) argue, facilitate workplace spirituality by generating feelings of transcendence and interconnectedness amongst employees. These values are fueled by a sense of higher purpose set forth by the founder of the Tata group—Jamsetji Tata. Under his leadership, the group has initiated numerous welfare measures for its workers like, free medical aid, crèches for babies of workers, technical institutes for training apprentices, schooling facilities for children and pension and gratuity which were later legislated by the government ("Company initiatives" n.d.). Recently, many community-building programs like vocational training initiatives for women especially tribal women, biotechnological innovations, education services for intellectually challenged people, biodiversity restoration and environmental sustainability have also been initiated by the group.

The Tata group pursues its mission of improving the quality of life of the communities it serves globally through long term value creation for all its stakeholders. A dedicated resource group—the Tata Sustainability Group (TSG)—regularly monitors the Tata group's impacts on society and the environment. The group encourages employees to volunteer time and skills for community development. In a recent effort, the TSG launched a programme—Tata Engage—to systematize, formalize and recognize employee's efforts towards community development. The organization set aside a special volunteering week, where volunteering opportunities for employees were created. Employees were then encouraged to share their experiences and learnings with colleagues through online and offline platforms.

6.3.3 Delhi Metro Rail Corporation's (DMRC) Adoption of Spirituality

DMRC came into existence on 3 May, 1995 with the joint efforts of the Central Government and Government of the National Capital Territory of Delhi (GNCTD) and revolutionized the mass transport system in Delhi. DMRC is one of the few organizations which has consistently achieved its targets before time and made operational profits right from the first day of operations ("Introduction" n.d.).

Spirituality occupies a primary place in the management ethos of DMRC. The ex-Chief of DMRC, E Sreedharan, draws heavily from the world recognized

Indian spiritual text "Bhagavad Gita[1]" to instill the values of honesty, hard work and diligence in their employees right from the senior managers to the workers and the contractors. Every new employee who joins is given a copy of "Bhagavad Gita" to benefit from its learnings (Ramachandran 2008). The same spiritual culture is sustained even after the retirement of E Sreedharan, by the present DMRC Chief Mangu Singh who is an ardent follower of "Bhagavad Gita". Employees face high stress due to strict deadlines, therefore frequent yoga sessions and lectures from motivational gurus are organized to help employees live a healthy life. The outcome of these organizational efforts resulted in positive energy, team spirit and helped employees to deal with the stress-related aspects of job (ibid.).

6.3.4 Future Group's Values Framework

The Future Group, led by Kishore Biyani, is known for its retail revolution in India spanning across 93 cities along with 60 rural locations. This proliferation of the group can be ascribed to the blend of values and practices which are exercised in the organization. The group focuses heavily on the values and beliefs to such an extent that it has created a special designation of Chief Belief Officer to draw attention to the importance of values-based management in the organization. The group hired Devdutt Pattanaik, who specializes in integrating Indian mythology with management, to help drive its values. A specially designed meditation programme called Suprabhat is run for the employees to help improve their spiritual quotient. The group emphasizes its belief in inclusive and sustainable growth through its mission and values. Values like Respect and Humility (towards every individual), Introspection (purposeful thinking), Flow (understanding and respecting universal laws of nature), Valuing and Nurturing Relationships generate a sense of community among the employees ("Our beliefs" n.d.), which is an important aspect of workplace spirituality (Butts 1999).

6.4 Analysis and Discussion

The central idea behind the integration of spirituality at the workplace is to facilitate employees' experience of meaning, connectedness and purpose in their life (Milliman et al. 1999). A closer look at the organizational values and practices of the sample organizations discussed above reveals the importance of spiritual climate and leadership support in facilitating the spiritual experiences and development of employees at the workplace.

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[1]The ancient text book which is the source of Indian Hindu philosophy and is accepted to have universal appeal and has been acknowledged in corporate context (Sharma 1999).

Spiritual climate comprises the prevalent collective perception of employees about the workplace that facilitates harmonization of one with oneself, others and the transcendent (Pandey et al. 2009). A central component of spiritual climate is the espousing and practicing of spiritual values such as benevolence, generativity, humanism, integrity, justice, mutuality, receptivity, respect, responsibility and trust, which help to generate a sense of meaningfulness, interconnectedness and transcendence among the employees (Giacalone and Jurkiewicz 2003). The organizations discussed in this chapter, align their practices with the spiritual values to make the experience of spirituality at workplace more successful. For instance, the community-building initiatives by the Tata group are guided by their values of inclusion and concern for environment. Self-reflection exercises like meditation and motivational spiritual talks by the Future group help to practice its values of humility and introspection, among others. Initiatives such as these, help in the harmonization of one with oneself and others at workplace, thereby, satisfying the inner life component.

The nourishment of one's inner life or inner needs of employees and harmonization with others and the transcendent are driven by a sense of higher purpose and practicing values like serving others and the planet, and finding personal peace which transcends extrinsic rewards (Kahnweiler and Otte 1997). This sense of higher purpose enables organizations (collectively) and its employees (individually) to work for the larger good and to view profit not as an end in itself, rather as a means towards achieving the larger good (Neck and Milliman 1994). The sense of higher purpose is usually ingrained in the vision, mission, values and practices of an organization. Once understood and accepted by the employees, it is proposed that this sense of higher purpose energizes employees and helps to align individual employee beliefs and values with the organizational values and beliefs; resulting in stronger commitment towards organizational goals and its well-being (Neck and Milliman 1994; Butts 1999; Milliman et al. 1999; Freshman 1999; Ashmos and Duchon 2000). Employees are able to draw linkages between their work and the larger social good; thus instilling a sense of connectedness and meaningfulness in them (Kinjerski and Skrypnek 2006). This becomes evident from DMRC's case where the Chief Public Relations Officer in 2008 acknowledged a positive impact of their spiritual climate on their employees' motivation, integrity and team spirit (Ramachandran 2008). Empirically, this research can be corroborated by findings from Garg and Jain (2011) who highlighted that meditation at workplace is positively associated with coping skills and negatively associated with role ambiguity, role conflict and stress levels of employees.

Leadership commitment is another crucial factor that influences the spiritual climate of an organization and facilitates the experience of workplace spirituality. Reave (2005) argues that leaders guided by spiritual values such as integrity, humility and honesty tend be more effective. Leaders who have a sound understanding of their values system are better able to initiate, reinforce and align a humanistic and spiritual values-based organizational climate which is better able to satisfy the ultimate meaning needs of employees (Pant and Sinha 2015). Such leaders invest considerable time, effort and energy in creating structures, policies

Fig. 6.2 Workplace
spirituality facilitation model
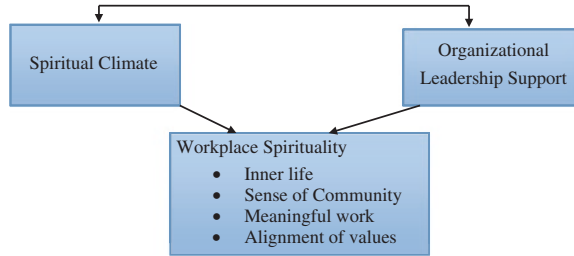
and practices which facilitate WPS. The Tata group's efforts towards inclusive growth and community development were pioneered by its founder Jamsetji Tata. These efforts are being sustained and systematized through adoption of formal structures and practices, which cannot be accomplished without the support of top leadership team. Role of leadership support is reinforced by analyzing DMRC's practice of giving the Bhagvad Gita to all its employees. The previous chief of DMRC E Sreedharan and the current leader Mangu Singh are both fervent believers of the values put forth by Bhagvad Gita and believe that all employees can learn immensely from the popular holy book.

An overview of the two factors facilitating WPS, as highlighted by the analysis of the sample organizations is offered in Fig. 6.2.

6.5 Conclusion

The interaction of the cognitive, affective and behavioural aspects of the human species underpins the complex nature of humans. Organizations are constantly looking for innovative ways to engage employees at the workplace. The recent surge in interest in workplace spirituality is an attempt in this direction.

Considerable attention has been directed towards conceptualizing and measuring WPS. Owing to its subjective nature, challenges have been encountered on both these counts (Benefiel 2003). Workplace spirituality (WPS) is a multifaceted construct, which is still evolving with no agreed-upon definition reported till date (Kinjerski and Skrypnek 2006). Several authors have called for an interdisciplinary approach towards studying WPS (Bell and Taylor 2003; Lips-Wiersma et al. 2009). Methodologically too, there is disagreement over the excessive use of positivistic design and tools for studying a subjective phenomenon like spirituality. Benefiel (2003) highlighted the need to adopt innovative and mix-method approach towards studying WPS. Despite these disagreements over conceptualization and measurement, there is growing evidence around the positive impact of WPS on employee behavior and organizational performance. The integration of a spiritual dimension at the workplace is shown to enhance the spiritual vitality of organizations (Bishwas 2015), which helps employees to perceive their work

life to be more meaningful and purposeful. The bulk of research in this area has been done in the Western context. Going forward, there is a need to incorporate perspectives and data from a non-Western and non-Christian setting to enrich the understanding of WPS and capture cultural variations, if any (Petchsawang and Duchon 2009). There is also a pressing need to identify the factors that facilitate workplace spirituality.

In this chapter, we made an exploratory attempt at investigating the organizational values and practices which enhance workplace spirituality. Three prominent organizations in India were chosen to understand their efforts towards facilitating workplace spirituality. Findings of the chapter indicate that organizations are openly recognizing the importance of workplace spirituality and adopting tangible and intangible means to incorporate it in their set ups. Spiritual climate and leadership support and commitment emerged as the key factors that reinforce the spiritual dimension at workplace. These findings are in no way conclusive and much more needs to be done to strengthen the depth of data (e.g. through in depth case studies, interviews, observations documentary analysis and employing mix-methods approach) and its comparability across organizations/sectors, but even the limited data points to the growing acceptance of WPS by prominent organizations in India. The self-reported nature of the data used for this chapter highlights these organizations' attempts at portraying themselves as humanistic workplaces driven by a higher purpose (concern for environment and community, among others).

The chapter provides insights to HR personnel, leaders and organizational development experts to facilitate the development of a spiritual climate marked with spiritual values and higher purpose along with strong leadership, to enhance employees' spiritual experiences. This chapter also highlights future research possibilities around—investigating the antecedents of WPS and their impact on individual, group and organizational performance, analyzing the ways and extent to which organizations accept and manage diversity of spiritual beliefs, investigating the differences in spiritual practices and values across different sectors and empirically examining the role of leadership in driving spirituality at work.

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Part II
Flexible Capacity Building for Management and HRM

Chapter 7
Ethical Mindsets: Learning from Cultural Comparisons

Theodora Issa

Abstract This chapter provides a very brief idea of the concept 'Ethical Mindsets' in an international context, which enhances the idea of the existence of different cultures, an understanding that will assist in enhancing the capacity building. 'Ethical mindsets' have been recently investigated deriving from two literatures 'spirituality and aesthetics' and was defined as '…an appreciation of and reflection on any situation through the filter of personal beliefs and values such as honesty, integrity, harmony, balance, truth seeking, making a difference, and demonstrating professionalism, deriving from the strength rooted in individual's inner-self' (Issa 2009, p. 163).

Keywords Australia · Canada · Ethical mindsets · Factor analysis · Hong kong · India · Ireland · Israel · Malaysia · New Zealand · Online survey · Singapore · South Africa · Spirituality · United Kingdom (UK) UK and Scotland · USA

7.1 Introduction

This chapter derives from a major ongoing international study, and provides a brief overview of an ongoing comparative study of ethical mindsets. This chapter will provide the tentative results of the analysis of data collected from 2,004

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respondents residing in 12 countries[1] around the world using an online survey[2] that allowed the collection of quantitative and qualitative data.

Preliminary data analysis suggests that Australia, Canada, India, Ireland, Israel, Singapore, South Africa, UK and Scotland, and USA had 'Spirituality view and practice' as the first of ethical mindsets components. The number of ethical mindsets components varied amongst countries under investigation, with a high of ten components (as it is the case with Ireland) to a low of four components (as it is the case with Malaysia).

The quantitative data was strengthened by qualitative data collected through the same online survey, where respondents provided their input on different sections of the survey highlighting the importance of courage to be able to live in a compassionate, honest world that is full of integrity. Furthermore, the onus seemed to be on top management and those in responsible positions where the majority of respondents felt that there is a need for a responsible and a balanced leader to create harmonious, productive and professional workplaces, coupled with maintaining respect, recognition and support for all co-workers. Although this research is limited to 12 countries, it has the potential to develop the current very limited theoretical perspectives on ethical mindsets with the identification of ethical mindset components in 12 countries which highlighted some interesting theoretical questions worthy of further research.

This chapter will commence with an outline of the current societal risks, challenges and moral issues facing Australia and the world according to some of the contemporary thinkers, highlighting the need for a fresh approach to deal with these ever-increasing risks and challenges that bring forth several serious moral issues. This will be followed by a brief discussion on mindsets and ethical mindsets, leading to the methodology and research questions, which are followed by results and discussions, thereafter significance, limitations and conclusion.

7.2 Societal Risks, Challenges and Moral Issues

Contemplating the risks and challenges that have become the hallmark of this twenty-first century, there is a need to seriously think about ways to lessen or diminish the number of, or the impact of these risks and challenges. There are two schools of thought on how best to accomplish such a difficult, yet morally essential goal. One school of thought argues that the organization is the source of these risks and challenges thus have to be dealt at the organizational level. The other school of thought, that the individual or the employee within such organization is the source

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[1]The majority of the data (i.e. 11 countries) was collected through Qualtrics with the exception of Israel where Dr. Wolf assisted, also some, not all, the data from India was collected with the assistance of Professor Chatterjee, Professor Bhatta, Dr. Ananthram, and Dr. Pragyan. In addition, some of the material on the problems facing the world, Europe, and Australia were mentioned in one of the presentations given by Dr Theodora Issa in Australia in 2015.

[2]This online survey is a refined by-product of Issa (2009) research.

of these risks and challenges. These two schools of thought are based on credible evidence supporting their different arguments, however, this chapter aims at the individual and is considered a step in the right direction toward the theorization of the concept of 'ethical mindsets', thus the argument in this chapter would be considered under the second school of thought, which considers the importance of individuals in moderating and even diminishing the impacts of societal risks and challenges.

In (2002) the German Philosopher Ulrich Beck outlined the risks facing the world then through events that shaped our world which he identified as 'risk society' giving an example from the events of 11 September 2001. Some of the risks identified by Beck (2002) were (i) A global financial crisis, (ii) Wrong decisions that led to global financial crisis, increase in waste and destruction of oceans, (iii) Housing crisis, including unsustainable housing development and climate, (iv) Past decisions about Nuclear energy, (v) Current decisions with regard to gene technology, (vi) Nanotechnology and its consequences, (vii) Climate change misunderstanding and lack of action. (vii) Air pollution and the Ozone hole effect, which are unleashing unpredictable, uncontrollable and ultimately incommunicable consequences that might ultimately endanger all life on earth. Beck (2002) goes on to state that the above entail that the fundamental concepts of 'modern society' must be re-examined. Household, family, class, social inequality, democracy, power, state, commerce, public, community, justice, law, history, politics must be released from the fetters of methodological nationalism and must be reconceptualized and empirically established within the framework of a cosmopolitan social and political science which remains to be developed. So this is quite a list of understatements. Nevertheless, it has to be handled and managed if the social sciences are to avoid becoming a museum of antiquated ideas. This work on 'ethical mindsets' might be a step in the right direction.

Though there were attempts to lessen the impact of the risks identified by Beck (2002), however, and despite all efforts exerted at different levels, such risks continue to be present in key economies. Jardine (2011) identified the ten biggest problems in the world according to the European Union, as, (a) poverty, (b) hunger and lack of drinking water, (c) climate change (20 % of Europe think Climate change is real), (d) the economic situation, (e) international terrorism, (f) availability of energy, (g) the increasing global population, (h) the spread of infectious disease, tied with this comes armed conflict, (i) proliferation of nuclear weapons, (j) while number ten was 'do not know', whereas 2 % of the people surveyed said they are still thinking about what the world's biggest problem is. They answered that they simply did not know.

While in Australia, Rudd (2011) underlined and underscored the ten global challenges facing Australia, such as the continuation of global financial instability, the challenge of nuclear proliferation, the cyber revolution, the threat of global terrorism. Rudd also goes on to state that we must also work to ensure the peaceful rise of China. It is worthwhile to note here that in 2010, the Chinese economy passed Japan as the world's second largest and, will pass the US in 2019 (The Economist 2012). Rudd (2011) goes on to state that within these ten global challenges is the rise of India. India's population is reported to pass China's in the next

decade, the food security, energy security and climate change, the continuing challenge of global poverty, the continuing global democratic deficit and the fact that freedom is not universally enjoyed. Rudd (2011) concludes that there is the problem of global governance which is so central to dealing with practically all these challenges. Rudd (2011) concludes that the institutions created more than 50 years ago are struggling to deliver the goods (e.g. the UN, the WTO and the IMF).

Indeed, these risks and challenges do not vanish, but seem to compound and increase in their severity, whereas Hjelmgaard (2014) highlighted the biggest risks facing the world in 2014, such as structurally high unemployment/underemployment, water crises, severe income disparity, failure of climate change mitigation and adaptation, greater incidence of extreme weather events (e.g. floods, storms, fires), global governance failure, food crises, failure of major financial mechanism/institution and profound political and social instability. Foster (2015) goes a step further, highlighting the ten biggest risks the World as a whole is facing according to the Americans in 2015, such as: the politics of Europe, Russia, the effects of China slowdown, the weaponization of finance (e.g. soured relationship between US and Europe), ISIS,[3] beyond Iraq and Syria, weak incumbents (Brazil–Turkey–Voter fatigue), the rise of strategic sectors, Saudi Arabia versus Iran, Taiwan/China and Turkey. Moreover, the Australian Government (2015) identified social issues that are facing Australia, such as: Australian homelessness, Bullying (face-to-face and cyber), Drinking nightmare (also, not to forget the ICE epidemic), children—migrants, living safe together, Online gambling, Racism, Domestic violence and Sexual violence. As it is apparent through the above discussion, the risks and challenges continue to be apparent, but in a more aggressive nature.

In the recent literature, Kish-Gephart et al. (2010) posit that corporate scandals proliferate, practitioners and researchers alike need a cumulative, quantitative understanding of the antecedents associated with unethical decisions in organizations. In their meta-analysis, which they drew from over 30 years of research and multiple literatures they examined the individual ("bad apple"), the moral issue(s) ("bad case(s)") and the organizational environment ("bad barrel") antecedents of unethical choice. Their findings suggest a need to more strongly consider a new "ethical impulse" perspective in addition to the traditional "ethical calculus" perspective. While Boiral et al. (2014) highlight the need for the employment of key values and abilities associated with both environmental leadership and the upper stages of consciousness development, which includes a broader and systemic perspective, long-range focus, integration of conflicting goals, collaboration with stakeholders, complexity management and collaborative learning. Further, Kish-Gephart et al. (2014) argue that self-interest has long been recognized as a powerful human motive. Yet, much remains to be understood about the thinking behind self-interested pursuits. From their research, they demonstrated that when personal gain incentives are relatively moderate, reminders of harm to others can reduce

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[3]ISIS—stands for the Islamic State of Iraq and the Levant.

the likelihood that employees will morally disengage. Furthermore, Kish-Gephart et al. (2014) concludes stating that when strong personal gain incentives are present in a situation, highly conscientious individuals are less apt than their counterparts to engage in morally disengaged reasoning.

Attempting to reconcile the diverse views in business and uncover the phenomenon from a business leader's point of view, Miska et al. (2014) argue that business leaders are increasingly responsible for the societal and environmental impacts of their actions. In their research, and based on rational egoism theory, they propose a formal mathematical model of responsible leadership that considers different types of incentives for stakeholder engagement. Their analyses reveal that monetary and instrumental incentives are neither sufficient nor necessary for business leaders to consider societal and environmental stakeholder needs. Non-monetary and non-instrumental incentives, such as leaders' values and authenticity, as well as their planning horizons, counterbalance pure monetary and instrumental orientations.

Moreover, there is a growing literature arguing that corporate citizenship and how this might bring firms competitive advantages without solid evidence from the perspective of recruitment and human resources, complementing this literature and drawing on propositions from the signalling theory and expectancy theory, Lin et al. (2012) provide empirical evidence which shows that a firm's corporate citizenship provides a competitive advantage in attracting job seekers and fostering optimistic career success expectation. Proposing a model based on signalling theory and cognitive dissonance theory, Tsai et al. (2014) which complements previous literature discuss how corporate social performance benefits business firms from a perspective of strengthened human resources and recruitment.

The above highlights the risks and challenges seem to be persistent, and enhance in their severity as time goes by, even becoming of a more complex nature. Hence, there is an urgent need to consider what else other than the current management, organizational behaviour, and leadership theories might help in elevating the pressure of those risks and challenges. It is argued here that the presence of 'ethical mindsets' in individuals who work and run the organizations might assist in achieving this goal. To follow, a discussion on 'mindsets' and 'ethical mindsets' leading to the results and discussions on the ongoing international research on 'ethical mindsets'.

7.3 Mindsets and Ethical Mindsets

Following from the above, certainly there is a relationship between the individual, and the organizations and those two schools of thought regarding the importance of the ethical orientation of the individual or the organization need to reconcile to find a better solution for the deteriorating ethical standards in business and other social issues. Undeniably, we need a change in mindsets to allow us face the ongoing risks and challenges. But why 'mindsets'; well, this takes us back to Issa (2009), when the concepts of 'worldview', (used since 1790), 'schema', (branded as psychology concept), 'frames' (branded as IT concept) and 'perception' (related to reasoning but more in

music and nursing disciplines were discussed. However, Issa (2009) concluded that the use of the concept of 'mindset' would be more suitable for the research at hand as it has been used by different scholars for the examination of issues in a business context (e.g. Fisher 1997; Gosling and Mintzberg 2003; Dweck 2006a, b; Fujita et al. 2007; Melby 2008).

Mindset is a simple idea discovered by world-renowned Stanford University psychologist Dweck (2006a, b) in decades of research on achievement and success—a simple idea that makes all the difference. Dweck (2006a, b) found that everyone has one of two basic mindsets (i) Fixed Mindset and (ii) Growth Mindset. With the fixed mindset, individuals would believe that their talents and abilities are set in stone, while those with growth mindsets recognize that talents are subject to development with inordinate abilities being developed over time, which is considered by Dweck as the means to success. Dweck (2006a, b) displays how mindsets can be changed at any stage of life to achieve genuine success and fulfilment. Earlier, the literature was then limited to the relationship between 'ethical mindsets' and religion such as Christianity (Italy) and Confucianism (Taiwan). Lee and Ruhe (1999) investigated the application of an organizational mindset instrument to compare the 'ethical mindsets' between Italy and Taiwan. Their results suggested that there were insignificant differences, but Italian business people were perceived to practice some Machiavellianism that puts results ahead of ethical concerns. Issa (2009) came up with the idea of 'Ethical Mindsets' through an investigation of two literatures: (i) spirituality and (ii) aesthetics. The empirical evidence presented by Issa (2009) assessed and acknowledged the existence of ethical mindsets in the Australian services sector.

The findings from Issa's (2009) the online survey, which were further explored and triangulated by the data gathered through focus groups interviews, provide an exploration and identification of eight major components of these mindsets: (i) aesthetic spirituality, (ii) religious spirituality, (iii) optimism, (iv) harmony and balance, (v) personal truth, (vi) contentment, (vii) making a difference and (viii) interconnectedness. These eight components recording high alphas, those range between 0.931 and 0.720, with their 34 dimensions recording high factor loading (high of 0.913 and low of 0.445). The discussions in this research (Issa 2009) highlighted the strength of the relationship between ethical mindsets, spirituality and aesthetics, allowing the contribution to the wider debate on ethical issues, specifically regarding ethical mindsets, spirituality and aesthetics. Issa (2009, p. 222) goes on to state that these two concepts are very personal and their perceived meanings would be highly influenced by: (1) the individuals' own philosophies, ideologies and belief systems; and, (2) the nature of the society in which these individuals live. This also suggests that there are contextual factors at work (i.e. intrinsic and extrinsic)—variables that have the potential to influence and shape ethical mindsets. This clearly demonstrates the idea of context dependency of ethical mindsets.

Further, and while Issa (2009) contends that there is a difficulty in defining issues relating to ethics or has anything to do with ethics; nonetheless, but based on these eight components, a tentative definition of ethical mindset(s) has been reached at for the use in this thesis.

…an appreciation of and reflection on any situation through the filter of personal beliefs and values such as honesty, integrity, harmony, balance, truth seeking, making a difference, and demonstrating professionalism, deriving from the strength rooted in individual's inner-self (Issa 2009, p. 163).

This was merely in relation to the Australian Services Sector. This chapter and in the following sections will provide a brief idea of the follow-on research that was conducted in 12 countries including Australia on 'ethical mindsets'.

7.4 Methodology and Research Question

Therefore, and deriving from Issa's (2009) research, a refined by-product of the original research (i.e. an online survey) was used to collect fresh data from 12 countries. This extended research aims to assist in the theorization of the area of 'ethical mindsets' examining whether spirituality and aesthetics are components of ethical mindsets, exploring their relationship. In pursuing this aim, the following objectives from the original research Issa (2009) were extended to include the twelve countries. These objectives are (i) Assess the existence and dimensions of ethical mindsets of individuals in different countries, (ii) Explore the components of ethical mindsets, and examine the relationship, between ethical mindsets, spirituality and aesthetics, and (iii) Contribute to the wider debate on ethical issues, specifically with regards to ethical mindsets, spirituality and aesthetics.

To allow the achievement of these objectives, the following research question that is also derived from Issa's (2009) original research will be examined: Do ethical mindsets exist in the countries under investigation? If yes, what is the nature of or what are the dimensionalities of ethical mindsets in the Australian Services Sector?

Using a mixed method design, data (quantitative and qualitative) was collected from 2,004 respondents from 12 countries around the world using a 5-point Likert scale through an online survey powered and collected by Qualtrics©. Only 1,991 responses were considered eligible for analysis. The Online survey provided space for respondents to provide qualitative data on all sections of the survey. This survey came in nine sections of 39 statements, with 9 spaces for the provision of qualitative comments by respondents. A separate section was added for the collection of demographic data where respondents were required to answer some eight questions with one opportunity to provide any relevant qualitative comments. The analysis and discussion in this chapter covers a small component of the overall research (Issa 2009).

7.5 Results and Discussions

A total of ($N = 2,004$) participants from 12 countries have responded to the online survey. These twelve countries were: Australia, Canada, Hong Kong, Ireland, India, Israel, Malaysia, New Zealand, Singapore, South Africa, UK & Scotland

Table 7.1 List of the 12 countries participating in this research with the number of respondents—prepared by the author

Country code	Country	Original	Deleted (gender missing)	Field missing data need to be imputed	Total
1	Australia	513	2	24	511
2	Canada	111	0	20	111
3	Hong Kong	106	1	32	105
4	Ireland	105	1	28	104
5	Malaysia	105	2	21	103
6	New Zealand	108	2	18	106
7	Singapore	104	2	16	102
8	South Africa	99	0	14	99
9	UK & Scotland	158	2	26	156
10	USA	199	1	29	198
11	India	293	0	0	293
12	Israel	103	0	0	103
	Total	2004	13	228	1991

Table 7.2 The regions and the number of responses for each of the regions—prepared by the author

Regional group	Regional name	Members	Total
G1	Anglo-American	USA, UK & Scotland, Ireland, Canada	569
G2	Asian	Singapore, India, Malaysia, Israel, HongKong	706
G3	African	South Africa	99
G4	Australasian	Australia and New Zealand	617
		Total	1991

and USA. Responses with missing data on Gender were excluded and applied the mean value from each of 35 questions applied to replace the missing data. This resulted in 1,991 complete sets as outlined in Table 7.1.

These 12 countries were divided into regions to allow comparisons. There were four regions identified from this data; however, it is worthwhile to note here that the African region (G3) includes only South Africa, which is considered a limitation towards comparison (Table 7.2).

All descriptive and statistical analyses were conducted including the mean and standard deviation of the 39 statements of the online survey, whereas the Mean ranged between a high of 4.47 which was recorded for the statement S3A[4] 'I do not care if my boss is honest or not' and a low of 1.38 for S2A which states 'it is important to me that my boss has integrity'. While the standard deviation recorded a high of 1.414 for S1B 'Prayer is an important part of my life' and a low of 0.562 for SH5 'It is important to me that people are treated fairly in their workplaces'.

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[4]This acronym denotes Statement three of section A of the online survey.

Table 7.3 Total variance explained for the seven factors identified from the data collected from 12 countries—prepared by the author

Total variance explained							
Factor	Initial eigenvaues			Extraction sum of squared loadings			Rotation sums of squared loadings[a]
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	5.783	25.144	25.144	5.391	23.441	23.441	3.171
2	2.723	11.837	36.981	2.359	10.255	33.696	3.350
3	2.066	8.981	45.962	1.537	6.684	40.380	3.471
4	1.430	6.219	52.181	1.062	4.616	44.996	2.125
5	1.335	5.804	57.985	.985	4.281	49.277	3.663
6	1.241	5.396	63.381	0.924	4.018	53.296	2.881
7	1.023	4.448	67.829	0.629	2.735	56.031	2.920

Extraction Method: Principal Axis Factoring
[a]When factors are correlated, sums of squared loadings cannot be added to obtain a total variance

While these analysis had provided some input in relation to the data collected. Further analyses were conducted.

As for extraction and rotation; the extraction method employed for factor extraction was Principal Axis Factoring. While for the Rotation and to allow the variables to correlate, oblique rotation (rather than orthogonal rotation) was applied using the Promax method (Costello and Osborne 2005; Hair et al. 2009; Gaskin and Lyytinen 2012). Due to the limitations of this book chapter, only the preliminary analysis will be shared.

The Cronbach Alpha for all 35 variables was 0.788 indicating an acceptable internal consistency of the items in the scale (Gliem and Gliem 2003). A Kaiser-Meyer-Olkin measure of sampling adequacy of 0.890 classified as meritorious indicates good sample size obtained for the analysis. The Bartlett's test of sphericity is highly significant, $\chi^2 = 25561.748$, d$f = 595$, $p < 0.000$, indicating that the items of the scale are sufficiently correlated for factors to be found. In the final round in Factor Analysis extraction, seven (7) factors were extracted with Kaiser Normalization (Eigenvalues greater than one). As demonstrated in Table 7.3, this model of eight factors explains a total of 56.031 % of the variation. The Eigenvalues and the amount of variances explained by each of these factors are presented below (after rotation).

The factor loadings of most of the items are high enough and the one with the cleanest factor structured to be considered as important as poised by Costello and Osborne (2005). While Hair et al. (2012) suggested the sufficient factor loading based on sample size for more than 350 cases is 0.30. In addition, the rule of thumb of Field (2005) to exclude several items under each factor where the factor loading below 0.5 for a sample size above 100 did not apply for this dataset for factor interpretation or labelling. The selection of items for interpretation referred to factor's reliability and face validity (Gaskin and Lyytinen 2012).

Table 7.4 Factors for the 12 countries with mean, standard deviation and cronbach alpha—prepared by the author

Factor description	Mean	Std. deviation	Cronbach's alpha
Factor 1: spiritually view and practice	2.87	1.27	0.882
Factor 2: relationship, contributor, professionalism, collaboration and self-responsible at the workplace	1.75	0.67	0.716
Factor 3: truth value at workplace	2.20	0.81	0.893
Factor 4: continuos self-development towards positive attitude	2.36	0.85	0.723
Factor 5: balance and harmony with workmates and supervisor	1.84	0.68	0.782
Factor 6: integrity at workplace	1.42	0.61	0.881
Factor 7: compassion at the workplace	1.90	0.74	0.817

The seven factors revealed from the Pattern Matrix for all 12 countries are displayed in Table 7.4 together with the mean, standard deviation and the Cronbach's alpha for each factor average:

Each of these factors had four to five dimensions with the exception of factors six and seven where each of these two factors had only two dimensions each. A score was calculated for each factor by averaging across each individual item. The internal consistency was also checked. While we found spirituality view and practice evident in all countries, there is a difference when establishing a comparison between countries such as USA and Australia, for example (more on prayer in USA and less in Australia), but more on being a spiritual person in Australia when compared with USA. As for Balance and harmony, this seems to be missing in Malaysia, Singapore, USA and South Africa. While Selfless and Attitude Improvement—not apparent in Canada, Hongkong and Malaysia, with Truth value at workplace being evident in all countries—but, the lowest alpha seemed to be in Singapore, and Hongkong. Integrity seemed to be evident in every country with the exception of New Zealand. Compassion is not evident in Australia, Hongkong, Singapore, UK and Scotland Self-responsibility for personal growth—this is evident ONLY in Australia.

Further analysis and further triangulation are being conducted *now* with the inclusion of the qualitative data to refine and enhance the understanding of the analysis of the quantitative data. However, a preliminary analysis of the qualitative data that accompanied the quantitative data in this online survey suggests that the onus seemed to be on the top management and those in responsible positions where the majority of respondents felt that there is a need for a responsible and balanced boss to create harmonious, productive and professional work place, coupled with maintaining respect, recognition and support for all co-workers.

From the brief analysis provided in this chapter, it is evident that 'ethical mindsets' exist in these twelve countries under investigation, with eight components, however, these will be investigated further and compared with (Hofstede 1984, 2007) dimensions of national culture.

7.6 Significance and Limitations

This research has the potential to develop the very limited theoretical perspectives on 'ethical mindsets' which might be a step in the right direction, thus avoiding the fate of the social sciences becoming a museum of antiquated ideas. This can be achieved with the identification of 'ethical mindsets' components in 12 countries which highlighted some interesting theoretical questions worthy of further research. This research is a step towards the theorization of the concept of 'ethical mindsets', which will have a practical impact on the way organizations employ and manage their staff through an understanding of their 'ethical mindsets' thus assisting these organizations to achieve their goals that relate to being socially, economically and environmentally responsible.

Although this study has its limitations; the data was only collected from four regions (Anglo-American, Asian, African, and Australasian) with African and Asian being incomplete and there is still a need to collect data from China, Russia, the Philippines, Vietnam, and countries in South America including Brazil, which would then enhance the understanding, and allow the theorization of this concept of 'ethical mindsets' which might assist in solving some of the risks and challenges that we continue to face in this twenty-first century. This is the follow-on development for the project.

7.7 Conclusion

In this chapter I provided the reader with a brief idea of the concept of 'Ethical Mindsets' in an international context through the presentation of a comparison between different cultures an understanding of this concept that will assist in enhancing the capacity building. This chapter provided a brief overview of an ongoing comparative study of ethical mindsets highlighting the tentative results of the analysis of data obtained from 2,004 respondents from 12 countries around the world using an online survey. This online survey allowed the provision of quantitative and qualitative data. Data analysis suggests that Australia, Canada, India, Ireland, Israel, Singapore, South Africa, UK and Scotland, and USA had 'Spirituality view and practice' as the first of ethical mindsets component. The number of ethical mindsets components varied amongst countries under investigation, with a high of ten components (as it is the case with Ireland) to a low of four components (as it is the case with Malaysia).

Although this research is limited to 12 countries, it has the potential to develop the current very limited theoretical perspectives on ethical mindsets with the identification of ethical mindset components in 12 countries which highlighted some interesting theoretical questions worthy of further research. This is considered a step in the right direction to allow the theorization of the concept of 'ethical mindsets'.

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Chapter 8
Indonesian Work Life Balance Policies and Their Impact on Employees in the Higher Education Sector

Tri Wulida Afrianty, Theodora Issa and John Burgess

Abstract The chapter presents findings from a study of the effects of work life programmes on employees attitudes and behaviour in the Indonesian higher education sector. Work attitudes and behaviours examined include organizational citizenship behaviours (OCB), in–role performance, and organizational commitment. These employee attitudes and behaviours were selected to be tested as it is generally claimed by employers that adopting formal organizational support on work and family issues could improve attitudes and behaviours, which in turn will benefit the organization. The relationship between work life balance programmes and employee behaviours and attitudes was tested via a survey across Indonesian higher education institutions.

Keywords Employee attitudes · Employee behaviour · Higher education · Indonesia · Survey · Work life balance

8.1 Introduction

As many organizations and employees seek ways to achieve a better work life balance, there has been growing body of research investigating work family and work life issues (Bardoel et al. 2008; Bianchi and Milkie 2010; Chandra 2012).

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The primary concern of the literature is the examination and resolution of work family conflict and examines the potential outcomes of work family conflict on both individual and organization (Eby et al. 2005; Kelly et al. 2008; Chang et al. 2010; Amstad et al. 2011; Michel et al. 2011). Research and awareness of work family conflict has led to initiatives from employers, public policy makers and international organizations on how to help employees (especially those who have family responsibilities) achieve work life balance (Hein 2005; Michel et al. 2011). Given the potential benefits to organizations from employee commitment and retention, many organizations are willing to implement various work life balance (WLB) policies as they satisfy a business case that sees benefits for the organization.

Existing research has largely focused on the examination of the availability of WLB policies, with little concern on the actual utilization of the policies and on the outcomes (especially for the organization) of the policies (Allen 2001; Poelmans and Sahibzada 2004; Hammer et al. 2005; Lapierre and Allen 2006; Muse and Pichler 2011; Ratnasingam et al. 2012). The literature is dominated by WLB studies in the context of advanced economies. Considering differences in national institutions and policies, as well as social and cultural issues, extending research beyond the context of western developed countries is important in order to test the applicability of, and further develop, the literature with regard to the effects of WLB support. This chapter discusses WLB policies in the Indonesian context and provides evidence of the impact of WLB policies usage on employees' work attitudes and behaviours in the Indonesian higher education sector.

Developing and implementing work and family (life) programmes in Indonesia are important for a number of reasons. First, the family is considered as the most central element in Indonesian culture and time with family, relatives and friends is highly valued (Sat 2012). Second, Indonesia is categorized as one of the next generation of emerging industrialized countries and there is a growing recognition at the policy level in addressing employees' interests (Bamber and Legget 2001). Third, the participation of female workforce in Indonesia has increased substantially (Ridho and Al Raysid 2010; Muntamah 2012; Yakub 2013) which has resulted in an increasing number of dual income earning households (Yustrianthe 2008; Ridho and Al Raysid 2010) which in turn makes work family (life) balance an important community and economic issue in Indonesia. In addition, Indonesian Labour Law (i.e. Law Number 13 of 2003 on Labour) requires that all labour in Indonesia receive equal employment opportunities with no discrimination in order to promote the well-being of employees and their families (Presiden 2003).

8.2 Work Life Balance Policies in Indonesia

Work life balance (WLB) policies refer to a group of formal organizational programmes and initiatives to assist employees with balancing their work and non work lives (Bardoel 2003; Burgess and Strachan 2005; McCarthy et al. 2010; Lee

and Hong 2011). The policies emerged as organizations responded to the changing workforce demographics, which includes an increasing number of dual earner couples and women with dependents (Wise and Bond 2003; Aryee et al. 2005). WLB policies in Indonesia are governed under Indonesian Labour Law but also include programmes initiated by organizations. The policies discussed in this chapter are categorized into four areas: flexible work options, specialized leave policies, dependent care support and religiosity support. The first three categories were transmitted from the Western economies while the fourth category is very specific to the Indonesian context. Flexible work options refer to arrangements that provide opportunity for employees to vary their working hours to better meet family commitments or others life demands (Glass and Finley 2002; Burgess and Strachan 2005). The term is often used to cover a range of policies, including reduced hours, non-standard hours, various form of remote working, and compressed working hours (Kelliher and Anderson 2010). Specialized leave policies refer to different leave arrangements and time that can be taken off from work. Specialized leave policies include bereavement leave, maternity leave, paternity leave, sabbatical leave and leave to take care for sick family member (Morgan and Milliken 1992; Bardoel 2003). Dependent care support refer to policies designed to provides workplace social support for employees with dependents (i.e. children and elderly) (Glass and Finley 2002; Drago and Kashian 2003). The benefits may include support of child care needs such as providing information about existing child care providers, offering assistance in making arrangement, and offering financial assistance towards child care costs (Russell and Bowman 2000). Additionally, in relation to the support to employees' elderly dependents, organizations may grant employees financial assistance towards the cost of elder care, and operate an elder centre for employees' parents and elderly relatives (Swody and Powell 2007). Religiosity support refers to any support that is governed by Indonesian laws and regulations to protect employees' right related to religion related matters. Since religion is fundamental to people's lives and contributes greatly in the way people see things in Indonesia, religiosity support in the workplace in Indonesia is essential.

At the national level, the Indonesian government regulates some policies to address work and family (life) issues. These law and regulations includes Indonesian Labour Law number 16 of 1994, Indonesian Minister of Manpower Regulation Number PER-04/MEN/1994 and Law Number 13 of 2003 on Labour. Table 8.1 identifies WLB policies which are covered in the Indonesian law and regulations.

Apart from WLB related policies that are governed under Indonesian law and regulations, employers are also important in supporting employees to achieve balance between work and family (life). To assist employees in balancing work and family (life) responsibilities, organizations in Indonesia are becoming more willing to offer flexible work options, which include flexitime, compressed working week, job sharing and home telecommuting (Yustrianthe 2008; Winarko 2010; Murti 2011; Solicha 2011; Wawa 2012). Some organizations in Indonesia have given flexibility for their employees to vary their working time. Under Indonesian

Table 8.1 Work life balance policies under Indonesian law and regulations

Policies	Remarks
Specialized leave policies	
Bereavement leave	Leave (1–2 days) without deduction of pay on each occasion of the death of a person being concerned (wife/husband/mother (in law)/father (in law)/ daughter (in law)/son (in law), or relatives who live together in the same house. Article 93, number 2 and 4 of the Indonesian labour law number 13 of 2003 (Presiden 2003)
Paid maternity leave	Paid leave for mother for 3 months in total which can be taken 1.5 months before and after giving birth. Article 82, number 1; Article 84 of the Indonesian labour law number 13 of 2003 (Presiden 2003)
Paternity leave	Paid leave for father up to 2 days when his wife is giving birth and or miscarriage Article 93, number 2, paragraph c; Article 93, number 4, paragraph f of the Indonesian Labour Law Number 13 of 2003 (Presiden 2003)
Sabbatical leave	Paid leave for personal and professional development. Article 93, number 2, paragraph i of the Indonesian labour law number 13 of 2003 (Presiden 2003)
Dependent Care Support	
Family allowance	Allowance for employees with dependents (wife/husband and children) who work for the Indonesian government Article 53, number 1 and 2 of the Indonesian labour law, number 16 of 1994
Religiosity Support	
Longer break and or leave to do religiosity rituals	Longer break and or leave which employees are entitled to, to do compulsory religious rituals without any pay reduction. Article 80 of the Indonesian labour law number 13 of 2003 (Presiden 2003)
Religious Holiday Allowance	Allowance that has to be paid by employer in cash and/or other forms a week before their employees' religious holiday celebration Article 1 of Indonesian Minister of Manpower Regulation Number PER-04/ MEN/1994 (Menaker-RI, 1994)

Labour Law, a standard working week is 40 h per week. A standard working day for most organizations in Indonesia is 8 h per day from 8 am to 5 pm from Monday to Friday (Yustrianthe 2008). Organizations that offer flexitime allow their employees to vary standard working times (Wawa 2012). A compressed working week gives employees an option to reduce their working week to fewer days than the standard working week, and employees make up the full number of hours per week by working longer days, which in turn gives the employees more days off to engage with family (life) demands (Winarko 2010; Solicha 2011). Job sharing refers to a working arrangement in which two or more employees share a full-time job (Brocklebank and Whitehouse 2003; Nickless 2013). Although job sharing could occur across many industries (Nickless 2013), in Indonesia, this working arrangement is more usually adopted in academia. Across universities in Indonesia, it is very common to have two or more lecturers share the responsibilities in teaching one course in one teaching period (Topari 2011). In addition,

there is also a growing trend for telecommuting work among Indonesians, in which employees do not always come to the office to do their job; instead they are allowed to do the job outside the office (Wawa 2012). However, the nature of the job would also affect the adoption of flexible work options (Yustrianthe 2008).

Providing on site/near site company child care is one of the WLB policies that is provided by some organizations in Indonesia (Fazriyati 2011; Rilis 2012). In some organizations the childcare arrangements were established to accommodate their employees' children only, however, some of the childcare is now open for the public (Rilis 2012). Providing childcare facilities for employees is intended to help employees with children. However, child care benefits and provision may be less valuable in Indonesian societies compared to Western societies. This is because in Indonesia it is very common to have co-residence with one's parents or in-laws or even with extended families that could provide assistance in doing household work and taking care of the children. According to Hofstede (2001), unlike in individualist societies, a number of people living closely together, not just parents and children but also extended families (e.g. grandparents, uncles, aunts, and cousins) and other housemates are considered as a family. Moreover, having a personal nanny and or paid help at home is more affordable and common among Indonesian families. Additionally, in collectivistic culture, it is both a duty and a pleasure for grandparents to take care of the grandchild. If grandchildren are sent to child care, grandparents may get offended as they may feel that they are not trusted (Aycan 2008). Although day care is not a common choice for parents in Indonesia, it is available and is the choice for some working parents.

Based on the WLB polices identified in Indonesia, which are both mandated by Indonesian laws/regulations and are initiated by firms, Table 8.2 summarizes all

Table 8.2 Main work life balance policies adopted in Indonesia

Policies
Flexible work options
Compressed working week
Flexitime
Job Sharing
Home telecommuting/working from home
Specialized leave policies
Bereavement leave
Paid maternity leave
Paternity leave
Sabbatical leave
Dependent care support
On-site/near site childcare
Family allowance
Religiosity support
Longer break and or leave to do religiosity rituals
Religious holiday allowance

Source (Menaker-RI 1994; Presiden 2003; Winarko 2010; Fazriyati 2011; Murti 2011; Rilis 2012; Wawa 2012)

the policies discussed which are categorized into flexible work options, specialized leave policies, dependent care support and religiosity support.

It is important to note that the Indonesian laws and regulations on employment discussed in this chapter are meant to protect Indonesian workers in all levels and sectors of employment (both formal and informal sectors) (Presiden 2003). However, effectively, the majority of the articles on those laws and regulations only cover Indonesian workers in the formal sector (Ady 2012).

8.3 Work Life Balance Measures and Their Effects on Employee Attitudes and Behaviours in Selected Higher Education Organizations

The evidence presented is based on a study on the effects of work-based support (that is, WLB policies) on Indonesian employees' work attitudes and behaviours (Afrianty 2013). The research was located in the formal sector of Indonesian employment (i.e. higher degree education).

Work attitudes and behaviours that are examined in the study include organizational citizenship behaviours (OCB), in–role performance, and organizational commitment. These kinds of employee attitudes and behaviours were chosen to be tested in the study because it is generally claimed by employers that adopting formal organizational support on work and family (life) issues could increase these attitudes and behaviours, which then will benefit the organizations (Galinsky et al. 2008). However, there is limited research regarding the impact of the support on employee's OCB and in-role performance (Beauregard and Henry 2009; Muse and Pichler 2011; Butts et al. 2013) despite the claim that the support could potentially increase employees' performance (for example, OCB and in–role performance) (Beauregard and Henry 2009; Muse and Pichler 2011). OCB is defined as 'individual behaviour that is discretionally, not directly or explicitly recognized by the formal reward system, and that, in the aggregate, promotes the effective functioning of the organization' (Organ 1988, p. 4). In contrast to OCB, in–role performance refers to employee behaviour related to the job requirements that are recognized by a formal reward system (Williams and Anderson 1991). Organizational commitment is considered to be the individual attachment to the organization (Mathieu and Zajac 1990).

In the study, the core hypothesis to be tested was that the use of WLB policies has a positive impact on employee's work attitude and behaviour. Social exchange theory (Blau 1964) is used to develop the rationale behind these relationships. Social exchange theory posits that all human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives (Blau 1964). Social exchanges involve trust, not legal obligations (Stanford 2008) and are built on a reciprocity principle (Lambert 2000; Wang et al. 2011). The theory highlights the conditions under which individuals feel obligated to reciprocate

when they benefit from other people, or other entities (Lambert 2000). The basic principle underlying social exchange theory is that an individual who provides rewarding services to another creates a sense of obligation to the latter person. In return, the latter person must give benefits to the person who supplies the services. This exchange will continue if both parties value what they receive from the other (Blau 1964). Thus, the application of social exchange theory suggests that employees will have a sense of obligation to exert positive attitudes or behaviours to their organizations if they are treated favourably and if they gain benefits from them (Lambert 2000; Wang et al. 2011) through co-operation, OCB, commitment and goodwill at work (Scheibl and Dex 1998; Lambert 2000; Allen 2001; Aryee et al. 2005; Wang and Walumbwa 2007; Beauregard and Henry 2009). Since work life balance policies are an indicator of favourable treatment from employers, employees who benefit from those policies will respond to the organization in terms of positive work attitudes and behaviours. The use of work life balance programmes should relate to more positive work attitudes and behaviours among employees because of the direct benefits gained from the used programmes.

To test this hypothesis, a survey was undertaken. The survey was conducted in 2012. The data were gathered using structured questionnaires. The original questionnaires were developed in English. They were translated into Indonesian and then back-translated into English to ensure cross-linguistic comparability of the scale-item contents (Brislin 1980). Multi source data (i.e. self-rating data from subordinates and supervisor rating data) were utilized to minimize common method bias. The questionnaires were developed in matched-pair questionnaires for employees and supervisors. Both academic and non-academic staff and their supervisors from 30 higher education institutions across Indonesia participated in the study. The reason for choosing a higher education context includes that there is a significant rise in female workforce participation in the Indonesian higher education that makes work family (life) balance an important issue in this sector. University staff members answered the questions regarding the use of work life balance policies and organizational commitment. Supervisors were asked to rate their subordinates on the measures of OCB and in-role performance.

The questionnaires were distributed to the employees (higher education staff) by mail through key personnel in each institution. The key persons were initially approached via telephone and email by the researcher to get their assistance in both distributing the research questionnaires and participating as respondents voluntarily. A minimum of five sets questionnaires were sent to the key persons by mail. Those sets of questionnaires were accompanied by an information letter about the research to the respondents and a consent letter. Employees then forwarded one copy of the questionnaire regarding OCB and in-role performance to their supervisors or line managers. Questionnaires were coded in order to identify the match. Completed questionnaires were collected and returned by the key persons to the researcher via mail using the prepaid envelop.

Of the 400 pairs of questionnaires distributed, 171 surveys were returned, for a response rate of 43 %. A total of 159 subordinates (i.e. 109 academic and 50 non-academic staff) and 100 supervisors (i.e. 77 academic and 23 non-academic staff)

completed the 159 matched surveys. Unlike the majority of past studies in the area of work and family/life that intentionally sought females as the respondents, this research expands the respondent pools to include males, given the fact that experience related to the conflicting demands from work and family/life is not unique to female employees. The proportions of male and female subordinates and supervisors who participated in this research are quite balanced at 59.12 %: 40.88 % and 55 %: 45 %, respectively.

In relation to WLB policies, respondents were asked to indicate policies that they currently use or had used in the past. Policies that were not used were coded as 0 while policies that were used were coded as 1. A total of policies used (for each category score) was computed by summing the number of policies used, checked by the respondents, so that higher scores refer to a greater number of policies used. This scoring scheme is adapted from Allen (2001) and Parker and Allen (2001). Several past studies (for example, O'Driscoll et al. 2003; Thompson et al. 1999) have also used this scoring scheme. Three of the five OCB dimensions (that are, altruism, conscientiousness and sportsmanship) developed by Podsakoff et al. (1990) were used in the study. These three dimensions of OCB were chosen because they have been found to be the most relevant to the Asian context (Chen et al. 1998). Moreover, altruism and conscientiousness have been central categories of OCB (Chen et al. 1998). The items were assessed on a 5–point Likert–type scale ranging from 1 = strongly disagree to 5 = strongly agree. Supervisors were asked to rate the extent to which they agreed or disagreed with each item related to their subordinates being assessed. Higher scores indicated higher employee OCB. Seven items from the in–role behaviours (IRBs) subscale of the performance scale (Williams and Anderson, 1991) were used to measure employees' in-role performance. Supervisors were asked to indicate their responses on a five-point scale (1 = never; 5 = very often) on each item related to their subordinates being assessed. Higher scores indicated higher employee in–role performance. Six items from Meyer et al. (1993) affective commitment scale were used to measure employee organizational commitment. This scale has also been used to measure organizational commitment in several past studies (for example, Allen 2001; Aryee et al. 2005; Odle-Dusseau et al. 2012). Affective commitment items measure employees' level of commitment as an affective attachment to the organizations. The items are assessed on a 5–point Likert–type scale ranging from 1 = strongly disagree to 5 = strongly agree. Participants in the study were asked to rate the extent to which they agreed or disagreed with each item. The six items were summed to create a total score. Higher scores indicated a greater employee organizational commitment. Several variables that are believed to have a possible influence on the relationships between the independent and dependent variables are treated as control variables in the study. This is to ensure the unique impact added by the independent variables can be determined without being contaminated by other variables (Tharenou et al. 2007; Sekaran and Bougie 2013). Control variables for the study were gender, marital status, age, number of children, religion, the presence of paid help, job category and higher education category. To test the hypotheses, a hierarchical regression analysis was conducted using SPSS version

21. Prior to the hypothesis testing, preliminary data analyses was undertaken that included validity, reliability, regression assumptions and the fitness of the model. The details and the results can be found in Afrianty (2013).

8.4 Findings

Findings from the study (see Afrianty 2013) revealed that the use of a range of work life balance policies (i.e. flexible work options, specialized leave policies, and dependent care support) did not have significant impact on employees' work attitudes and behaviours (i.e. OCB, in-role performance and organizational commitment). Similar findings were also found by Muse and Pichler (2011) that the use of a range of WLB policies had no effect on employees' in-role performance in a study conducted where? In terms of religiosity support, the usage of the support also did not have significant impacts on organizational commitment. However, it was found that the use of religiosity support had significant effects on employees' OCB and in-role performance, but in a negative direction. These findings suggest that in the context of Indonesian employees in higher education, WLB policies are not effective in improving employee work attitudes and behaviours as expected.

The ineffectiveness of the implementation of WLB policies may be influenced by employees' perception of the importance and suitability of WLB policies. The offered policies that were examined might be perceived as being not suitable for employees. Individual perceived values of work life balance programmes may vary because of individual circumstances. In relation with how work life balance policies affects employees' work attitudes and behaviour, Hattrup et al. (2007) argue that individual values are believed to be an explanation for behaviour, such that important values to the individual occupy more attention and have more significant influence on their behaviour and unimportant values, by contrast, have little or no influence on behaviour. In line with this, it is argued that the adoption of WLB policies with less evaluation of the actual need of such policies could limit the benefits of the policies (Blair-Loy and Wharton 2002). However, the role of this perceived value of WLB policies in the relationship of implementation of WLB policies and employees' work attitudes and behaviours need to be tested in future research. From the practical point of view, it is suggested that in order to generate the intended outcome (i.e. improving employee's positive work attitudes and behaviours), it is beneficial for organizations to evaluate the actual needs of their employees in relation to the development and implementation of WLB policies.

The role of family support in the Indonesian context, which is not directly examined in this research, might also contribute to the ineffectiveness of WLB policies in generating positive employees' work attitudes and behaviours. The support that employees receive from organizations in the form of WLB policies might be overshadowed by employees' family support. In Indonesia it is very common

to have co-residence with one's parents or in-laws or even with extended families that could provide assistance in doing household work and taking care of the children. According to Hofstede (2001), unlike in individualist societies, a number of people living closely together, not only just parents and children but also extended families (e.g. grandparents, uncles, aunts, and cousins) and other housemates are considered as a family. According to Brough et al. (2005), family members provide significant contributions in providing both emotional and instrumental support for employees outside of their work environments.

In terms of religiosity support, giving employees longer break or days off to do religious-related activities and giving religious allowances had a negative correlation with both employees' OCB and in-role performance (Afrianty et al. 2015). This may be because employees do not see WLB policies that are specific, to support employees' religiosity concern, as an 'extra benefit' from the organization. It is more about policies that 'must' be provided by organizations in Indonesia as a religious country. Thus, it failed to encourage employees to perform 'extra'-role behaviours (i.e. OCB). In fact, the religiosity support provided by the Indonesian organizations is mandated by the Indonesian law. Under the Indonesian Labour Law, number 13 of 2003, where article 80 of the law states that the employer must provide enough time for their employees to do compulsory religious rituals without any pay reduction. Under article 80 of the law, employees should be given opportunities to do their compulsory religious rituals and there should be no pay reduction for the employees related to this. Additionally, to support employees and their families celebrate religious holidays, under Indonesian Minister of Manpower Regulation Number PER-04/MEN/1994, it is mandatory for employers to pay a religious holiday allowance (Tunjangan Hari Raya/THR) in cash and/or other forms at least a week before their employees' religious holiday celebrations (Menaker-RI 1994).

In relation to the contradictory finding of the negative correlation between religiosity support usage and employees' performance specific to the job requirements (in-role performance), it may be because the utilization of the policies may mean sacrificing working hours. This may lead to decreasing job performance.

From a policy point of view, the issue related to religiosity support is very challenging. Organizations in Indonesia cannot simply terminate the religiosity support policies (even if they want to). Any religiosity related issue is very sensitive in the Indonesian context (Colbran 2010) and the provision of religiosity support is governed under the Indonesian Law and regulation. In the Indonesian context, terminating the religiosity support could also possibly worsen employees' job performance because inability to perform religious activities may potentially decrease employees' subjective well-being. It may negatively affect employees' positive feelings (e.g. enthusiasm and joviality) and increase employees' negative feelings (e.g. anxiety and nervousness) which in turn may influence their performance in doing the job-related tasks. A previous study shows that enhancement of employee well-being through promoting positive feelings and minimizing negative ones can result in improved job performance (Kaplan et al. 2009). In a religious country, religiosity is related to greater social support, feeling respected, and meaning

in life so that religious people in religious countries tend to have higher subjective well-being indicated by higher life satisfaction, more positive feelings, and reduced negative feelings (Diener et al. 2011). The challenge here for organizations then is how to continuously manage religiosity support for employees while ensuring that employees successfully fulfil their expected job performances.

It is important to note that data for the study were gathered only from one sector (i.e. Indonesian higher education) and a limited set of occupations (i.e. academic and non-academic staff). This research also applies only to the formal and regulated sector of the economy. Thus, the results may be generalizable only to that population. More research is necessary involving respondents of various organizations from different sectors/industries to externally validate the research findings. However, although this research focused on only one sector and one set of occupations, this research involves 30 organizations representing both public and private institutions in quite dispersed regions (i.e. five main islands in Indonesia). Nonetheless, the sample size ($n = 159$ matched survey) is appropriate for this research, allowing relationships between variables to be tested and examined.

8.5 Conclusion

The findings emerging from this chapter indicate that work life balance and employer behaviour in Indonesia do not positively align with the findings reported in academic literature pertaining to Western societies, where the use of work life balance policies leads to positive work outcomes. These suggest that the '*one size fits all*' strategy does not work for work life balance policies. Greater customization to fit the individual actual needs related to work life balance policies is undeniably required. The composition of the cohort (e.g. gender and marital status) would also need to be considered.

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Chapter 9
The Challenges of Strategic HRM Programs in Thai Higher Education Sector

Kunsiree Kowsuvon and John Burgess

Abstract This article demonstrates strategic Human Resource Management (SHRM) programs and practices in the higher education sector in Thailand. The aim of the paper is to identify the relationship between HRM strategy, policies and practices and organization strategy in Thai higher education system. This is a large and growing sector of Thai economy, yet there is an absence of systematic research on the HRM policies and practices within the sector. The research will compare selected private and public sector universities and seeks to: identify and classify the HRM programs in place; examine the application of these programs; examine the impact and relevance of the programs for employees; discuss measures to improve the design and application of HRM programs within the sector. Data collection will draw on multiple sources including documentary analysis, semi-structured interviews with key strategic managers and officials and intensive interviews with employees in each of the case study organizations.

Keywords Case studies · Strategic human resource management · Tertiary education · Thailand

9.1 Introduction

The higher education sector has developed rapidly in Asia over the past three decades. economic growth, advances in communications technology, an emerging middle class and integration with the world economy has created a growing demand for graduates with technical, managerial, and administrative skills across all countries of the region. Consequently, capacity development and strengthening higher education has become a priority in almost all countries of Asia (Chapman 2009). Given these

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rapid changes and growing competition in the higher education sector as it itself is internationalized, the need for universities to take a strategic approach to planning and resource management becomes ever more important. Universities are being required by the funding councils to have a short term and long term strategic plans in place. These plan includes organization goals, strategic statements, and key performance indicators (Rolfe 2003). Thus, Holmes and McElwee (1995) suggest HRM is the managerial strategic driven which strive for quality to ensuring, maintaining and enhancing quality. This article identifies the relationship between HRM strategy, policies and practices, and organization strategy in Thai higher education system.

Thai higher education system consists of four subsystems: (1) universities specializing in research and postgraduate studies, (2) polytechnic institutions specializing in science and technology, (3) universities specializing in undergraduate studies (referred to in Thailand as 4-year universities and liberal arts colleges), and (4) community colleges promoting community-based lifelong learning based on local culture and traditions (Commission on Higher Education 2012). At present, there are 172 higher education institutions in Thailand, comprised of 80 public institutions (65 public universities and 15 autonomous universities) and 92 private institutions (40 private universities, 22 private colleges, 21 community colleges, and nine institutes) (Commission on Higher Education 2013). There are over two million undergraduate and graduate students in Thai higher education system, the majority of whom (1,735,352 students) are in public universities. Most students are undergraduate students, accounting for 86 % of public university enrolments and 92 % of private university enrolments (Commission on Higher Education 2008b).

All higher education institutions are under the jurisdiction of the office of the Higher Education Commission, the Ministry of Education (UNESCO 2012). Moreover, the Ministry of Education established the Office for National Education Standards and Quality Assessment (ONESQA) to certify educational standards and assess the quality of institutions in 2006. The Commission on Higher Education established the mandatory National Education Standards guidelines for universities. Universities use these guidelines to develop and implement policies employing standards for practices and performance (Commission on Higher Education 2008a).

HRM systems have an important role to play in ensuring that these standards are met. The government regulations mainly advises on the systems, criteria, and procedures for internal quality assurance of ministerial regulations in the government gazette which are issued by Thai Ministry of Education (Ministry of Education 2014). All higher education institutions must accept the guidelines set out in the statute. Universities have the responsibility to implement government regulations though organization strategic planning (Armstrong 2011). The role of HRM in this system is to formulate and accomplish organization goals and objectives though HRM programs which includes strategy, policies, and practices.

There are several problems facing Thai higher education sector linked to uncertainty and environment change. There is a changing environment and increasing pressure from governments and global markets (Taylor 2006; Gordon and Whitchurch 2007). Higher education institutions are subject to increasing market pressures forcing them to achieve efficiency gains (Decramer et al. 2012). However, in Thai context,

whereas many government policies have placed pressure on all such institutions to compete more effectively in the higher education market and adjust to environmental change (Witte 2000). Under these circumstances, HRM systems in higher education institutions are forced to develop resources and capabilities to be a potential source of competitive advantage for individual universities (Rukspollmuang 2010; Evans and Chun 2012). HRMM strategy is also required to meet the challenges of an uncertain environment and to address internal organizational problems such as financial pressure and insufficient resources (Kirtikara 2001; Liefner and Schiller 2008).

However, HRM practices in Thai higher education focus on human resource development, which is a mono function of HRM. Thai government believes that universities can play a major role in human resource development and in particular in developing people with high levels of skills and flexibility, as well as providing academic knowledge to develop skills and competencies across the economy (Phinaitrup 2000; Brewer and Kristen 2010). Unfortunately, most universities currently perform below the standards set by the government; and although there are 172 higher education institutes in Thailand (Commission on Higher Education 2013), only five universities are listed in the 2008 QS world university rankings (QS 2012a). There are challenges for HRM to enhance HRM skills, capabilities, and competences to take the actions in ensuring organization strategies and quality standards are met. In this context it is worthwhile to identify and classify how strategic HRM program are organiazed within the university sector to meet the emerging challenges facing the sector (Armstrong 2011).

9.2 Developing Strategic HRM Practices

Strategic HRMM is about systematically linking people with organizational objectives (Schuler and Jackson 2007). Strategic HRM is defined as "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals" (Wright and McMahan 1992, p. 298). HRM strategies are very much concerned with developing the organization and the people within it. The context of strategic in this article can be viewed as concerning a systematic process of thought, action, formulation and then implementation in response to an evolving situation (Mintzberg 1987). Strategic HRM is about a systematic approach that should be adopted to planning and implementing HRM strategies (Armstrong 2011). To achieve competitive advantage through HRMM, it is necessary that activities be managed from a strategic perspective and that HRM be considered as the way to gain an improved competitive position (Porter 1985; Lengnick-Hall and Lengnick-Hall 1988; Armstrong 2011). The impact of both external and internal environmental requests, organizational structure and HRM systems should be managed in a way that is congruent with organizational strategy (Hendry and Pettigrew 1986) and it should systematically link people with the organization (Schuler and Jackson 2007). Thus, these people can drive and reinforce the strategic objectives of the organization (Fombrun et al. 1984).

There are two challenges facing strategic HRM in the university sector based on the findings from previous research. First, there is an unclear relationship between HRM and firm performance (Becker and Huselid 2006). The vague explanation may be because of a lack of obvious identification of how HRM achieves organizational performance within a strategic approach and a lack of clarity in classifying strategic HRM approaches in research. There are also different perspectives on how HRM can help to obtain competitive advantage (Porter 1985) and a variety to approaches to matching HRM to an organization's business strategy (Lengnick-Hall and Lengnick-Hall 1988). Second, there is an absence of systematic research on the HRM policies and practices within higher education sector, and especially within a Thai context.

Wright and Boswell (2002) suggest three recommendations for identifying differences between HRM policies and practices. First, from a macro perspective it is necessary to access the actual practices rather than the state policies (Huselid and Becker 2000) and ask respondents to indicate the practices rather the policies. This implies that it is valid to ask employees about such practices rather than HRM executives because employees can only give responses on actual practices rather than policies. Second, there is a need to ask questions to expose gaps between the formulation and implementation of HRM practices to establish why policies and practices do not converge. Third, a distinction should be made between the macro measures of HRM practices and micro level research to support the specification of the most effective HRM practices from a technical point of view.

9.3 Micro and Macro Domains from the Strategic HRMM Perspective

Strategic HRM explanations are based on the integration of micro and macro levels of theory and analysis (Huselid and Becker 2011; Aguinis et al. 2011). Wright and Boswell (2002) consider that macro level research can benefit from micro level methodology. In contrast, micro level HRM research can learn from the overarching goals of macro level research. In the same way as macro level research, macro level HRM research also generally seeks to understand the HRM system as a goal rather than individual practices. Micro level HRM research focuses on individual HRM practices. Therefore, applying macro goals to micro level research entails expanding the focus from individual practices to HRM systems. Similarly, Becker and Huselid (2006) argue that strategic HRM is more about how the firm's resources are spent and a focus on the HRM system rather than individual HRM practices. Consequently, this chapter will focus on multiple HRM practices or the HRM system as a whole and on developing an explanation based on bridging the micro and macro perspectives (Felin and Foss 2005; Abell et al. 2008; Aguinis et al. 2011; Huselid and Becker 2011).

Aguinis et al. (2011) insist that the critical challenges faced by management scholars require the integration of micro and macro research methods and theories. Furthermore, Huselid and Becker (2011) assert that the workforce differentiation

construct represents a significant opportunity for scholars to integrate micro and macro domains and the underlying processes linking investments in HRM systems and firm performance. Therefore, an integrative focus across various areas of HRM would accurately distinguish between strategic and non-strategic practices and consider the interface between micro and macro areas in terms of how those areas can contribute to one another (Wright and Boswell 2002). Abell et al. (2008) assert that micro level foundations have become an important emergent theme in strategic management. Strategy needs to build clearly on foundations at the individual level to generate a firm-level phenomenon. Consequently, an explanation of the theoretical mechanism of a strategic foundation will be incomplete if the micro level of individual actions and strategic interactions are not considered. Therefore, the bridging of the micro and macro domains is a specific and key challenge for the field of strategic management methods and theories.

9.4 Strategic HRM Programs

The state of knowledge of HRM program is defined as the set of formal HRM activities used in organization (Arthur and Boyles 2007). HRM programs provide the boundaries of the HRM system that enables HRM strategies, policies and practices to be implemented according to a plan (Armstrong 2011). In this chapter the focus is on core concept of HRM program within strategic purpose, HRM policies, HRM practices, HRM programs, and HRM challenge. This idea is used to identify and classify HRM programs in Thai higher education sector. The key words: strategic purpose, HRM policies, HRM practices, HRM programs and HRM challenges require explanation.

First, strategic purpose is what the organization wants to achieve. Strategic purpose is presented in the context of input, process, and output. The strategic performance flow in Thai higher education phenomena is from government regulations as the guidelines to be followed by HRM department in each faculty. The strategic HRMM programs enhance the HRM functions and HRM systems contribution to the strategic objective of the faculty (Lengnick-Hall and Lengnick-Hall 1988). In general, the faculty's strategies are planned to achieve both of organization goal and quality standards. Strategic purpose used in the context of suggestion of what strategic HRM should be from key informants. This point of view is obviously separate from strategic that already exist.

Second, HRM policies present an organization's stated intention. Strategic HRM policies are expected to integrate HRM planning with organizational strategy and provide a view on how strategic policies should be implemented and formulated in the field of HRMM (Armstrong 2011). The HRM policies implementation define as to convert strategic plan into action and then into result (Armstrong 2011). Moreover, HRM policy formulation is described as a rational process of deliberate calculation (Armstrong 2011) and demonstrated organizational goals or objectives for managing HRM (Arthur and Boyles 2007).

Third, HRM practices focus on what are they really do or what are exactly happening in real. The role of HRM practitioners in a strategic context is to achieve a balance between strategic and transactional activities. Transactional activities consist of the service delivery aspect of HRM, such as recruitment, training, addressing people issues, legal compliance, and employee services. Strategic HRM activities support the achievement of the organization's goals and involve the development and implementation of forward-looking HRM strategies that are integrated and aligned towards business objectives (Armstrong 2011).

Fourth, HRM program provides a notion of boundaries of the HRM system that enables HRM strategies, policies and practices to be implemented according to plan (Armstrong 2011) and the set of formal HRM activities used in the organization (Arthur and Boyles 2007).

Finally, the Thai, higher education sector is facing an uncertain environment. HRM challenge is viewed within the context to cope with threats from external environment such as when the organization has to manage change (Wright and McMahan 1992). Therefore, the context of obstruct from external environment of HRM challenge based on border of micro and macro domains, which delineate administrative barriers such as external environment of faculty (micro domain) and external environment of university (macro domain).

9.5 Methodology

This research uses a qualitative research methodology and takes an inductive approach to the generation of theories in relation to the research questions. The research employs collective or multiple case studies (Stake 1995) because case study research can capture the process under study in a very detailed and exact way (Flick 2009). The type of case focuses on representative or typical cases, thus exemplifying every situation or form of organization (Bryman and Bell 2011). In addition, comparative design of the multiple case studies allows comparison and contrast of the findings derived from the private and public universities (Bryman and Bell 2011).

Generalization requires the selection of representative cases from different perspectives for inclusion in the qualitative study (Creswell 1998). The sampling in this research is purposive and entails two case studies: a public university and a private university in Thai higher education sector. There are three criteria determining inclusion or exclusion for case study selection: (1) external approval on all indicators for external quality assurance standards (self-assessment report for the years 2006–2010; (ONESQA 2013), or (2) the university is ranked among the top 300 in the Asian university ranking in 2012 (QS 2012b), or (3) the university is ranked among the top 500 of the QS world university rankings in 2008–2012 (QS 2012a). Based on these criteria, the sample was narrowed down to a top faculty which was selected on the basis of their internal quality assurance scores focused on the management perspective component of the internal quality assurance indicators (Commission on Higher Education 2008a).

Data collection involves interview data from targeted participants. The interview strategy involves semi-structured interviews in which the interview process, although following an interview guide, is flexible and allows further questions to be asked in response to significant replies (Bryman and Bell 2011). The lists of questions are based on the research questions and objectives to be covered.

The level of analysis encompasses an integrative view of both micro and macro levels of research. This research focuses on both the macro and micro aspects of HRM, concerning HRM officers in faculties at the micro level and university presidents and HRM directors at the macro university level (Wright and Boswell 2002). In collecting the case study data, there is an emphasis on detail and the use of multiple sources to facilitate understanding of the complex work organizations as cultural entities (Bryman and Bell 2011). This approach also requires the identification and participation of key informants in the context of conducting an ethnographic study. The key informants or interviewees are those who can direct the researcher to situations or social settings, important events and individuals likely to be helpful in undertaking the investigation (Bryman and Bell 2011). Consequently, semi-structured interviews were conducted with six key university informants: (1) two presidents of public and private universities as key to driving organizational strategy, (2) two HRM directors from the main offices of public and private universities to aid in understanding key HRM practices at the university level, and (3) two faculty HRM officers to identify key HRM practices or HRM functions at the faculty level (Bryman and Bell 2011).

In terms of reliability and validity, the criterion for internal validity in evaluating this qualitative study is trustworthiness which concerns the credibility of the research findings, i.e. the extent to which they are believable and acceptable (Bryman and Bell 2011). Denzin (1989) suggests a multiple triangulation strategy as a suitable technique to increase the probability of credible results; furthermore, such a strategy increases the validity and reduces the potential bias of research by using different sources of data and methods. Moreover, Flick (1992) suggests reflexive triangulation in which data produced by different techniques are compared and assimilated in order to generate a detailed understanding of the process being investigated. This research employs triangulation through a combination of methods which examine different sources of data ad informants within the universities for the purpose of validating information (Bryman and Bell 2011).

9.6 Findings and Discussion

Case Study A: (Public University)
Case study A is a publicly funded university. This is a highly rated institution that was established in 1917 and is located in Bangkok. This university has 42 faculties, colleges, and institutes. Currently, there are over 35,000 students of undergraduate and postgraduate students and over 8,000 staff. The key informants were

the president, organizational HRM director and a faculty HRM director. Table 9.1 sets out there perceptions of the details of the HRM process, programs and challenges. It divides the assessments into hard policies (performance linked) and soft policies (developmental linked); and to macro and micro policies.

In terms of the strategic purpose of HRM, the informants largely discussed soft programs around participation, information sharing and network development. Only the President suggested hard options around performance appraisal and the use of performance metrics. With respect to HRM practices the President emphasized hard policies while the faculty HRM officer suggested soft programs around training and employee development. HRM policies required further explanation and dissemination across the organization, and they were seen to require clearer operational guidelines. HRM programs were seen to require linking to government, organization and faculty strategic plans. The HRM challenges were seen to include staff turnover, the complexity of dealing with multiple systems and employee attraction. In terms of the views on the HRM systems those involved in strategic decision-making (the President) tended to adopt a macro view and suggest harder HRM policies. In contrast, those involved in operational HRM at the workplace (faculty HRM officers) took the micro view and considered soft HRM programs linked to staff development and information sharing.

Case Study B: (Private University)
This institution was established in 1984 and is located near Bangkok. This university has 39 faculties, colleges, and institutes. Currently there are over 20,000 students at the undergraduate and postgraduate levels and it employees over 2,000 staff. The same informants as case study A and the same framework for presenting their views regarding HRM are presented in Table 9.2.

The preliminary findings in case study B were that macro level perspectives on HRM purpose and functions was prominent at the president level while the micro level, and more operational, processes linked to HRM were found at the faculty level. In contrast with institution A the senior executive tended to stress soft HRM programs, the hard HRM programs were espoused by the HRM director. As with university A there was an emphasis on staff recruitment and retention, improving staff qualifications and improving the ranking and standing of the university. Operational HRM challenges were linked to co ordination of HRM across the university, developing workable staff load and performance evaluation, supporting employee development and rewarding high performing staff.

9.7 Conclusion

Despite drawing on 2 case studies the HRM challenges were similar. The assimilation of HRM policies and programs with organizational strategy was seen as important; that is providing a strategic purpose for HRM was identified as a challenge. Attracting, retaining and developing staff were the key HRM challenges for

Table 9.1 The features and application of the HRM programs of case study A (public university)

			Strategic purpose	HRM practices	HRM policies	HRM programs	HRM challenges
Macro	President	Hard	Attract high performance staff, accurate performance appraisal, identify output and outcome indicators	Modernize knowledge and skills, adjust salary structure, and determine productivity	Relied on university's strategic plan, formulate clear policies system though develop core value, and consider criteria	Implement core value to a subunit of the organization, determine drive within output and outcome of productivities, link productivities with organization's targets	Recruit the most suitable candidates—link to organizational goals
		Soft	Employee participation	Training, and intensive orientation programs	Develop core competencies	Develop networks of employees to share knowledge and practices	Maintain positive working environment and culture attract and retain employees
	HRM director	Hard	Organize, develop, and harmonize HRM programs	Systematic criteria to rank and grade academics, and develop systematic career paths	Establish clear HRM policy guidelines and develop policy packages	Adapt imposed government sector systems to the university	Include grades, ranks in the employment contract
		Soft	Develop network systems across the organization	Recruit independently by faculty	Systematic HRM policies disseminated though a booklet and in the website		Dealing with multiple HRM systems—internal and external
Micro	HRM officer	Hard			Perceive HRM policies though circular letters of intra organization system	Implemented according to faculty's strategic plan	Monitor employee exits to other universities
		Soft	Organize flexible regulation for practices, encourage contributing, helping and taking action, and establish devoted to work and passionate toward their job in organization, and building employee commitment and loyalty	Recruit from faculty demand, and employees able to request training needs, networking loop, inspire and enabling employee self-development	Explain performance appraisal policies to each of faculty members to make it clear and eliminate doubt	Provide system for network loop	Coincide faculty's policies desires with university criteria, and provide suitable design to match information system and database with actual needs and requirements

Table 9.2 The feature and application of the HRMM programs of case study B

Macro			Strategic purpose	HRM practices	HRM policies	HRM programs	HRM challenge
	President	Hard	Adjust HRM criterion to be consistent with existing circumstances	Support fund for scholarships, launch self-develop program for employees, establish committee to develop career path plans, develop strategic HRMM practices though committee systems	Develop HRM and HRMD plan linked to president's strategic plan and roadmap, develop policies to support employee to gain higher academic rank	HRM program disseminated through committee system	Increase share of employees in higher academic ranks, encourage more staff to obtain PhDs
		Soft	Support career development, further career path plan, develop teamwork, support commitment to the organization	Interact with faculty for recruitment to meet faculty's requirements and needs	Support self-development plans linked to employee needs	The responsibility of HRM is to be supportive and to develop mentoring mechanisms	Support employee career development
	HRM director	Hard	Organized information sharing within HRM system, conduct career development and competencies to identify employee development needs, organize structure between divisions of HRM system, increase numbers of senior academics	Problem solving and decision making within committee format, recruit high achiever candidates, offer support for high performing academics	Drive individual development plans, approved policies though board of university executive director	More than one division within HRM systems, actives implemented through committee systems and mechanisms	Recruit new employees; improve quality of employees recruited
		Soft	Develop effective leadership skills, improve employee well being	Support high achievers, develop networks, facilitate employee development	Conduct policy to motivate and develop employees to develop career paths, flexible HRM systems to meet faculty policies and criterion	The role of HRMM is coordination between faculty and president level	Adjust and properly design pay structure to meet internal and external equity

(continued)

Table 9.2 (continued)

			Strategic purpose	HRM practices	HRM policies	HRM programs	HRM challenge
Micro	HRM officer	Hard	Clearly identify factors relevant to performance appraisal	Identify job description workload and criteria, develop guidelines for workloads use job description provides criterion for performance appraisal, recruitment to meet different criteria across faculties, use mentor systems to integrate new employee	Formulate faculty's strategic plan using the university strategic plan and government criteria, specify HRM projects within faculty's strategic plan	Meeting mechanism and action though the projects, strategy, plan, action, and implementation within faculty committees	Implement competency plans, provide clear channel of bottom-up feedback communications
		Soft	Awareness of performance responsibilities, effective communication system, effective learning, supporting high performance	Improve employee involvement and participation with the university faculty and social, provide employees feedback and results of performance appraisal, discuss performance appraisal reviews for agreement on the assessed ratings, provide reward from university to stimulus accomplishment, support teamwork, build informal relationship in teams			Working together, flexible criteria for performance appraisal and competency development

both institutions. Hard HRM programs were supported by the President in case study A and by the HRM director in case study 2. Supporting teamwork, consultation and employee commitment was also identified as being important in both institutions. Coordination and assimilation of HRM programs across the institutions was seen as a challenge as was aligning pay and performance systems to institutional goals (Armstrong 2011).

In terms of Wright and Boswell's (2002) suggestions regarding HRM programs, the interviews revealed that although there was awareness of the need for strategic alignment and policy coordination, in both cases there was no indication of any systematic evaluation of the effectiveness of existing HRM programs. Those responsible for HRM policy formulation (Presidents and HRM directors) generally considered the macro domain and assumed that HRM practice followed this. In both cases there was less consideration given to the implementation and effectiveness of programs.

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Chapter 10
An Analysis of Social Capital and Women's Capacity Building in Myanmar

Kathy Shein and Julia Connell

Abstract From the period 1988 to 2010, there have been approximately 60 international non-government organizations (INGOs) leading humanitarian activities in Burma/Myanmar. To date, very little research has been conducted analyzing either the depth or breadth of network-based social capital or the effectiveness of capacity building programmes of humanitarian INGOs with respect to networking, social entrepreneurship, capacity building and targeted populations, particularly to in relation to disaster related events. Hence, this study aims to go some way towards filling that gap asking "*how can networks promote the building of social capital and women's capacity building in Myanmar*". Taken into account are the various roles that women within the networks can play as well as the roles of other stakeholders, such as the INGO volunteers, and various governments in the support process. The research question is addressed through case study analysis focusing on a Myanmar based INGO program involved in economic development for women and girls who lost family members and property after Cyclone Nargis hit Labutta in 2008. This chapter focuses on a sample group from the INGO project that included 27 rural villages covering approximately 1,200 households comprising Cyclone Nargis survivors. The women involved were provided with interest free refundable micro loans by the INGO and achieved varying degrees of success which is attributed to their willingness and capacity for networking and the building of social capital in this chapter. Potentially, the findings will provide assistance to other INGO programs operating under similar circumstances. In particular through providing insights into the need for flexibility when delivering programmes that are targeted towards supporting women's capacity building in poor communities.

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10.1 Introduction

The United Nations (2013) lists a number of countries within Asia such as Nepal,
Myanmar and Afghanistan, as least developed countries (LDCs). The female
percentage of the total labour force in Myanmar was last measured at 49.81 %
in 2013, according to the World Bank (2013). These figures are measured as the
percentage of women who are active in the labour force and aged 15 and older.
The level of respect attributed to the status of women in Myanmar varies greatly
based on traditional social norms as women do not need to change their name
when married, are able to travel alone, manage in-house and outside businesses,
be involved in the management and governing system of the country, and are able
to keep property under their names throughout their lives (Womack 2008; Nyo
2011). Thus educated women leaders have been involved in social, economic and
political platforms since the monarchy periods through the British colonial time
till 1962 (Mya and Ko 2011; Amar 2011; Maung 2012).

Cyclone Nargis hit the Myanmar Delta on 2 and 3 May, 2008, affecting about
7 million people and resulting in a death toll of more than 130,000 (Women's'
Protection Technical Working Group report 2008). The most significant impact of
the cyclone was the changed composition of households. Many of the dead were
men—because they were fishing at the time the cyclone hit. Afterwards, approxi-
mately 14 out of every 100 households were led by women with the majority
being widows (Women's' Protection Technical Working Group 2009). The major-
ity of women-led households were from low income groups and 60 % of them
lived within substandard shelter. Moreover, many of their children 'dropped out' of
school due to financial constraints (Women's Protection Technical Working Group
2009) and women's' work intensified as they had to take full responsibility for
child raising and income generation, having lost their male breadwinner partners
(Chelala 1998).

This chapter reports on an INGO project that set out to enable the cyclone
affected women to create small businesses appropriate for their local markets so
that they could support themselves and their families. During the course of the
project 1,420 loans were distributed so the women could start their businesses.
Otero (1999) refers to these types of loans as micro financing being the "the
provision of financial services to low-income poor and very poor self-employed
people". The microfinance movement seeks to challenge traditional economic par-
adigms and the ways in which individuals and communities think about the provi-
sion of financial services to the poor (Payne 2011). Specifically, through creating
a means for employment and income generation, microfinance provides the poor
with "financial protection from crises and disasters, encourages schooling and
empowers the marginalised—especially women" (Turnell et al. 2009, p. 319).

Datta and Gailey (2012) maintain that woman's networks/cooperatives offer self-employment opportunities that can contribute to women's inclusion and empowerment. Further, they argue that entrepreneurial efforts undertaken by women have largely been neglected to date by researchers and policy makers. Given that entrepreneurship is considered to be one of the most important factors contributing to the economic development of society (Rao et al. 2011), women's entrepreneurship is an important part of the economic development process in Myanmar. While frequently used in terms of business ventures, entrepreneurship has increasingly been applied to the context of social problem solving (Noruzi et al. 2010). The term 'social entrepreneurship' refers to the pursuit of economic, social and environmental goals by enterprising ventures, has been created as a response to social and environmental problems (Haugh 2007) which often require fundamental transformation of political, economic and social systems. Dhatta and Gailey (2012) propose that entrepreneurship should be considered a social change activity with a variety of possible outcomes that may or may not be beneficial for women.

This chapter reports on documentary analysis that was undertaken with regard to the INGO project in the disaster hit area of Labutta, Myanmar. It focuses on analysis of the mechanisms that may be used to support the building of networks and social capital within local communities supported by the INGO in question. The purpose of the study is to establish how and whether the women in the sample group have built capacity and the outcomes resulting from this activity.

The chapter is structured as follows: first the study is situated in the literature on networks and social capital. Next, the methodology for the study is outlined, and the findings are presented before the conclusions and implications are discussed.

10.2 Why Focus on Networks and Social Capital?

Social capital research has given the poor a greater voice in the development of a number of World Bank policies. The *World Development Report 2000/2001: Attacking Poverty* (World Bank 2000) provides an example of how qualitative research can help to change the attitudes and policies of an influential development organization, leading it to define poverty more holistically. Based on social capital studies, the report stresses the importance of working with networks of poor people to increase their access to resources and link them to intermediary organizations, institutions and international markets while also facilitating parallel initiatives in good governance and social accountability (Dudwick et al. 2006).

Social capital can be defined as the social networks and norms that mediate development opportunities and outcomes (Dudwick et al. 2006). Sanger and Levin (1992) maintain that social entrepreneurship refers to individuals, groups/teams, networks and communities that band together to create pattern-breaking change. Noruzi et al. (2010) add that the change should be sustainable and large scale focusing on what and/or how governments, non-profits and businesses address significant social problems.

Putnam (1995) examined the general pattern of formulating different types of capital such as the combination of physical capital (resources) and human capital (training), claiming that the skill and productivity of the individual can be enhanced in a particular network or context (Putnam 1995). For instance, the combination of physical capital and human capital with social capital may be a catalyst, resulting in the further generation of physical capital, human capital and other types of capital of individuals, between and among members of different groups (Coleman 1988). Hence, individuals, community and regions may work through their own complex processes when they develop different forms of capital as resources and the potential to reduce poverty (Allahdadi 2011).

The nature of particular networks depends on the context of the society (Chang et al. 2010) and depends on the relationships with other actors within the network, thus flexibility and adaptation are applicable in the participation of every actor (Wilkinson and Young 2002). Network studies have shown that the transfer of knowledge and learning opportunities offers further opportunities with the potential for higher levels of social capacity building (Ahuja 2000, Batjargal 2003).

Capacity-building programmes are vital for low- and middle-income countries such as Myanmar as they can provide an opportunity to analyze interactions and relationship-building supporting a range of participants, in addition to the development of strong channels for knowledge transfer (Brass and Labianca 1999; Baker 2000). Putnam (1995) suggests that social capital facilitates group gathering, cooperation and mutually supportive relations in communities providing access to information, skill sets and enhanced power. As a result, subsequent programmes and their participants will be better equipped to address targeted issues by more effectively managing, accessing and utilizing resources while building capacity.

Ramanadhan et al. (2010) suggests that network-based social capital may be a useful addition to the goals and evaluation of capacity-building programmes. They cite Hawe et al. (1997) who argues that social capital deserves further attention in capacity-building efforts as it leaves the system under intervention with greater ability to tackle current and future issues, as well as those outside the scope of the programme. At a macro level, Myanmar and INGO interventions have been under researched to date, and at a micro level the effectiveness and efficiency of the INGO women's development programs have not benefitted from any academic scrutiny at all. This chapter takes some steps towards assisting that process by identifying some of the most efficient and effective means of network and social capital development.

10.3 Myanmar in Context

Myanmar, was also known as Burma due to colonization by the British in 1885. It officially became the Republic of the Union of Myanmar in 1989 under the military government (Payne 2011). In March 2014 Myanmar carried out its first population and housing census for over 30 years and Spoorenberg (2015) notes that the population is more than 60 million with 135 ethnic groups. There are seven major ethnic groups, namely, Burma, Mon, Rakhine, Shan, Chin, Kayin, Kayah and Kachin and many

subgroups, so the name Myanmar represents all the ethnic groups (Hlaing 2012). The major ethnic group is Bamar and therefore, a widely spoken language is Burmese language. Though there is no official religion, the majority of people are Buddhists and the others are practice Christianity, Islam, Hinduism and Paganism (Payne 2011).

Burma was the second richest country in Asia before World War II (Selmier II 2013), but economic development after independence was hindered by the unstable country situation due to ethnic conflict. The economic situation of Myanmar declined during a 26 year 'closed door socialist system' (Chit Swe 2012), becoming one of the Least Developed Countries in 1987 with the designation of the United Nations (Fink 2009). Apart from mismanagement and corruption (Fink 2009), the local currencies were demonetized by the Socialist Government in 1985 and the Burmese people experienced deeper poverty levels, leading to countrywide uprising led by students and the people in 1988 (Fink 2009). The military combatted these actions by killing many people, particularly thousands of young university students (Maung 2012).

Thus, Myanmar has a history of foreign occupation, followed by independence, one party rule and political isolation, with an easing of political controls and international engagement taking place within the last 5 years. This has resulted in

> …an influx of different types of actors in Myanmar such as international organizations, donors and businesses since the establishment of the elected government of President Thein Sein in 2011 presenting both opportunities and challenges. On the one hand, the opening up of the 'Golden Land' after decades of military rule has helped contribute to the development of dialogue between former warring parties, the establishment of democratic processes and mechanisms, and the inclusion of parties whose voices were formerly not heard. On the other hand, the 'gold rush' of regional and international actors' places new pressure on local actors to meet high demands, update their capacities according to foreign standards and compete with new players. (Gasser et al. 2014, p. 5).

Although a recent report on Myanmar was positive about its integration into the global economy and into the region, it cautioned that growth accompanied by inequality may lead to increases in poverty (Kudo et al. 2014, p. 2). Myanmar also suffers from a number of constraints such as a lack of trained providers and financial resources in the health care system (Safman 2005). For example, the Myanmar government spent just 2.1 % of its 2010 total budget on health, well behind both Cambodia and Laos (Roberts 2010). Thus, poverty has resulted in poor living conditions, lack of basic health information, and inadequate health services meaning that women's health in Myanmar is often poor, particularly for those who live in remote and mountainous areas.

10.4 The Myanmar Government, Donor Agencies and the INGO

The INGO pilot project reported here originated because of a small group of women from the Labutta (in the Delta Region) who stood on the roadside when the then-Prime Minister Thein Sein visited Labutta after Cyclone Nargis disaster in 2008.

The Myanmar Department of Social Welfare, under the Ministry of Social Welfare, Relief and Resettlement Myanmar, conducted a rapid assessment of the cyclone survivors' livelihood with its counterpart agency—the United Nations Population Fund—UNFPA in late June 2008. Their documents stated that the paddy farms, the fishery businesses and the sea salt industries, which were mainly in Labutta Township, were completely ruined by the cyclone Nargis. As a consequence, the Myanmar Military Government allowed previously blocked international humanitarian agencies to provide international humanitarian assistance to the area.

Since that time, the preliminary discussions concerning capacity building project implementation were conducted between the government and various donor agencies. Under the INGO's women's empowerment program the women and girls affected by the cyclone were targeted as priority groups in Labutta. The bidding results showed that two INGOs, one French and one Swiss won the bids to implement pilot support projects in different villages in Labutta from August 2008 it is the Swiss INGO (referred to only as INGO) that is the focus of this chapter.

10.5 Methodology

The documentary analysis used for this study is undertaken using an adapted 'Input-process-output (IPO) model'. This model is often employed in qualitative economics (Dietzenbacher and Lahr 2004). The concept of the IPO model shows how output from one sector becomes input to another sector to understand how dependent each sector is on the other sector in the relationship. A recent special issue of economic systems research following disasters was dedicated to input–output analysis (see for example Okuyama and Santos (2014) but to date there has been limited application of the IPO model to consider the development of social capital as a productive input for other sectors. The input-process-output model is also applicable for observing a system of organization, particularly an open system which identifies the patterns and vibrant interactions of a system within a transformational process (Robbins and Barnwell 2002) it is applied in this study and integrated with the World Bank (2013) social capital framework (see Fig. 10.1). This framework has been applied in post crisis areas such as Rwanda, Cambodia, Malawi and Zambia.

For this study documentary analysis was undertaken in order to understand how women in the rural villages affected by the cyclone in Labutta created social capital and built capacity during the INGO project period.

As part of the INGO rules and regulations, their project documents and photographs were stored as both hard and soft copies respectively at the INGO's main store for 3 years after the project completion. The document analysis was conducted during April 2014 over a period of 2 weeks in the INGO's office based in Yangon. The majority of the INGO project documents were written in Burmese except for the assessment reports and the final reports of each project which were written in English.
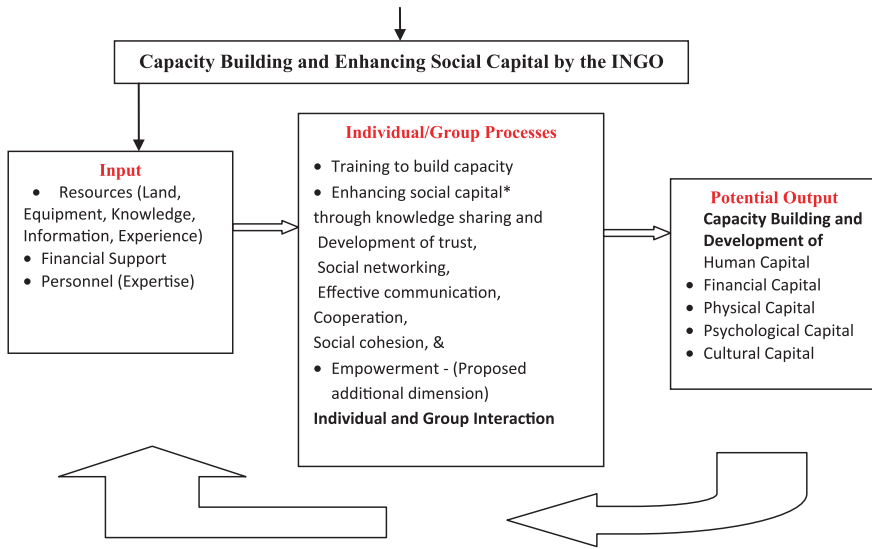
Fig. 10.1   The IPO model integrated with aspects of the world bank social capital framework

The project timeline was a key factor when analyzing the documents, given it took place over 30 months over three phases and was supported by three different donor groups. Each phase of the project required entry and exit assessment in order to identify any changes associated with the women's situation in relation to the building of social capital, capacity building, networking and financial growth.

The INGO project commenced in August 2008 operating for 5 months as a pilot program. Later, it was implemented as one of the main projects for a period of 25 months. The second INGO project phase commenced in February 2009 for 15 months, and a 10 month project was completed in December 2011 as the final phase—see Fig. 10.2.

The analysis of the first phase of the project identified the social, educational and economic situations of the villages and their inhabitants after the cyclone hit in 2008 and until the INGO commenced the Labutta project in August 2008. The analysis of the main project phase represents the experiences and any changes that occurred throughout the 30 month project period.

Fig. 10.2   Timeline of the Labutta project in Myanmar

Table 10.1 The INGO project documents sourced for the research

Serial no.	Description of documents analyzed	No of documents
01	Project proposals (pilot, second and last phase)	3
02	A set of the detailed implementation plans and project-end reports	3
03	Monthly reports	30
04	A set of the mid-term and year-end joint evaluation reports (donors)	3
05	External evaluation reports	2
06	Final report of three phases	1
07	The women informants files who were voluntarily involved in the interviews in the three villages	15
08	The individual case files of women informants who were voluntarily involved in the focus group discussions in the three villages	30
09	The meeting minutes with local and township level authorities	19
10	The internal monitoring reports of the INGO	15
Total	Total number of documents used for data analysis	121

Source Prepared by the author

For the documentary analysis 121 documents (with serial numbers) concerning the 27 project sites, including photographs, were reviewed as per Table 10.1 below. These documents were sourced from the INGO project offices where it is a requirement that they are kept for 3 years once a project is complete. The documents explain the situational changes through a series of reports about the 27 villages and were used to identify three sample villages to include in this study.

The documentary analysis showed that the 27 project villages were severely affected following the cyclone until approval of aid provision was granted by the Myanmar government in early August 2008. The challenges for the cyclone survivors in all 27 villages related to severe psychological problems due to the death of family members, lost property, lack of financial resources, lack of opportunity to restore livelihoods and/or status as many villagers had little educational, limited access to information, and the new breadwinner roles of women and girls within families.

The process of documentary analysis involved a review of the relevant documents whereby key terms, phrases and indications were examined to find instances where social capital, capacity building and network building appeared evident. Following this stage, documents were analyzed again to determine what activities, events and training reportedly led to these instances of social capital, capacity building and network building and conversely why they may have been absent.

Documentary analysis revealed that eight villages did not receive funds from the INGO, so those eight villages were omitted from the total 27 project's sites when considering the selection process for the villages to be included in this study. Following the project, three villages were selected for the study reported in this chapter—the 'sample villages' comprising what were referred to: as poor

performing, medium performing, and the best performing villages following the INGO interventions. Among the 27 village sites that were included by the INGO, 7 villages were considered best performing, 8 villages were poor performing, and the remaining 12 were rated as medium performing villages. Subsequently, one village from each of those rankings was selected for analysis. Thus the poor performing village is forthwith referred to as V1, the medium performing village V2, and the best performing village V3.

10.6 Background Information on the Case Study Villages

The geographical location of the three sample villages is the same for all and far away from Labutta with poor road infrastructure V1 is situated on the main road to Labutta and the other two villages V2 and V3 are 'off-road' villages, which are far more remote than V1. In relation to natural resources, V2 and V3 are surrounded by two streams and have many uncultivated flat lands.

The population of the three villages was not documented officially prior to the cyclone. The Local Authority Office (LAO) in each village issued the population data in the post-cyclone period and this information was considered confidential. The geographical situation and population profile of the V1, V2 and V3 are listed in Table 10.2. Other information such as ethnicity, race, age, education, income, health, etc., was not provided by the local authorities. As per Table 10.2, the V3 population was more than double that of the V1 and V2 according to the post cyclone data from the LAO, whereas the numbers of missing villagers was not announced officially.

Table 10.2 Demographics of the three case study villages

Serial no.	Description	V1 (poor performing)	V2 (medium performing)	V3 (best performing)
01	No of village households	193	210	390
02	Total population	747	775	1,638
03	Male	369	349	808
04	Female	378	426	830
05	Women beneficiaries in the pilot phase	(6 % of total women)	19 (5 % of total women)	n/a
06	Women beneficiaries in the in the 2nd phase	212 (56 % of total women)	426 (100 % of total women)	427 (51 % of total women)
07	Women beneficiaries in the 3rd phase	306 (80 % of total women)	355 (83 % of total women)	533 (64 % of total women)

Source Prepared by the author

10.7 Findings

10.7.1 The Input-Process-Output (IPO)

The documentary analysis is presented according to the IPO model discussed earlier. The input section concerns the resources available to the rural women in their village settings (i.e. physical capital) and through the other villagers in their network (i.e. human capital, cultural capital, psychological capital and social capital) as per Table 10.3. This section also includes the INGO's contribution such as the project activities and training for capacity building (i.e. human capital), disbursed financial resources (financial capital) and facilitating meetings to build social capital. From Table 10.3, V1, V2 and V3 differed according to geographical location, population size and resource availability. Moreover, although all the villages received the same input from the INGO, there were different levels of community participation in the project that affected the process and outputs of each as discussed later.

Turning to the process and output sections of the IPO model the evidence indicates that the degree of women's participation in training, the number of trained peer educators, participation in library service and regular meetings was much lower in V1 than it was in V2 and V3 (see Table 10.3).

Table 10.3 Process and output stages of the project case studies

Serial no.	Description of activity	V1 poor	V2 medium	V3 best
01	No of trained peer educators who participated in community work	8	15	15
02	No of cascade training sessions conducted by trained peer educators	4	12	25
03	No of women who attended cascade training by fellow trained peer educators	10	10	10
04	No of rural women who attended cascade training in each village	40	120	250
05	No of rural women volunteers who attended fund management training	10	10	10
06	No of trained rural women working as the fund board members	6	10	10
07	Established and maintained community center as the meeting place for rural women's committee and rural villagers	1	1	1
08	Library service by volunteer women	Once a week	Twice a week	Every day
09	Regular meetings attended by trained peer educators/women from the community fund committee	Once a month	Twice a month	Weekly

Source Prepared by the author

The data from Table 10.3 showed that the INGO provided the same education and training to all the three villages throughout the 30 month project period, although the community participation varied between villages from the commencement to the end of the project. As per Table 10.3 fewer women from V1 attended the INGO's first meeting, whereas the highest attendance of women was from V3. Regarding the women's participation in community development, the INGO trained the same number of peer educators (PE) from three villages, 15 PE each from V2 and V3 conducted a higher number of cascade trainings (12 and 25 sections respectively) to other rural people than that of 8 peer educator women from the V1 who conducted only 4 training sessions a year (see Table 10.3).

10.8 Facilitators and Barriers to the Capacity Building Process

Regarding the village women's participation in the INGO activities, the INGO staff provided more assistance to the women cyclone survivors who had lost their businesses and means of any livelihood, particularly women from V1. Prior to the cyclone approximately 80 % of the V1 women owned property and were financially secure because they were known as 'loan lenders' to other V1 inhabitants as well as inhabitants of other villages in the location. Therefore, they lost more than the sample group villagers who prior to the cyclone possessed few material possessions such as property or finances and subsequently fared worse in the aftermath of the cyclone. This meant that the women of V1 required more counselling sessions and psychological assistance than the women in V2 and V3 who prior to the cyclone were poor labourers. In addition, it appeared that the sense of collective ownership of the women based in V1 was weaker than that of V2 and V3, where more villagers were interested in the collective work/network building of their village. In relation to the social interaction/networks amongst the villagers, the V1 women were more individualistic than the V2/V3 villagers, as the majority of the V1 women did not want to attend meetings and did not want to participate in the small group of five women (small networks) that were facilitated by the INGO. This demonstrated the weak ties relating to the V1 women's social relationships/social capital building, and lack of collective ownership and interest in capacity building.

10.9 Microfinancing

In relation to the microfinance loans, the documentary analysis indicates that two types of loan were applied in the three selected villages. The first type was the individual loan and the second type was the collective loan. The individual loan was disbursed to the individuals, and the collective loan was for a group of five

women who performed collective businesses through sharing equal duties, responsibilities and profit. The documentary analysis indicated that there were no loan defaulters in V3, there were five women who delayed repayment in V2, and 4 loan defaulters in V1.

The collective income generating activities were run by 37 groups of women in V3, 23 groups of women in V2 and only 14 groups of women in the V1 indicating that women from V3 had stronger social ties than those in V2 and V1. Documentary analysis also showed that 88 % of loan beneficiaries in V3 and 83 % in V2 lived without debt, while running their own farming businesses and saved some money to deposit to the bank. In addition, the children of the rural women beneficiaries of the INGO project were able to attend school above the primary level. However, although about 75 % of loan beneficiaries from V1 lived without debt, their daily income was found to be just enough to cover the expenses needed to run their own business and keep their children in school during the project period. Only 10 women of V1 showed evidence of saving any money and depositing it to a bank. Moreover, all the women in the three villages developed individual business plans which showed that the income of the rural women beneficiaries increased over time while they also gained more experience in decision making both with regard to business and household matters. Hence, the micro financing and associated activities led to significant changes in the rural women's life during the project period.

In order to measure the capacity improvement of the individual rural women in the three sample villages, the INGO conducted a pre-assessment test when rural women joined the project as members and a post-test when each project phase was completed. Furthermore, the INGO provided fund management training for rural women before transferring the community funds to support the capacity and capability with regard to financial management of the rural women's committee. Analysis showed that the INGO applied a systematic knowledge sharing process to encourage women to generate income by leading businesses and making decision that produced a sense of ownership as well as working to build capacity for the rural women. Later, the INGO slowly reduced its participation in the project, whereas the women in the rural villages gained more control over and made decisions in relation to the management of their businesses. The deed of transferring funds (micro financing) to the rural women's committee in each village indicated the transparency, accountability and inclusiveness intended for all the women beneficiaries in the village network groups.

The INGO staff led the project activities in a flexible way so that the rural women cyclone survivors could both participate and lead the activities with a sense of ownership. The feedback of the beneficiaries stated in the final report that the consistency in the INGO staffing was the best way of building ongoing social relationships between the staff and rural women while engendering trust which ultimately led to the success of the INGO project as reported by the INGO staff:

> …both parties had enough time to prepare the exit plan in each project phase, and were able to re-adjust things when another phase was started in relation to the transitional process of transferring knowledge and building capacity for rural women until rural women

gained the ownership sense. That ownership sense was gradually developed both at the individual and the group levels in each network village. Apart from that, the staff also gained a great experience of tailoring the project flow according to the progressive achievement of the targeted beneficiaries, their families and their communities at large. (INGO Final Report 2012, p. 27).

10.10 Conclusion

Capacity-building programmes have been reported as being vital for the development of low- and middle-income countries (see Ramanadhan et al. 2010) such as Myanmar. Furthermore, participation in such programmes can lead to new networks and access to social capital. However, the documentary analysis presented in this chapter in conjunction with the IPO framework reflects that for those women in the sample group their lifestyle changed in various ways since the INGO first implemented their project in August 2008. Generally, the IPO model is one of the measuring tools used in business to identify economic growth and changes in productivity. In this study, the IPO was used an application tool for analyzing social issues that assists in the measurement of capacity building through various types of capital in relation to the INGO and rural women in the Labutta village networks.

Social capital can be defined as the social networks and norms that mediate development opportunities and outcomes (Dudwick et al. 2006). The social networks and norms in the sample group V1 were different to those of V2 and V3 and did not encourage the enthusiastic participate in attending training, meetings, forming groups or their own businesses in the same way that was being demonstrated in V2 and V3. Based on the documentary analysis, many of the V1 women failed to take up the opportunities offered by the INGO and subsequently did form a few numbers of network groups voluntarily, develop their own businesses, benefit from social capital or training/capacity building opportunities. Conversely, the majority of V2 and V3 women experienced what Putnam (1995) referred to as the combination of physical capital (micro financing) and human capital (INGO training) with social capital (gained from the INGO and the village networks) which resulted in the further generation of physical capital (ability to pay back their loans), human capital (run their own businesses) and other types of capital—gaining a 'voice' in the village and in their family situations (as per Coleman 1988). These processes in turn led to successful villages (V2 and V3) being able to reduce poverty (as per Allahdadi 2011), send their children to school and also save money to deposit in the bank.

Follow up interviews encouraged the village women to tell their stories and these help to explain why the V1 women did not participate as fully in the projects as the women from V2 and V3, and in the process losing out on the opportunities to change their lives and build capacity. It appears that they did not fully understand the importance of participation for both their own futures and that of their

children. This study set out to answer the question, *how can networks promote the building of social capital and women's capacity building in Myanmar?* Although the INGO staff led the project activities in a flexible way, so that the women cyclone survivors were provided with the opportunity to participate and lead activities with a sense of ownership, it may be that a future emphasis by INGOs in similar situations needs to be placed on the importance of full participation for network building by beneficiaries. This study has demonstrated that full participation in all aspects of the programme is necessary for both the enhancement of social capital and personal/collective capacity building.

There have been approximately 60 international non-government organizations (INGOs) leading humanitarian activities in Burma/Myanmar from 1988 to 2010. To date they have been subject to little or no research analyzing either the depth or breadth of network based social capital development, or the effectiveness of capacity building programmes. This indicates there is a gap in the literature that this chapter addresses through the case study analysis and in turn it suggests fruitful avenues for future research on the topic.

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Chapter 11
Agility in Competency Building— A Pedagogical Approach with a Case Illustration from the Indian IT Industry

Jose Kumar Reddypogu, Ravi Shankar Pillutla and M.G.P.L. Narayana

Abstract People competencies must be constantly upgraded or revised in organizations, since market conditions are constantly change. The importance of having systems and methods to make all aspects of the organization agile is critical. In knowledge industries, people competency plays a major role in the overall business. Systems and methods used to manage people competencies is a must therefore, enabling a quick change in competencies. This scenario is characterized by rapidly changing competency needs, a short time for building them, short scope of requirements, etc. Current methods focus on knowledge content whereas the change imposes changes in context, constraint peculiarities which do not largely impact the knowledge content. The impact is more visible in the application of knowledge, hence such training methods poorly enable competence to deal with change. Consequently, there is a need for low latency and high agility in people competency development pedagogies.

Keywords Agility · Competency building · Organization agile

11.1 Introduction

Change is constant and every organization and the individuals working in it face changes. Software organizations that deliver software to customers, deal with changes either in the form of change in requirements or technology change by

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way of versions. 55–60 % of software operations in the Indian context deal with managing change in software. Therefore, change is an important and constant factor that must be factored into every step of the working processes. For example, a sudden rush in the market for a retail product may in a short time create a major increase in the load on the system and hence call for a change in the way the product is supported. Or, this change may call for an upgrade in the product and hence, a new development exercise. Such situations are not uncommon. Similarly, there may be a high attrition of people with the right skills and hence, there is a sudden need to build competencies relevant to the problem and with good ability to deliver. Massive changes due to major market changes and requests for technology or product changes are a cause of worry for the management. Getting people to build new competencies is time taking and it may take longer still before these skills can be implemented for projects and for addressing customer needs. Change may impact any aspect of the work that is undertaken. With the advent of the internet and the world becoming more connected with transactions happening instantly, the pressure of dealing effectively with change has become imperative and methods to address them, particularly in relation to people competencies has become more difficult and more important. The impact of this change not being met is difficult to estimate or determine (Coverity5 Brochure 2009). However, that there is a need to be ready for constantly re-adjusting staff competencies.

In a typical software organization, project induction presents one of the most frequent challenges for change in the competencies of people. New staff and experienced employees must change from one work role to another, and this is a routine phenomenon. Typical scenarios are: new staff is provided Java training and due to business reasons are asked to change to .Net or Business Intelligence work. A person working in Banking on Java applications has to take on a developer role in a .Net project for retail application domains, in such scenarios there will be a need to move from one set of competencies to another. This is the most common scenario in the software industry. Inappropriate staff competencies affects the following: Cost of quality or reworks, auditing, lost time in delivering products, inappropriate solution to requirements, directly impacting the bottom line of the cost, quality and delivery.

The scenarios mentioned above will be used as the backdrop to discuss the pedagogical approach for building agility in staff competency building.

11.2 Current Approaches to Staff Competency Development

The current approach in the industry is to understand competence as knowledge of the technology and domain. Training is an instrument or mechanism to impart these and the task of knowing how to apply this knowledge of technology and domain to the work or requirements and deliver the outcome, is that of the trainees or developers. Competence, as a concept that builds the 'ability to do' in

the trainee is not recognized. In fact, By reference to the vocabulary document (normative ref) ISO 9000, you will see that competency is defined as the 'demonstrated ability to apply skills and knowledge' (Ravi and Narayana 2012; Curtis et al. 2009). This is one of the important reasons why pedagogies have not been popular in building competency. Knowledge building is easy and makes it easy and repeatable for trainers. Classroom training, training via popular massively open online courses (MOOCs) are accessible via internet, with reduced involvement of faculty, often results in poor correlation with actual project performance. This results in a high cost for quality since the effectiveness of training is questionable and subjective. The reasons could be varied. Competency requires the context and the process steps that must be executed for delivering the results or outcomes to be known in the specific case. This makes imparting competence difficult and specific to the desired outcomes and to the context.

11.3 Competency and Knowledge

In the context of agility and low effective latency, the difference between competency and knowledge is as follows: (Curtis et al. 2009; Ravi and Narayana 2012). Competence is the ability to do or ability to deliver required work, while knowledge is 'The information and understanding that someone must have to perform a task successfully'. Knowledge provides the basis for performing a skill (Ravi and Narayana 2012). Hence, people competence is an effective way of addressing agility than doing it by imparting knowledge content.

Agility is about quickly adapting to change. The creators of the concept of "agility" at the Iacocca Institute of Lehigh University (USA) defined it as: 'A manufacturing system with capabilities (hard and soft technologies, human resources, educated management, information) to meet the rapidly changing needs of the marketplace (speed, flexibility, customers, competitors, suppliers, infrastructure, responsiveness)' (Vaughan 2011). Despite the differences, all definitions of 'agility' emphasize speed and flexibility as the primary attributes of an agile organization. However, both these and in general all the definitions do not explicitly mention that the quality of the work delivered has to address the needs of the changed scenario. This reflects an assumption that the quality of work or the ability to meet the needs is met by the people managed by the organization. It is therefore necessary that all who research agility must ensure that the methods they propose to build agility, not only cover the process of agile organizational behaviour, but also includes the way to effectively ensure that quality deliverables can be built, using the proposed method.

The People CMM refers to workforce competencies as a cluster of knowledge, skills and process abilities that an individual should develop to perform a particular type of work in the organization. Consequently, building competencies that are imposed by change in the work or product specifications is the essence of agility. As long as the context does not change significantly, the need for agility is limited

to improvements and addressing innovations. In such cases, traditional methods of competence building will continue to be relevant. However, in today's work environment change is rapid and time to adapt to changes is small. Hence, quick competency building is extremely critical for software and knowledge based industries. It is necessary to understand the root of competence building and how process steps in delivering work outcomes map to the changed features of the requirement.

11.4 The Traditional Induction Program in the Indian IT Sector

The process of inducting new people into projects in software delivery groups in IT companies, uses a combination of classroom training, working with mentors and hands on working with identified content. Table 11.1 depicts a training plan that is used in the induction program (Ravi 2008). Here, the expectation is that if the associates have the knowledge and are exposed to the nuances of the project context, they will be able to apply and deliver results effectively.

Table 11.1 contains the schedule for developers who will be inducted into the project. The time allocations are illustrative in terms of the division of tasks that should be incorporated into the program.

Other methods to train people to meet changing requirements of the IT sector include problem based learning, project based learning, and role playing (Fink 2003). The key aspect of all of these approaches is that the recall, reuse and internalization of the learning are not addressed. In the performance of any activity, be it software or non-software, the key principle of ensuring that every step is executed to build deliverables must correlate to one or another quality in the deliverable. This is the principle of the process step—product quality that has been emphasized by Deming (Ravi and Narayana 2012).

11.4.1 The Impact of Traditional Induction Training

In a test conducted by the authors, in line with the schedule in Table 11.1, trainees attended the initial training programs and joined projects based on the general initial training provided by the organization. The project absorbed these trainees

Table 11.1 A typical induction training program in Indian IT sector

Project induction training—traditional way	
Description	Training (weeks)
Classroom training	2
On the job training (old cases)	8
Working on live projects with mentors	12
Total	22

Table 11.2 The performance of trainees after undertaking traditional induction training

Performance of trainees in pilots			
Team	Pilot type	No. in pilot	% who executed correctly
P1	Paper test	42	52
P2	Paper test	59	53
P3	Live environment	11	55
P4	On system	56	27
P5	On system	33	29
P6	On system	33	20

post training in order to assess the effectiveness of the training. The trainees were organized into teams and they were given tasks to undertake from providing advice to developing and applying programs.

Various tests were provided to the trainees and the results in Table 11.2 demonstrated that the trainees in general were not able to effectively execute the assigned tasks. In turn this suggests that induction training should be restructured and modified if it is to meet its objectives.

Within the industry the effectiveness of induction training programs and the variation in the uptake of competence is high and the clear alignment of learning achieved to the needs of project teams is poor. In other words, the correlation of the performance in induction training and the actual performance of the trainees is visibly low. Table 11.2 shows this variation in the 'ability to do' among a number of teams after training (Ravi and Alladi 2013).

11.4.2 Understanding the Failure of the Induction Training Programs

In the above process the process of how an individual learns, understands and relates to outcomes expected is not visible. The 'how' in the problem requires attention. The focus in these methods is on the business process of providing content and bringing together named experts in contact with learners thereby providing opportunity and exposing learners to the tacit knowledge of experts. The actual learning, recall, application ability, perspective and reuse are expected to happen from this contact. The validation of the competence that the trainees have acquired is not explicitly carried out. The performance of individual associates in actual projects after the induction schedule is complete and the trainees are inducted into the project is observed. Thus, induction process objectives are subjectively achieved. The variety in the learning curves, the complexity in the deliverables and the contexts, the variation in the level of knowledge and familiarity in the wide group of learners in not factored into the process. As result the achievement of agility in people competencies with currently known methods, is therefore not sustainable.

People competencies must be constantly upgraded or revised in organizations, since markets and other factors change constantly. The importance of having systems and methods to make all aspects of the organization agile is critical. Most traditional methods of adapting people to newer competency needs are based on imparting knowledge related to new scenarios. These approaches have a number of shortcomings and hence result in a high 'effective latency' in people being able to deliver in the changed scenario. 'Effective latency' is the time taken for the person to acquire competence in the changed scenario and to build quality deliverables in the given scenario. This is in contrast to the traditional idea that agility is the time taken to acquire the knowledge needed by the changed scenario. Current methods focus on imparting the knowledge relevant to the changed context. Hence, the time to acquire this knowledge and to effectively apply it to the new context is important. Consequently, there is a need for methods that ensure low effective latency and high agility in people competency development. In this chapter, the required 'ability to deliver' is developed and explained in the new or changed scenarios in software industries, ensuring agility in the ability to perform.

11.5 Research

Localizing Change—To Ensure Agility
It is traditionally understood in mature industries such as manufacturing that change effects the Operating Procedures of the changed product or work. It is also understood that the operating procedure is written following Deming's process step—product quality correlation (Ravi 2008).

These imply that any specification or modification of a software, product or service will cause a change or modification in the Operating procedures. Extending the idea that competence is simply the ability to execute the process steps or operating procedure, competency building can be made agile by bringing about a change in the ability of the person to execute changes in the operating procedure. This is the assumption that the person who needs agility in acquiring competence, will have the competence in dealing with the basic operating procedure.

11.6 Comparability of Software Products and Services

Most applications are similar and with small variations is an ensemble of various smaller reusable functional components. The total set of components that constitute an application will be large, but the unique list is a reasonable fraction of this larger subset. Variations in contexts, specifics and configuration items are there, but for these, the applications are simple to assemble. For instance, a Login functionality in software applications has UI components such as HTML Pages, JSP

tags or Strut tags, JavaScript Validations. Other aspects such as session management, exception handling, data querying and so on are common functions and are required in every web app. Hence, if competence building is dependent on such a breakdown, then the task is simpler. If it is know how the original project was executed and what competencies were included in it, the same basis can be used for changed competencies from one project to another. This concept has been discussed in detail by Ravi and Narayana (2012). They indicate that the suggested way to build competence is to understand and interpret the context in terms of process steps and thereby make competence a sustainable, and deliverable indexed capability. This approach is developed in the following sections.

11.6.1 The Proposed Training Model

Competence is a cluster of knowledge, process ability and skill and these are needed to build competency in ourselves to deliver the required output. The authors have (Ravi and Narayana 2012) detailed the model that is useful in developing assured competencies to build anything that is required. Every person who acquires competence must know the process steps that must be executed to realize the requirements of the application or deliverable. In simple words, process ability is knowing what process steps must be executed to realize requirements. These process steps are the steps that are defined in the operating procedure for developing the product or deliverable.

11.6.2 Operating Procedures

The operating procedures are the starting point. The operating procedure is really 'Standard Operating Procedures (SOP)' which are a detailed explanation of how (what steps must be used for) a policy/requirement is to be implemented. The details in an SOP standardize the process and provide step-by-step instructions of how to perform the task in a consistent manner.

> *MA-041.052002: Computer Worm Incident Handling Standard Operating Procedure*
> Original Issue Date: 02 May, 2002
> (*Source* My CERT: Malaysia Computer Emergency Response Team)

MyCERT received a growing number of computer worms incidents reported primarily since August 2001. There are more organizations that are spending endless hours repeating processes that are non-effective in completely eradicating the worm within the network due to uncoordinated effort within the organization.

Due to the nature of email-borne worms and/or internet-borne worms, which replicate via more than one means of propagation, i.e. via email, unauthenticated folder sharing and network scanning. MyCERT provides the procedure for

handling mass worm infection incidents especially within medium to large organization distributed networks. Most organizations in which the network is physically distributed in multilevel facilities, worm problems are difficult to eradicate, if the problem is not dealt with in a coordinated manner.

MyCERT suggests that organizations that are facing these problems to form an operation centre. The Worm Incident Handling Standard Operating Procedure is as depicted in Fig. 11.1.

Standard operating procedures (SOP) upfront are not a common practice in the software or IT industry. This industry follows guidelines when needed, but the operating procedure for the routine work is largely subjectively understood and followed, but rarely documented. The advantage of such an SOP is that it enables quality, reuse and all risks are well handled by defining the way the work is done or programs are done.

Competency, as stated earlier is being able to execute the operating procedure correctly and in time. In the approach to competence building known as 'Vegam', the competencies needed are identified using a product breakdown structure and the operating procedure that must be used to build each of these requirement slices or competencies are also identified. When it is possible to execute the steps correctly and do it in time, one is competent to execute the requirement.

11.7 Leveraging Operating Procedures to Build Agility in Competency Building

When operating procedures are written for developing a product or a service, and when it is known that a different product or service has to be built, another operating procedure has to be written since the qualities, outcomes and productivity needed will be different for both. If the products are similar and both are web applications, then the extent of change will be small. The differences will then be visible in the operating procedure and on studying them, it will be possible to identify the differences and build competence to execute changes. The process will be fairly simple. However, the software industry does not build SOPs and relies on individual knowledge and content based training to handle the new competencies that are needed.

However, in view of the non-availability of the SOPs, the Vegam method of competency building uses the product breakdown structure to identify the changed competencies needed for the new role. Vegam, using this approach, defines sets of reusable steps and ask the trainees to execute the steps. The reusable steps are in the form of competency assets (CAs) and they can be executed to build the needed competencies. They mainly contain process steps, and a measuring framework to check if the person has actually gained the necessary competence.

In case of a change scenario, operating procedures for both the deliverables are compared and the competency needed for both are identified independently.

Computer Worm (Virus) Incident Handling Standard Operating Procedure

- Receive Report from users within organization
- Confirm type of worm/virus
- Form a centralized operation centre in which all departments within the organization can report to
- Analyze worm/virus and verify removal steps
- Alert all users to report similar worm/virus incident to "operation center"
- Identify all computers within loca that are infectedl network
- Disconnect all infected computers from the network
- Prevent mail server from relaying worm infected emails
- Scan to find if there are any more infected computers
- Repeat to identify and isolate infected computers until verified that all infected computers are isolated
- Clean all infected computers in standard mode from worm/viruses.
- Delete/clean infected files based on relevant Security Advisory
- Restore all relevant date and applications
- Reconnect the computers to the network
- Remove network folder/file sharing or add password to folder sharing
- Apply relevant vendor patches
- Update all antivirus (AV) virus list on gateways, servers and clone AV

Fig. 11.1 A typical operating procedure. *Source* My CERT: Malaysia computer emergency response team

The differing competencies are the ones which need to be developed. Figure 11.1 depicts how change is localized in the SOPs, and only a few slices of process steps need a change. This way competency development can be done quickly for changed roles.

11.8 Vegam as an Approach to Agile Competency Development

Vegam (Ravi and Narayana 2012) provides the structure for a Product identifying competencies. Figure 11.2 a snapshot of the offering competency map (OCM). A competency menu can be extracted out this OCM and the needed competencies for a role. The changed competencies in the new project will be identified and the needed competencies are then organized to meet the change.

11.9 Pilot Analysis

The authors have used this pilot approach in a number of project scenarios. One such instance is mentioned here for validating the model and its efficacy. The Pilot shows the case of a team of people trained in basic Java using the Vegam approach, moving to a new project. The competency change was done and the benefits realized have been depicted here.

Offering Competency Mapping (OCM) for Basic Web Applications

Offering	Sub-Domain-1	Sub-Domain-2	Re-usable techniques			
			GUI	Action Handler / DD	Middle Tier	Back-End
Development	Web-App Development	Login and Security	Create HTML Page	Session Management	Password encryption / decryption	Query to validate login
			JavaScript validations	Service Integration	Database connection Management	Dynamic menu generated from database
			JSP Tags	Redirection to appropriate view	Exception handling	
			Struts tags in JSP	Exception handling	Connection Leakage	
			JSTL / Core tag libraries	Filters		
			Post method	Role declaration in DD		
				URL Patterns in DD		
		Create / Save new data	Create HTML Page	Capture request parameters and populate DTO as required	Database connection Management	Query / Stored procedure to insert data
			JavaScript validation	Reading property files	Exception handling	Throw exception in case of duplicate records
			JSP Tags	Session Management	Keeping database records in VO.	Dynamic form fields fetching from database
				Service integration	Connection leakage	
				Exception handling		
				Redirection to appropriate view		

Fig. 11.2 The offering competency map or identifying competencies needed by the changed scenario

Table 11.3 The list of competencies

Competencies possessed	New competencies needed
Connection leakage	Build SOAP-based Web Service and mapping data objects
Create HTML page	Capture selected products and populate list be sent to service. Map the response from service call, exception handling, redirecting to appropriate view
Database connection management	Map the response from the service call
Dynamic form fields fetching from database	Redirecting to the appropriate view
Exception handling	Create a details page to show complete product details
JavaScript validations	Create an HTML page
JSP Tags	Create a JSP page to see available products
JSTL/Core tag libraries	Database connection management
Keeping database records in VO.	DB configuration (Spring)
Post method	Dynamic form fields fetching
Query/stored procedure to insert data	Exception handling
Redirection to appropriate view	Integrate with DAO Layer
Service integration	JavaScript validations
Session management	JSP Tags
Struts tags in JSP	JSTL/Core tag libraries
Throw exception in case of duplicate records	Keeping database records in VO.
	Post method
	Product details, read properties files (product information)
	Query/stored procedure to insert data
	Redirection to appropriate view
	Service input object validations
	Service integration
	Session management
	Session management, sending the product details as input to service and getting response
	Struts tags in JSP
	Throw exception in case of duplicate records
16 Competencies	26 competencies

Table 11.3 depicts the competencies needed by a Java/J2EE trained trainee who has to work on a project that uses SOAP-based Web services. The competencies he/she possesses are those of simple J2EE and the transition is huge. The associate participated in knowledge training sessions in order to learn advanced SOAP and Web Services. This approach that has been discussed and depicts that out of 26 competencies he already knows 16 and some have been stated repeatedly. One

Table 11.4 Impact of using Vegam over traditional approach

Impact of using Vegam over traditional methods		
Induction time	Vegam-based approach (No. of days)	Traditional approach (No. of days)
Classroom training	15	15
Mentoring support		15
Hands on work		15
Vegam-based competency building (@2 days per competency for $26 - 16 - 3 = 7$ competencies)	14	
Net benefit	29	45

competency is stated three times in the competency menus. Hence, the associate has to work on seven competencies only on the Vegam method.

Table 11.3 depicts the list of competencies needed by the shift of trainees.

11.10 Effective Agility

Improved agility arises as a result of the reduced induction time. This is largely due to the competency identification as a section of the operating procedure. In this way, the number of competencies that the person has when he completed Java competency using the Vegam approach were 16 and the new role needed 26. Of these three additional competencies were repeated. This saved time by approximately 30 %. The details have been provided in Table 11.4.

11.11 Conclusion

The understanding of competency and the focus on knowledge are the key factors for inducting people into projects leading to long induction and learning periods. Not understanding the significance of the operating procedure in the development of products and systems has lead to lack of effectiveness and resulted in a long time being needed for effective induction. This research has enabled identifying competencies that are derived from the operating procedure and resulted in training and development process being developed that has been effective in its deployment for over 1200 trainees. The success rate has been encouraging and it is now being planned to extend this to softer competencies and thus make the induction process even more effective.

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Part III
Flexibility and Internationalization

Chapter 12
Rethinking Business Models for Flexible Configuration: Lessons from Disruptive Innovations at the Bottom of the Pyramid

Samir Ranjan Chatterjee

Abstract Since the path-breaking contributions of Prahlad (The fortune at the bottom of the pyramid: eradicating poverty through profits, 2005) and his associates in lifting the lives of people, at the "Bottom of the economic Pyramid" (BOP), scholarly debate around the innovative delivery of social value by large corporations wanting to maintain and build their business success, have been gaining ground (Kolk et al., Bus Soc 53(3):338–377, 2014; Radjou et al., Jugaad innovation: think frugal, be flexible, 2012). It has been argued that an estimated population of four to five billion people earning less than US $2 a day needs urgent and innovative solutions emerging from alliances and collaborations of government, business corporations, NGOs and communities. These collaborations centre on the development of a new mindset where flexibility of a co-creation can be achieved through the mastering of new capabilities by all stakeholders (Ansari et al., J Manage Stud 49(4):813–842, 2012). Many of these capabilities have now become entrenched in the strategic platforms of companies like General Electric, Nestle, Unilever, Danone and a number of others. Nomenclatures such as frugal, jugaad and disruptive have become commonly used phrases in these scholarly explorations of flexible configurations of the newer models and mindsets of business. This chapter draws on recent corporate experiences in innovation in unmet need of the BOP market and argue for a metanarrative of flexible capacity building in delivering sustainable outcomes. The search for a grand narrative essentially lies in the ability to overcome mindset traps not only in the corporate arena, but also in the stakeholders like policy makers, NGOs and local communities.

Keywords Bottom of the pyramid (BOP) · Capability approach · Disruptive innovation · Stakeholder alliances

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12.1 Introduction

The phrase, "Bottom of the Pyramid (BOP)" was used for the first time in 1932 by US president Roosevelt in his radio addresses emphasizing the importance of rebuilding the capability of the nation from the bottom-up. Focus on this bottom of the economic pyramid received wider attention with the publication of the 2005 book entitled, "The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits" by C.K. Prahlad. Recent years have seen his seminal idea receive extensive research attention from management scholars around the world. The metanarrative emerging in the BOP literature has been anchored on the development of flexibility in capacity building, wide recognition of the role of market-based solutions, the building of partnerships with stakeholders like NGOs, and the gathering of social capital. The central thesis of reconciling profit objectives associated within an enterprise-based market system and poverty attention has now been enriched and extended much further still.

The mindset of 'bottom to the top' rather than 'top to the bottom' has underpinned this transformation in approach. Interlinking the creation of social value with the creation of corporate value and success needs this 'flexibility' and calls on the blending of ideas from diverse disciplines. Never before has the discipline of management absorbed so many diverse insights and perspectives from so many fields such as sociology, philosophy, development studies, anthropology. This enriching cross-breeding has allowed many companies to innovate products, processes and services in a disruptive way creating real outcomes in poverty alleviation.

As it is estimated that at least four billion people inhibit the bottom tier of the global economic pyramid where their per capita income does not exceed beyond US $2.5–$8 per day, remaining engaged only at the top tier of the economic pyramid is no longer an option for corporations around the world. Serving the needs of these people in a way that is contextually relevant, environmentally sustainable as well as economically viable is the most critical challenge before managers, lifting billions of people out of poverty and enabling them with the capability to become social participants can only be possible with this grand alliance and new metanarrative of corporate intervention. Searching for new ideas of leveraging innovation with limited resources therefore has become an imperative not only in developing but also in developed countries.

In his 2007 book titled "Capitalism at the Crossroads" Hart redefined the role and responsibility of business in terms of its unambiguous connection with society and sustainability. He argued that the twenty-first century capitalist system needs to play a major role in overcoming the persistent poverty and marginalization of the vast majority of people (Hart 2007). It has been argued that the mainstream concepts and precepts taught in business schools around the world apply only to a mere 14 % of people, thus excluding the 86 % of the population in the developing world (Mahajan and Banja 2006).

In every sphere of products, service deliveries, distribution and financing this disruptive thinking is able to open the window of value creation as well as value capturing opportunities. It is interesting to note that the estimated market size of BOP contributes a US $5 trillion global market while the relatively wealthier middle section of the pyramid, comprising 1.4 billion people with per capita incomes between US $3,000 and US $20,000, represents only about double its size.

This chapter explores a range of both possibilities and challenges facing managers as they embark on turning around dependence on largely urban, well served and fiercely competitive arena to the currently very poorly served, uncompetitive and relatively inefficient sphere of BOP.

12.2   Capacity Building at BOP Level Through Social Embeddedness

Social embeddedness can be defined as the ability of an enterprise to leverage its social and institutional connections. A BOP entity may become socially embedded when it is able to build its capacity to harness the local social capital and human resources as well as its ability to innovate and deliver value to the building of indigenous capability. An embedded organization demonstrates an osmotic capability of grassroots learning and ability to experiment and innovate. For example, the energy and healthcare needs in the BOP context could be embedded in accordance with Sustainable Development Goals for 2030 (previously the Millennium Development Goals) at the global level as well as contextual realities of the BOP platform (Goyal and Sergi 2014).

The consumption dominated 'market ideology' currently generates managerial literature that is embedded in top–down 'organized market' dynamics. However, social embeddedness is essentially a 'bottom-up' approach; where the challenge of subsistence is characterized by deep and wide poverty, an absence of infrastructure as well as wide cultural variations (Chatterjee 2009). High levels of illiteracy, lack of vocational training, extensive bureaucracy and corruption create challenges for any organization to become engaged. But not becoming engaged is also not a choice given such an overwhelming majority of the population cannot be left poor for ever. Companies that have been associated with the top tiers of the economic pyramid need to gain local legitimacy and trust before they can be effective players in the BOP arena. Social embeddedness is the approach that many of the successful companies have found to be an effective vehicle for this to occur (Hahn and Gold 2014).

Though the implicit impact of the BOP market presence has been felt by global and local business for some time, its strategic imperative is only unfolding in recent years. The challenge of capacity building through context relevant solutions has drawn a staggering amount of interest amongst traditional MNCs and many worthwhile interventions have been showing encouraging outcomes. Interestingly it is

not just innovations in processes, products and services that have created this optimistic scenario, but many long-term longitudinal case studies provide a broadening of principles and practices of BOP. For example, a 50 year association with marginalized artisans of rural India has made the company "FabIndia" an exemplary organization contributing to capacity building at the BOP level (Ramachandran et al. 2011). The original BOP precepts formulated by C.K. Prahlad where boundary conditions were defined in terms of 'affordability', 'acceptability', 'availability' and 'awareness', have now been broadened to include many other attributes of enterprise and innovation in the case of 'FabIndia'. In the well-known case of *ITC's e-choupal* the concepts of empowering farmers was again possible through extensive innovations and collaborations. The initial ITC agribusiness hub of "Choupal sagar" at Sehore about 40 km from Bhopal generated a physical infrastructure of rural hyper-markets offering multiple services such as sourcing, training, soil testing, health clinic, cafeteria, banking, investment services, fuel stations provided a completely new strategic platform for the company to become engaged in a world they were unfamiliar with only a few years ago. The idea that farmers could receive such a service where selling their products, banking the cash received, insurance and education as well as a collection of required seeds, pesticides, fertilizers and diesel fuel on their return journey to the village after selling their goods has had a game changing impact on the mindset of the poor.

The exemplary case of ITC in India demonstrated how the "old" functionaries could still be used in a metanarrative of grand alliance referred to in the earlier section of this chapter. For example, the traditional village level "middlemen" who controlled the old "*mandi*" (village agribusiness hubs) were incorporated into the e-choupal as coordinators playing a highly critical role of service provision at the grassroots level. The old middlemen have been retrained to become coordinators of storage, transportation and related logistical support.

These two examples from India show how social embeddedness can create an enabling context for the BOP producers rather than considering them just as "consumers" as the earlier conceptualizations suggested. The embedded flexibility of managerial mindsets can inevitably encourage a culture of entrepreneurial dynamics in BOP communities. This in turn, can trigger enhanced skill levels of BOP participants as well as increase their awareness, affordability and acceptability of new capabilities (Sinkovics et al. 2014). Figure 12.1 presents a model highlighting this theme. The four quadrants of the model attempt to capture the trajectory of the journey of an enterprise in gaining social embeddedness through capacity building. Here, the old paradigm of gaining market entry to the unserved market moves through various stages of innovation to arrive at a transformed mindset where flexible capacities have been fully gained.

A review of literature in this area of capacity building through social embeddedness at the local level suggests a number of key agendas. The main emphasis of the literature appears to be anchored on maintaining the prevalent cultural values and lifestyles of the poor. However, new capacities can only be enhanced by building upon these traditions a layer of flexibility and choice (Hart and London 2004). The key agenda to focus on in this area may be listed as

Fig. 12.1 Achieving social embeddedness model

	Value capturing opportunities at BOP level	
High	*New Paradigm*	*Extending Boundaries*
	Extending capacity to innovate & engage	*Success in combining profit goals & social goals.*
	Old Paradigm	*Gaining Capability to be Socially Engaged*
	Selling products to the poor	*Mindset transformation in developing human capital & entrepreneurial capacity*
Low		

Value adding scope for the organization

Value capturing opportunities at BOP level

First, there is a need to focus on flexibility of strategic intent and platforms. BOP initiatives around the world have created the need for managers to have a more nuanced understanding of this segment of the market. The implicit capitalistic assumptions of market are very different from the profound and divergent taxonomies needed to become engaged. The key thesis remains that no improvement to the economic lives at the BOP can be achieved without enabling their capabilities.

Secondly, there is a need to build broad networks amongst the stakeholders like governments, local communities, NGOs and other national and global partners. The main purpose of this approach lies in the multi-faceted opportunities of value capturing. For example, the local knowledge and track record of organizations such as Grameen enterprises in Bangladesh was an essential ingredient of success for BOP enterprises like Grameen Phone (partnered with Telenor from Norway) and Grameen Danone Foods (partnered with Danone Foods, France). In both cases the reconfiguration in terms of their products, processes, supply-chains and distribution approach followed the model presented.

Thirdly, the key to achieving this embedded approach lies in disruptive innovations. The unmistakeable shift in priorities of many global enterprises towards the unserved needs and aspirations of low-income segments not only in developing countries but also in pockets of affluent societies has generated an encouraging 'learning need' in a wide range of commercial, social and other organizations. The most successful new technology to reach the BOP arena includes examples such as mobile phones in Kenya, where the conventional model has been totally reconfigured with features and attributes adjusted to the cultural and economic context of a new generation of demographics.

The inclusivity was not only aimed to reach out to the marginalized poor but also involving the poor in the development of the products. The other aspects of embeddedness focus on the awareness and ability of the poor so that those capabilities are created for them to be able to absorb innovations. The vast majority of scholarly

articles as well as case studies in the area of BOP continues to assume the poor as targets for products and services rather than partners and co-creators of their destiny. The flexible business model presented in Fig. 12.1, however, is not offering the existing products in smaller packaging or with modifications of functionalities but the adoption of a fresh business model where co-creation dominates the culture of collaboration. Nobel Prize winning economist Amartya Sen suggested, this tweaking of functionalities does not endow the BOP with an enhancement of their 'capability to function' in terms of choices and opportunities (Sen 2003).

12.3 Including Those Who Have Been Excluded—The Role of Innovation

It was pointed out earlier that the entrepreneurial, instrumental and firm centred poverty alleviation approach of Prahlad has now been revised and extended to signal "creating a fortune *with* the base of the pyramid" rather than creating a fortune *at* the BOP. This *shift* in focus places much greater emphasis on the inclusion of those who have been excluded. Amongst these a number of pluralist framings, innovations and partnerships have been gaining attention in recent years (Lim et al. 2013). Innovation at the resource constrained context at the Bottom of the Pyramid has become a central area of focus in recent years termed variously as 'frugal innovation', 'reverse innovation', 'jugaad innovation' and 'inclusive innovation'. As such they offer a diversity approach in exploring how collaborative solutions to social inclusion can be offered along with corporate success. A number of powerful critics argue that these frameworks are a romanticisation of poverty and the poor. They ignore the roles and responsibilities of the state as well as being a proxy promotion of post-colonial power by MNCs (Karnani 2011). The flexible business models and non-traditional network building need to be augmented through new pathways of including those who have been excluded from participating in the economic activities brought about by global integration. Christensen (1997) suggested that the pathway of disruptive innovation was ideally suited to the 'Base of the economic pyramid' context. His argument was that technological innovation with initial low-end products offer completely different value propositions in terms of benefits over time could respond to the twin challenge of poverty alleviation as well as sustainability (Christensen 1997). The two opposite propositions one in terms of turning impoverished people into consumers and the other as impoverished people becoming entrepreneurial producers need an integrative third way. The dominant perspectives of disruptive innovation driven not only by the "outsiders" but also by leading "insiders" may provide the integrative frame linking the paradigm back to the initial Prahlad formulation of affordability, acceptability, availability and awareness. This *"Third way"* approach emphasizes not only the capability development at an individual or a community level focus but also at the most resourceful MNE corporate context, where General

Electric gains the capability of offering health care at the remotest corner of the globe through its disruptive innovation or Danone can innovate inexpensive nutritional snack for Bangladeshi school children, capability development receives a "multiplier" as well as "accelerator" boost. Common challenges faced in translating these disruptive visions lie in the inadequacy of connection and coordination amongst value chain members, lack of cultural knowledge as well as political and institutional deficiencies. Hart and Christensen (2002) suggested the phrase "Disruptive BOP innovation" (DBI) as a pathway where new products developed through collaborative processes becomes available everywhere irrespective of their original invention site. Though these types of 'disruptions' can assist in the development of global capability, it may not intrinsically be sustainable or environment friendly at a theoretical level in spite of being highly impactful. For example, the Novartis BOP strategy for healthcare in rural India called "Arogya Parivar" is an illustration of this *"Third way"* of approaching BOP arena where more 'holistic' socio-cultural perspectives have been considered as the core of their strategic platform.

A number of scholars have contributed to the development of this inclusive model of disruptive BOP innovation. Conventional views of innovation have been often implicitly associated only with general economic growth. By contrast, inclusive innovation explicitly conceives economic and social development in terms of active inclusion of those who have been excluded in traditional developmental approaches (IDRC 2011). Foster and Heeks (2013) highlighted four distinctive elements of inclusivity in terms of capacity building. These elements were

- Inclusivity of relevance
- Inclusivity of process involvement
- Inclusivity of absorption capability
- Inclusivity of impact

Perhaps the fundamental difference of inclusivity with conventional understanding of innovation lies in balancing of concern between macro and micro level prioritizations. Obviously copying of the resource-intensive consumption patterns will come in conflict with sustainability concerns and limits of resource availability. Besides, in contrast to technological innovation, achieving flexible managerial mindset tend to be more subtle in nature. Achieving a dynamic and flexible managerial capability may be viewed as the key ingredient of capacity contributing to inclusive innovations. In addition, as different capabilities become important at different stages of the overall process, including those who have been excluded enhances the possibilities and boundaries. Kahle, Dubiel, Ernst and Prabhu argued that excluded populations of the BOP segment were not only affected by economic deprivations, but also denied access to democratic processes. They suggested, "Frugal Innovation" thus simultaneously creates opportunities for poor and improves their well-being in four important areas of income generation and security, education, infrastructure and distribution (Kahle et al. 2013, p. 228). Overcoming the "liability of outsiderness" will continue to persist with all market-based endeavours unless the 'democratic deficit' is addressed more boldly.

12.4 From "Tradition" to "Disruption": New Frontiers of Innovation at the Grassroots

The innovation of "yellow note pad" at 3 M, three decades ago was hailed as a triumph of a new approach to innovation. It was contended that 3 M Corporation had achieved a rare feat in balancing corporate processes, structure as well as collective knowledge and insights of its people. The 3 M model of innovation became known as 'Intrapreneurship' where creativity, autonomy and entrepreneurial culture were incorporated within the structure, process and technology of a large multinational. Traditionally 'innovation' has been conceptualized as a process of creating non-linear outcomes out of the dynamic interaction of 'idea', 'implementation' and impact. Though Govindarajan and Trimble espoused in the preface of their 2010 book on innovation that "Through Innovation, Business Organizations Can Change the World", (Govindarajan and Trimble 2010, p. ix), they had to write another book titled, "Reverse Innovation" within 2 years to explain how the world could be changed (Govindarajan and Trimble 2012). The key points that the authors made in these two books were that unlike all other activities in an organization, innovation activities were not repeatable. Unlike all other activities of innovation were also not predictable. These create the imperative of a new 'mindset' for innovation. In the case of reverse innovation, severe resource constraints, technological and capital constraints as well as the nature of required functionalities, features and benefits require very new ways of thinking. Whereas in the case of traditional innovation arriving at a breakthrough is the primary focus, disruptive innovation focuses on cost and resource limitation as the primary focus. Simplicity of product and process emphasizing 'capital' efficiency over 'labour' efficiency becomes the key focus. The key trigger of "locally" and designing from 'bottom-up' with the solutions to basic problems in this approach. As the key proponents of leveraging innovations in contributing to poverty alleviation like Hart and Christensen (2002), Hart and London (2004), Govindarajan and Trimble (2012), Prabhu and Jain (2015) have been emphasizing the Prahlad doctrine of affordability, acceptability, availability and awareness from the assumption of 'market' as provider of goods and services.

The focus of this chapter has been on a broader discourse where innovation is linked to social goals. Rather than considering the limited boundary of 'benefits' for stakeholders, emphasis is placed on the 'maximization' of social impact'. The illustrative case of FabIndia, Godrej, and Grameen Danone attest to this 'mindset'. This mindset encompasses multiple perspectives from diverse value orientations and local understandings. For example, CEMEX in Mexico, a manufacturer of cement successfully launched its involvement at the BOP by assisting families with income less than $5 a day to expand their homes by bringing together technical, educational, storage in a unique innovative way. In the case of 'Grameen Model' the established 'Mental Model' of providing loans only to men with collateral was replaced by loans to women in poverty with no collateral. These innovations were primarily aimed at social goals. General Electric (GE's) reorientation of the innovation mindset has been an exemplary lesson in this context. They have

been able to introduce about thirty "breakthrough" products that contribute to social goal as well as corporate goals. One of these breakthroughs has been their path-breaking involvement reducing child mortality in rural India. Traditionally GE supplied incubators for 'pre-term' babies in wealthy private hospitals in India and held a comfortable market size. In responding to the challenge of assisting poor hospitals, innovative solutions could not be achieved by 'de-featuring' their sophisticated 'multi-function incubators' for a lower value-adding and lower priced alternative. In rural India, for example, pre-term babies were kept warm with high watt lamps (usually 200 W) and GE built their solutions ground up from this very elementary product called, 'Embrace Infant Warmer'. This "Embrace" was innovated in partnership with a San Francisco-based non-profit organization. The critical need to improve child mortality was responded with a 'new mindset' and partnership devised a 'small bag' with a wax regulating the temperature of the baby. The wax is stored inside a pouch inserted within a nylon sleeping bag which could be melted by an electric heater or hot water.

The unleashing of transformative technologies does not comprise universal processes as BOP markets differ not only across the world but also within a country. The problem of urban BOP pockets may be very different from the approaches for rural margins of subsistence. An illustrative model presented in Fig. 12.2 attempts to capture this challenge from a paradigmatic perspective.

Figure 12.2 attempts to highlight that the primary attention to the context and culture is the most significant element in frugal innovation challenges. For example, it was the perceptive understanding of the rural poor in Bangladesh and a deep immersion in culture that prompted the massive success of the Grameen Model in Bangladesh (Yunus 2010). It has to be remembered that while frugal innovation emphasizes innovation under resource constraints, reverse innovation signals a new paradigm where innovation from low-income contexts become successful in wealthier markets (Pansera and Owen 2015).

The key challenge here is not innovating products or services either for the BOP markets or from the BOP for richer segments. In order for organizations to innovate business models especially adaptive to the BOP markets, for example, the active engagement of partners and the co-creation of solutions is required. This calls for a transformative shift in managerial approach. As Lin et al. (2015) argued, "in contrast to technological innovation, management innovation tends to be intangible and tacit in nature, with lagging and inseparable results" (p. 13).

Fig. 12.2 Mindset reorientation in disruptive innovation

Frugal/Disruptive Innovation

↑

Aligning BOP Producers/Consumers/Market Networks
(example: E-choupal)

↑

Building Partnerships for social value
(example: Grameen Phone)

↑

Local Knowledge/ Cultural Uniqueness
(example: Grameen Bank)
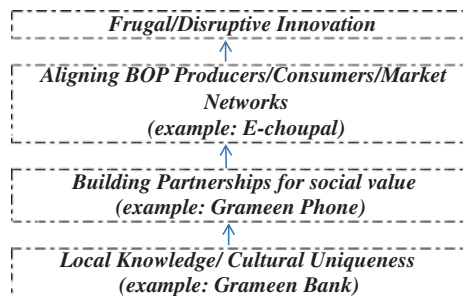
12.5 Illustrative Cases

(a) Godrej Chotu Kool in India

This innovation guided by Professor Christensen with his Indian colleagues attempted to provide refrigeration facilities in remote places with very hot climates. It has since been popularized and marketed at the bottom of the pyramid by a much respected Indian company called 'Godrej'. Engineers of Godrej spent considerable time visiting 'end users' in remote locations to understand their need and again revisiting with "prototypes" to collect feedback. The context of this case need to be understood in terms of the staggering reality that more than 70 % of Indians live in rural areas where the availability of electricity is either very limited or non-existent. People live in very humble houses with restricted space for large items like a normal refrigerator. There is a massive spoilage of food nearing 35 % due to the absence of refrigeration facilities. In contrast, the rate of market penetration of standard refrigerators in India is still limited to about 20 % in urban areas and 2 % in rural market. This disruptive product operates comfortably on a 12 V battery power and if necessary it can also work on inverter or even solar power. It can usually keep the daily necessities between 5 and 15 °C. This product initially launched in 2010 at a price of US $50–$60 and has undergone continuous refinements over the past 2 years. As a product it has also evolved and is now becoming popular with small village-based entrepreneurs involved in businesses such as milk, cold drinks, water, snacks and flowers. The most important contribution to remote communities has been its use by chemists and primary health care centres to store vaccines and other health-related products. This product is one of the most interesting examples of community led distribution system. Godrej has joined hands with NGOs and other groups with local knowledge. A NGO called "Swayam Shikshan Prayog" has been contracted to be the channel partner on a commission basis to ensure its distribution to the relevant market segment.

(b) Capacity Building at the Grassroots—Innovation at FabIndia

The iconic case of FabIndia provides a unique example of innovative engagement at the BOP level over five decades. The company works with over 40,000 weavers and artisans mostly in remote villages in empowering them with creative assistance and brand power. The company was established in 1958 by a British textile adviser of the Ford Foundation. The initial idea was to work with village-based artisans in maintaining their rich traditions and reach the global market through an alliance with a British company called 'Habitat'. Habitat was the major customer of FabIndia buying up to 65–70 % of the products. This unique 'brand value' provided by the prestigious 'single product' stores in UK and India gave a new learning opportunities to artisans and weavers. They not only were able to rise above the subsistence economic life but also used different local materials, designs and products. Besides textiles, the company had a successful foray into furnishings and furniture, organic herbal products. Recent research suggested "any BOP

intervention that reduces the effective distance between BOP producers and the factor markets by creating resource channels into BOP or by lowering their burden of credentials will help enhance their access to factor market" (Ramachandran et al. 2011 p. 36). FabIndia exports to about 35 countries and has stores inSingapore, Dubai, Italy and Nepal. Currently their product portfolio comprises of 70 % in garments, 25 % in home furnishings, and 3 % in body care and a very small percentage in the organic food market. With the rise of a new fashion-conscious middle class, these portfolios are set to change. It is expected that new environmental and 'lifestyle' concerns will bring a new group of BOP producers to the organic foods markets. Cultural change brought about by increasing participation of women at work, women western wear would also change.

The FabIndia case demonstrates a business model where poverty alleviation, capacity building at grassroots level, innovation, corporate success as well as a number of other desirable outcomes have been achieved through a long-term commitment of a local enterprise which aspires to eventually become global. The social goals of generating employment in villages, empowerment of women, human capital enrichment as well as preservation of Indian culture heritage are remarkable and impactful BOP interventions.

12.6 Conclusion

A number of new strands have been added to the seminal ideas of market-based solutions in alleviating poverty at the base of global economic pyramid. The idea of building flexible capacity for all concerned espoused in this chapter is one of them. The perspective of building a more broad capacity at the bottom of the economic pyramid integrates market creation with a number of other key developmental parameters. Prahlad's focus on innovations in products, services and distributions through the intervention of grand alliances of multinational companies, NGOs, local communities and government is being re-evaluated to include culture, context, sustainable ecosystem and above all the philosophical ideas of human values of 'capability'.

The main goal of this chapter has been the analysis of role of disruptive innovations in generating capability at the base of the economic pyramid. In the cases summarized in this chapter, this theme was considered as the key driver. Instead of solely emphasizing the low-end market entry by resourceful and profit seeking big corporations, alternative pathways have provided new directions in management research. It is clear that the challenge of poverty alleviation needs multi-pronged approach and the BOP context is increasingly seen as a new vehicle of corporate renewal as well as incubator to social progress as well as capacity to synergise expertise located in diverse sectors through co-creation.

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Chapter 13
Strategically Flexible Capacity Building Driving Emerging Markets Internationalization

Soma Arora and Mahim Sagar

Abstract The research study examined the influence of capacity building in select areas of—skilled workforce, cumulative learning, marketing networks and information technology, on the degree of internationalization amongst Indian firms. The unit of analysis was firms engaged in exporting to developed western markets. Data were gathered through a self-administered survey directed at Owners, Promoters, and Heads of International Business firms involved in strategic decision-making of 200 Indian firms. The firms comprising the sample were drawn from a wide cross section of manufacturing industries including—textiles, apparel and clothing, consumer electronics and pharmaceuticals companies. An array of scaled variables were reduced to meaningful factors in capacity building through EFA, Exploratory Factor Analysis, technique. Thereafter, a CFA, Confirmatory factor analysis through SEM, structural quation modeling was conducted to validate the factors and test the psychometric properties of the variables under consideration. The path diagram, obtained using AMOS software program, indicated how strategic flexible capacity building led to higher degree of internationalization. The findings indicated that capacity building in select areas of, which were primarily factors involved in ensuring flexibility were key to attaining higher levels of internationalization amongst Indian firms.

Keywords Capacity building · Cumulative learning · Internationalization · Manufacturing industries · Marketing networks · Strategic flexibility

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13.1 Introduction

A firm is believed to have strategic flexibility if it is endowed with the capability to rapidly adapt to changes in the external environment. The organization is often faced with major changes in the environment, which mediate quick change of resources, commitment to new courses of action, and to identify markers that can restore the firm back to previous commitments when the external environment goes back to it's initial state. Strategic flexibility is considered as a complex phenomenon wherein the measures can be conceived both before and after triggering of events. Therefore, strategic flexibility can be construed as an offense as well as a defence mechanism.

The principal kinds of strategic flexibility are based upon the following:

- Time taken to respond to change in external environment
- Viable options available to the organization
- Perspective and vitality in establishing strategic direction
- Establishing the core where flexibility is created.

In this chapter, the focus of strategic flexibility would lay on perspective and flexibility created on account of external challenges. This is particularly significant in the context of emerging markets like India, as these markets are very different from their western counterparts. Hence, successful internationalization in emerging economies is largely dependent on their ability to react to rapidly changing external environmental situations. For instance, threats may arise from decline in product margins or entry of a new player in the market with a differentiated product. This is the cause for an upheaval or change in the external environment. These changes would necessitate reallocation of resources to different areas such as R&D, sales force, manpower, etc., in order to maintain its current position in the market. The firm's ability to redirect its resources or react to sudden changes in demand, competitor moves depend strongly on the firm's capabilities. It was felt that directed capacity building could lead to strategic flexibility as a source of competitive advantage for the emerging market firms and would, therefore, have considerable influence on the firm's level of internationalization.

The context of internationalization in Indian firms has always suffered from a volume-based perspective, where the focus is on quantum value of exports rather than the process and degree of internationalization performance. It was felt that a strategic study by way of the firm level capabilities would pave the way for enhancing the internationalization performance of Indian firms. The timing and context of the study is very crucial as India is one of the emerging nations standing on the threshold of a giant leap curve, with the potential to carve out a new trajectory for growth and development. Strategic flexibility, as the new *mantra* for competitive advantage, would add fresh perspective to the performance of internationalization amongst these firms.

13.2 Review of Literature

Flexibility, is an organization's ability to react and accommodate uncertain changes in the environment (Aaker and Mascarenhas 1984). It is so critical that it has become a fundamental assumption of research on competitive advantages for SMEs (Fiegenbaum and Karnani 1991; Volberda 1996). Research has examined organizational flexibility from various perspectives, such as strategic (Tolstoy 2012), structural (Ackroyd 1995; Chaston 1997) and operational (Chappell et al. 1993). However, prior research tends to treat the effects of different types of flexibility as homogenous. It was only later, that studies (Zhang et al. 2014) proved the differing effects of the three types of flexibility on internationalization. In the context of internationalization, some types of flexibility may help companies to respond quickly to uncertain environments, customer needs and hence necessitate the need for diverse deployment of resources. It was found that (Zhang et al. 2014), operational flexibility depleted critical resources of the internationalizing Chinese firms leading to weakening of the competitive advantage and affecting the export performance of these firms. On the other hand, strategic flexibility influenced the export performance in the right direction and improved the competitive advantage of the Chinese firms.

Strategic flexibility refers to capabilities related to the goals of the organization or the environment, and involves changes in the nature of organizational activities (Volberda 1997). Strategic flexibility enables firms to tackle radical environmental changes that are highly unpredictable (Anand and Ward 2004) and irreversible (Rhenman 1973), such as a global economic crisis or the emergence of a breakthrough technology. Firms with strategic flexibility have greater capabilities to cultivate international networks. Relational ties with stakeholders in foreign markets are critical for emerging market firms, because these ties are the bases for relational competence and organizational learning. However, because these firms come late to the market, it is difficult for them to obtain a favourable network position in the existing network centred on incumbents (Lu and Beamish 2001). That is, incumbents have formed business contracts and organizational relationships with stakeholders already in the market. Emerging market firms have neither time advantages, nor the power to fight incumbents for relational resources. The liability of network outsider ship prevents them from exploiting their relational capability, and hinders organizational learning. Although emerging market firms cannot necessarily choose their relational ties, they can build ties through business activities in which incumbents are not yet involved. This type of business is usually one that requires some compromises regarding how business is conducted. The emphasis on fluidity of running a business cannot be under stressed (Sushil 2013, 2014). Strategic flexibility enables emerging market firms to exploit this type of opportunity fully. In addition, firms with strategic flexibility suffer less from inertia and tend to possess fewer deeply embedded organizational routines (Hannan and Freeman 1984; Autio et al. 2000). Firms with strategic flexibility have lower

costs and can react more promptly to meet tricky business requirements, through which they can build networks with more localized firms that are not yet tied to incumbents. With these linkages, emerging market firms can enhance their relational capability cultivated at home and obtain resources and information through organizational learning.

This opens discussion on capacity building as the foundation for strategic flexibility and hence competitiveness of the internationalizing firms. Different types of capacity had been identified in international marketing literature as affecting the degree of internationalization. What follows is a detailed understanding of the building blocks of capacity, so that they could be used in an empirical study. The concept of 'capability' is akin to atoms in a molecule responsible for creating the next level of strategic management, i.e. 'competencies'. The capability of a firm is manifested in various forms like: physical facilities, plant, premises, and skill set of employees, the abilities and expertise of top management (Madhok 1997). Capabilities are the firm's capacity to deploy these assets, tangible or intangible, to perform a task or an activity to improve performance, for example, the capability to offer excellent customer service is marketing capability or to develop new products is product design and development capability (Lorenzoni and Lipparini 1999).

Furthering export performance from developing countries by way of skilled workforce capacity building necessitated recruitment of personnel with—previous work experience in international markets; superior managerial capability from family background of achievement, control, independence, leading to mature internationalization (Ibeh 2004). Studies emphasised on managers trained with formal education (Morris and Lewis 1995) technical qualifications like B.Tech, B.E, enabling better grasp of country specific requirements. Demographics of top managers and other experiential networked resources were cited as variables promoting favourable international performance through skilled workforce capacity building. An interesting study on British Railways' organization resource planning indicated, knowledge of administration in a specific industry as valuable resource in efficient functioning of the company (Barlow 1996). Additionally, (Aaby and Slater 1989; Zou and Stan 1998) strategic intent have also been hinted as the underlying cause for organization resource building, leading to stronger overseas presence in world markets. A special state within the developing country of Pakistan indicated the role played by strategic human resource management in internationalizing behaviour of the organization (Adil 2015).

Capacity building through cumulative learning, is also known as experiential learning. Absorptive Capacity, (Cohen and Levinthal 1990) had been defined as "the capacity to absorb knowledge, which in turn is a function of existing knowledge in markets of prior experience related to customers, ideas and other feedback received in host countries". The study proposed a new approach to learning and innovation, which is vital to the internationalization process of emerging market firms. The concept of "psychic distance", i.e. degree of uncertainty over foreign markets could be overcome through greater knowledge and information about these culturally dissimilar markets (Johanson and Vahlne 1977) had

strong indications of accumulating task specific and location specific knowledge. The study of relatedness of products in case of joint ventures (O'Grady and Lane 1996) and matching organizational routines in case of transnationalisation of retailers (Treadgold 1988) reiterated the need for imbibing know-how from markets in which the firms are operating. The harnessed knowledge would enable the firm to overcome all inhibitions related to foreign markets and propel higher degree of internationalization.

Marketing capacity building included partnerships and alliances with international branded retailers, building support centres and service backup in overseas markets, opening resident sales offices and branches abroad, contracting direct agents or distributors abroad, opening own showrooms or retail outlets abroad, to move towards a higher degree of internationalization, (Thirkell and Dau 1998; Shoham et al. 2002; Madsen et al. 2007). The use of relationship constructs in forging international business partnerships is extremely important for high degree of internationalization (Styles and Ambler 1994). Relationship building in international marketing had swung from a situation of complete ignorance to over emphasis in recent years. Seemingly, it is an extremely important variable affecting the degree of internationalization.

The role of information has been examined in the disciplines of organizational behaviour (Kilman et al. 1983), management (Boisot 1998), marketing (Sinkula 1990) and even export marketing (Souchon and Diamantopoulos 1996). A conceptual model linking the use of market information to organization knowledge and finally to export performance (Toften and Oslen 2003) regaled the need for using technology in harnessing customer feedback, employee viewpoints enabling higher degree of internationalization. The use of information technology to manage large database of important stakeholders and monitor processes involved in international marketing like production, documentation, procurement, sourcing, strengthened the need for capacity building in this area. The order to delivery business cycle of an exporter depended on such processes which could lead or beat the system (Hart and Tzohas 1999). Delays and stagnation at any stage would be detrimental to the export performance of a company in the manufacturing sector, where seasons were very important (Jayalakshmi and Promod 2015). Using the ISM, i.e. interpretive structural modelling technique and further the TISM, i.e. Total Interpretive Structural Modelling, it was proven that ICT, Information communication technology improved the competitiveness of an oil refinery in state of Kerala in India. Information Technology was therefore one of the important factors that allowed emerging market companies to achieve higher degree of internationalization.

The above discussion therefore summarized capacity building into four principal areas—skilled workforce, marketing networks, cumulative learning, and information technology. The research question addressed in this chapter was: *Can strategic flexibility be the source of competitive advantage for achieving higher degree of internationalization amongst Indian manufacturing firms?*

13.3 Research Methodology

This study was based on an empirical investigation of firms involved in exporting to foreign countries from India. The sample of firms came from a wide cross section of industries including apparel and clothing, textiles, pharmaceuticals and consumer electronics manufacturing. The services and extractive industries were deliberately exempted from the study as the variables affecting capacity building in these industries were radically different from the manufacturing sector in the context of Indian exports. The manufacturing exports from India accounted for 44 % of the total exports in 2012–13. Hence, its importance in India's growth story could not be undermined and this sector was duly considered.

The exporters directory from FIEO, Federation of Indian Exporters Organisation, was used as the database for selecting respondents on a purposive sampling basis. The directory was divided into four zones—North, South, West and East of India with subdivisions into cities or towns within these principal zones. A non-probabilistic proportionate sampling method was used with representation of exporters in a fixed proportion from these four zones. The total number of exporting firms in these zones were different. Hence, it was decided that a fixed percentage of 1 % would be maintained from each zone such that a total of 200 firms could be finally represented in the study, out of the total of 30,000 firms included in the directory of FIEO. This way it was ensured that a heavily internationalized zone would be strongly represented in the sample and vice versa. The findings and inferences applied to all the zones universally.

In order to differentiate between firms of high and low degree of internationalization in India, number of years was used as a minimum order criterion. It was seen that (Cavusgil and Zou 1994) the performance of an export market venture could be suitably measured via several characteristics like strategic initiatives, profitability, objectives achieved over a period of 5 years. Conclusively, companies attained a higher order of performance after a period of 5 years in the study. Hence it was deemed suitable to use number of years as the grouping criterion for the internationalizing firms. However, in the Indian context, it was felt that 10 years would be a better splitting criterion as companies in a developing economy would be needing 5 years more than the usual developed counterparts to attain a discerning level of performance or mature degree of internationalization. Therefore, it can be said that Indian firms with 10 years or more in the process of internationalization would be classified as high degree internationalisers and those below 10 years would be the low degree internationalizers. Of the total sample size of 200 Indian firms, considered in the study, it was seen that only 20 firms exceeded the minimum 30 % criterion, and hence qualified as the highly internationalized firms, while the remaining 80 firms were locked into the category of lowly internationalized firms.

In these 200 sample organizations so identified, the Managing Director or Head of International Business (IB)/the Head of Production/Quality Control were only interviewed. In order to eliminate any non-response bias, the survey

was conducted through personal interviews only over fixed appointments. The response rate was 100 %, as all targeted firms were finally surveyed.

In order to conduct a survey amongst the Indian internationalizing firms a validated scale was needed for the study. The necessary construct development used previously engaging studies in emerging markets (Arora and Mittal 2011). The questionnaire so developed was pretested using a small sample of 50 Indian exporters in the manufacturing sector. The capacity building construct was finally made up of a thirty item five-point Likert-scale statements used to probe respondents' assessment (rating) of their firms regarding export-related capacity building (i.e. the extent to which they pursue new technological additions; development of work force; nature of learning at buyer–seller meets, search for export information, attendance at local/foreign trade fairs; and risk taking emphasis on current export returns versus long term marketing objectives). The respondents were asked to indicate their capacity building status through a five-point scale. A scale value of 1 indicated very low capacity building, meaning almost non-existent. A scale value of 5 indicated very high capacity building, meaning sizeable investments and steps taken towards capacity building. It was necessary to use this scaling method as companies were naturally averse to revealing factual data and figures on investments and measures taken for capacity building whereas, ranking their preferences or attitudes towards the dimensions of capacity building was not exactly disclosing their business strategy yet meeting the objectives of this study. This is an important feature of conducting a primary survey in an emerging market scenario.

13.4 Data Analysis

Exploratory Factor analysis was carried out to assess the unidimensionality of the variables and validity, thus suitability of the construct for capacity building leading to higher degree of internationalization amongst Indian firms. The variables in capacity building had been identified from the preceding section on the literature review. All items loaded as intended. The data were considered suitable for factor analysis as the Bartlett's test of sphericity was significant: $0.000 < 0.05$ and KMO measure of sample adequacy (0.890) was greater than 0.60.

The results obtained from Exploratory Factor analysis are summarized in Table 13.1. The presence of eight components with eigen values >1 explaining 79 % of total variance approximately were selected for naming of factors. A test of reliability for the eight factors through Cronbach's alpha was conducted and the values were found to be more than 0.7 in all cases. Therefore, items indicated were considered appropriate for study. The factor loadings for the variables and alpha values for each factor are shown in Table 13.1.

The eight factors so obtained were now named suitably based on a procedure of combining the variables loaded onto one factor, by first adding the statements together and then dividing by the number of statements to arrive at a composite measure for that factor. In this way, each factor could be used as an independent

Table 13.1 Factors for capacity building

Naming of factors	Alpha values for reliability	Variables	Factor loadings
Factor 1 NETWORK capacity building	0.762	Sales and distribution network through independent retail shops and showrooms for brands	0.797
		Distribution network through after sales backup and design centres abroad	0.774
		Capacity building through maintenance of own sales force, in foreign land	0.765
		Capacity building through fixed distributors and agents abroad	0.740
		Distribution network through tie-ups with retail chains abroad	0.726
		Marketing network through local advertising agencies in host countries	0.666
		Distribution network through resident sales office and branches abroad	0.643
		Distribution network through partnerships/alliances with other brands abroad	0.626
Factor 2 ORGANISATION capacity building	0.801	Suitable and conducive working conditions are adopted at factory premises	0.920
		Occupational hazards are duly acknowledged and compensated	0.836
		The level of skilled workforce capacity building through family background	0.770
		Child labour was not employed	0.700
		Skilled workforce capacity building through-technically trained professionals at officers level	0.669
Factor 3 SYSTEMS capacity building	0.877	The level of cumulative learning capacity building through international standards	0.877
		The level of cumulative learning capacity building through new technological advances	0.871
		The level of cumulative learning capacity building through— relatedness of products in case of Joint ventures	0.760

Table 13.1   (continued)

Naming of factors	Alpha values for reliability	Variables	Factor loadings
		The level of cumulative learning capacity building through—knowledge of acquired firm	0.658
Factor 4 PROCESS capacity building	0.699	Capacity building in product design and development process using information technology	0.874
		Capacity building in employee database management using information technology	0.742
		Capacity building through recruitments based on number of years in experience	0.728
		Capacity building in sales and distribution process using information technology	0.532
Factor 5 SOURCING capacity building	0.763	Capacity building in customer database management, using information technology	0.871
		Capacity building in procurement process, using information technology	0.823
		Capacity building in production process using information technology	0.677
Factor 6 TRADE capacity building	0.705	The level of cumulative learning capacity building through—task specific knowledge	0.886
		The level of cumulative learning capacity building through—new market information, rules, regulations	0.761
Factor 7 OPERATIONAL capacity building	0.778	Minimum wage rate conditions are adapted at shop floor level	0.855
		Safety of workers is not compromised	0.589
Factor 8 COMMERCIAL capacity building	0.757	Level of cumulative learning capacity building through Location Specific Knowledge	0.658
		The level of cumulative learning capacity building through—new organizational routines	0.592

variable in further data analysis. This composite independent variable therefore assumed the name of the factor which has been explained in the following manner.

The first factor was named as NETWORK Capacity building, extracted from component 1 which included eight variables with >0.6 factor loadings. All the variables were concerned with building capacity in marketing and distribution like retail showrooms, brand presence, maintenance of own sales force, partnerships so on and so forth. The value of the cronbach's alpha for this factor was 0.762, which was high and hence the factor was accepted for further analysis.

The second factor was named as ORGANISATION Capacity building, from component 2 which had five variables with >0.6 factor loadings all indicating capacity building in skilled workforce within the organization. All the variables selected pointed towards development of skilled workforce within the organization in various forms like—occupational hazards were duly acknowledged and compensated; child labour was not employed so on and so forth. The value of the cronbach's alpha for this factor was 0.801, which was high and hence the factor was accepted for further analysis.

The third factor was named as SYSTEMS Capacity building which had been extracted from component 3, which had four variables, all related to capacity building in cumulative learning from overseas markets. All the variables in this factor were concerned with cumulative learning in export markets through technological advances; adaption of international standards, knowledge of acquired firms so on and so forth. Application of international standards to any manufacturing process will automatically improve the systems, popularly known as S.O.P, Standard operating procedures in that organization for better export performance. The value of the cronbach's alpha for this factor was 0.877, which was high and hence the factor was accepted for further analysis.

The fourth factor was named as PROCESS Capacity building, derived from component 4 which had four variables. The variables here included capacity building in information technology used in production processes; sales and distribution process, employee database management; recruitment of personnel with relevant experience. The value of the cronbach's alpha for this factor was 0.699, which was high and hence the factor was accepted for further analysis.

The fifth factor was named as SOURCING Capacity building derived from component 5 which included variables that indicated capacity building made in improved methods through Information Technology in procurement, customer database management and production processes. It was seen that sourcing was a major area of concern in export performance and Information Technology capacity building in this area would greatly improve the overall supply chain of this sector. The value of the cronbach's alpha for this factor was 0.763, which was high and hence the factor was accepted for further analysis.

The sixth factor was named as TRADE Capacity building derived from component 6 which had two variables. The value of the Cronbach's alpha for this factor was 0.705, which was high and hence the factor was accepted for further analysis.

The seventh factor was named as OPERATIONAL Capacity building derived from component 7 which had only two variables. The value of the cronbach's
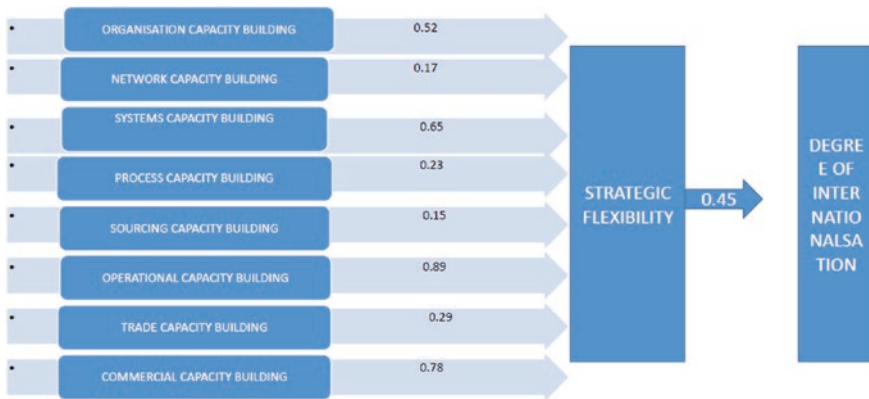
Fig. 13.1 Path diagram for strategic flexibility driven internationalization

alpha for this factor was 0.778, which was high and hence the factor was accepted for further analysis.

The eighth factor was named as COMMERCIAL Capacity building derived from component 8 which again had only 2 variables. The value of the cronbach's alpha for this factor was 0.757, which was high and hence the factor accepted for further analysis.

The eight factors so obtained from EFA was to be further used in model building through SEM, such that the relationship can be established between Strategic flexibility and degree of internationalization (Fig. 13.1).

From the path diagram it can be seen that commercial, operational, systems and organizational capacity building have the maximum influence on strategic flexibility which has a positive influence on the degree of internationalization of the Indian manufacturing firms.

13.5   Conclusion

The competitiveness of the Indian manufacturing firms has been truly manifested in the nature of capacity building leading to strategic flexibility in turn affecting higher degree of internationalization. A closer look at the capacity building factors will evince deeper managerial implications for these firms and set an example for others. The highest loading has been detected for operational capacity building which includes the variables enhancing competitiveness on shop floor like basic wages, compensation, safety issues for workers and such variables as affecting the productivity of the workers in manufacturing firms. It is worth noting here that Indian firms with targeted policies towards operational capacity building have shown greater strategic flexibility than others.

The second highest loading has been found in favour of commercial capacity building which includes variables like location-specific knowledge and new

organizational routines. It is evident that managers in international business need to ensure greatest understanding of the markets in which they operate to institutionalize strategic flexibility into the organisation. Location-specific knowledge would include country specific learning like local laws, political situation, cultural changes which can cause uncertainties and fluctuations in demand.

The next highest loading is in favour of systems capacity building followed by organisation capacity building. The systems capacity building factor was particularly strong on international standards and regulations along with variables affecting the workings of a strategic alliance through joint ventures or mergers and acquisitions. This is a very important dimension of Strategic flexibility as the success of the alliance has a role to play in higher internationalization performance of the firm. The adoption of certifications on ecological standards like OEKOTEX, GOTS are extremely important in apparel and textiles industries as the developed counterparts are taking these marks very seriously on the exported products.

The organisation capacity building factor consisted of variables relating to skilled workforce enhancement through provisions of good hiring and maintenance policies of blue and white collared workers. The emphasis is on employing professionally or vocationally trained personnel who can imbibe challenges fast making use of their training instead of relying on forces of nature.

Together it seemed that the four factors in capacity building combined a huge source of competitive advantage evident in the strategic flexibility experienced by the Indian firms. This positively affected their internationalization performance and led to higher degree of internationalization.

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Chapter 14
Global Competitiveness of Informal Economy Organizations

Sanjay Dhir and Sushil

Abstract This chapter presents a framework for informal economies in developing nations. It will explain linkages with the formal economies of both developing and developed nations as a function of national competitiveness. We develop propositions which explain how the dynamics and growth of the informal economy in developing nations are linked to the growth of the formal economy of developing/developed nations. The chapter illustrates the framework with the case of Jaipur Rugs and concludes with suggestions for future research in an under researched area of the informal economy.

Keywords Competitive advantage · Developing nations · Informal economy · Inter linkages

14.1 Introduction

Extant literature has described the informal economy as the: third economy, unorganized sector, parallel economy, shadow economy and the unregistered economy. Furthermore, the informal economy has become an integral part of developing nations. Informal employment in the non-agricultural sector comprised almost 50–75 % in developing countries with 65 % in Asia, 48 % in North Africa, 51 % in Latin America and 72 % in Africa in 2006 (Chen 2006). Of the total of informal employment in these countries, 30–40 % comprised waged employment. As per the ILO (2011) report, a large share of overall economic activity in developing nations comprises informally organized economic activities.

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As evident from above, the 'informal economy' is a driving force in today's world market for its tremendous economic impact. However, conceptual confusion concerning on the informal economy, nation's growth and its linkages with the formal economy still prevails within extant research (Portes and Schauffler 1993; Bangasser 2000; Guha-Khasnobis and Kanbur 2006). Existing views on the informal economy can be credited to three major research groups (schools of thought)—economists (dual economy school), sociologists (structuralist school) and policy scholars (legalist school).

The dualist economy school (Lewis 1954; Ray 1998) posed that the informal sector provides income for the poor and safety in times of crisis because the sector comprised marginal activities—distinct from and not related to the formal sector (Hart 1973; Sethuraman 1976; Tokman 1978; Santiago and Thorbecke 1988). According to this school, the informal activities exist because not enough job opportunities have been created to employ surplus labour, mainly because of the slow rate in economic growth and faster population growth rates (Marcouiller and Young 1995). The assumptions of this school were challenged by sociologists and policy scholars for three key reasons (Godfrey 2011). First, informal activity did not exist because of distortions in the formal economy; rather the informal economy predated the formal economy (Geertz 1963; Booth 1993; Turner 2004). Second, not every trade outside the formal economy was illegal and a number of trades were legitimate (Godfrey 2011). Third, money was the dominant mode of trade rather than the barter system in the informal economy. The *structuralist* school (Moser 1978; Castells and Portes 1989; Fortuna and Prates 1989; Maloney 2003) views the informal sector largely as subordinated economic workers that increase the competitiveness of large capitalist firms by reducing the input and labour costs (Polanyi 1957; Geertz 1963; Coleman 1988; Momaya 2013).

In marked contrast to the dualist model, the structuralist model opines that different modes and forms of production not only to coexist but are also interconnected and interdependent (Banfield 1958; Portes and Haller 2005). The *legalist* school (de Soto 1989; Becker 2004), views the informal sectors comprising micro-entrepreneurs who avoid costs, time and formal registration by choosing to operate informally. Furthermore, micro-entrepreneurs, owing to cumbersome and costly government procedures, will continue to produce informally (de Soto 1989).

According to Momaya (2012, p. 2), "India has a rich history of contributing to the world for centuries through responsible internationalization. A millennium perspective estimated percent share of India to the world GDP at 32.9 as compared to 26.3 for China and 10.8 for total Western Europe.dia seems to have sustained such high contribution for centuries. India was contributing about a quarter of world manufacturing output in 1750 and with much less damage to environment, as compared to the leading contributor of the last century. Less able to adapt to international forces, India's contribution to the world GDP dipped to about 4.2 % in 1950 as per a classic study by Maddison. The upward trend had been slow in the first half century of post-independence journey and can get a massive boost, if leadership in India can evolve right direction for industries, institutions and the largest youth population."

   The comparative understanding of the evolution of the informal economy, in developed and developing nation's contexts, thus becomes imperative, from a strategic management perspective, especially when the effect, magnitude and trend of the 'informal economy' are believed to be relatively different in both contexts (Mittal et al. 2013). Therefore, identifying the national factors affecting informal employment, linkages between the formal and informal economy and its effect on the economy of nations is the main objective of this chapter. Traditional management theories are used as a base to build a conceptual framework of formal–informal economy interactions in developed and developing nations. The role of government policies and context specific factors fostering the growth of informal economy in developing nations is also discussed. Furthermore, we conclude with some suggestions for future research.

14.2 Informal Economy Scenario

The ILO's *Global Employment Trends* (2011) report shows three marked characteristics of the informal economy for the developed and developing nation context. First, while the '*labour force participation rate*', for both females and males decreased in developed nations after the economic recession of 2007–2009, it was held constant in developing nations during the same period (Fig. 14.1).
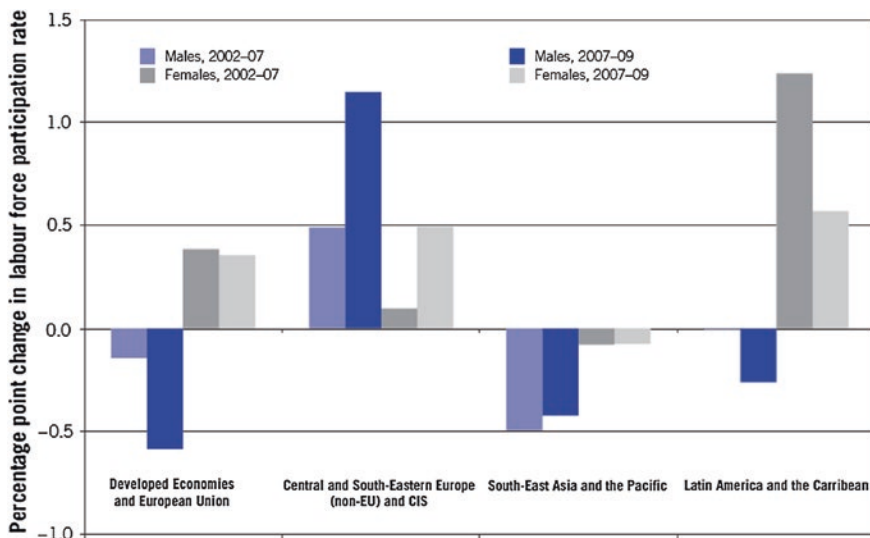
Note: 2002–07 values are average two-year trends.

Source: Calculations based on ILO, *Trends econometric models*, October 2010.

Fig. 14.1 Percentage point change in labour force participation rate in developed and developing nations
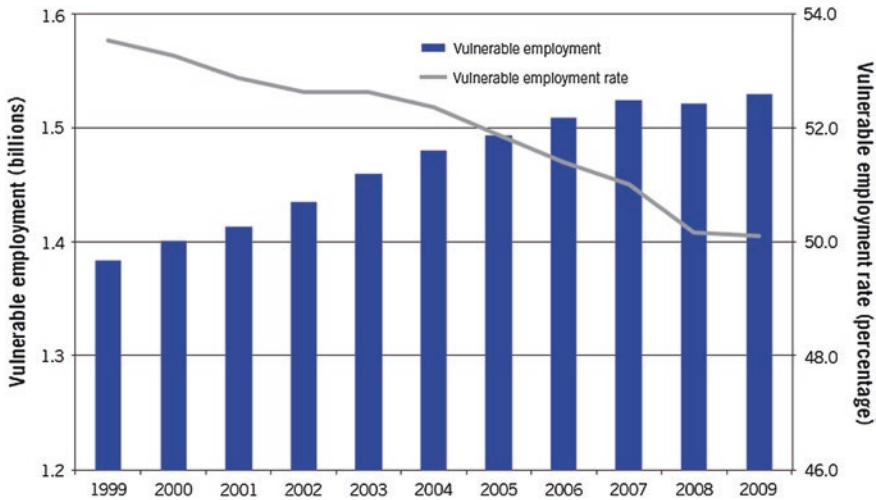
* 2009 is a preliminary estimate.

Source: ILO, *Trends econometric models*, October 2010 (see Annex 4).

Fig. 14.2 Informal (vulnerable) employment (Nos. and %) of the world

This illustrates the effect of the lack of a social safety net in numerous developing nations, whereby workers affected by the recession, rather than being unemployed or economically inactive, were forced to seek other forms of employment in the informal economy, (Spicer et al. 2000). During recession, the large informal sector in developing nations helped to reduce the impact of the economic crisis. The informal economy continued to function in recession and absorbed people who were not employed in the formal sector (London and Hart 2004). As illustrated in Fig. 14.1 in countries with a budding informal sector, unemployment increased more than in countries that had an established informal sector.

Second, in 2009, the estimated number of workers in the informal economy (referred to as 'vulnerable employment in the ILO, 2011 report) was 1.53 billion. This has increased by 146 million since 1999 (see Fig. 14.2). In South Asia, the number of workers in informal employment increased by 8.5 million. In Sub-Saharan Africa the increase was 7.4 million in 2009. In Latin America and the Caribbean it increased by 1.5 million in 2009, with marginal increases in the Pacific and Southeast Asia, the Middle East and North Africa. South Asia has the highest share of informal employment (78.5 % of total employment in 2009), Sub-Saharan Africa (75.8 %) and Southeast Asia and the Pacific (61.8 %).

Last, the output/worker figures (Fig. 14.3) for developing nations has been significantly lower than that of developed world in 2009. Despite restructuring in the transitional phase in last decade, the initiative has failed to create the jobs that economic growth rates promise in developing nations. The informal economy absorbed the bulk of the workforce that was not able to do more productive work.

Region	Output per worker 2009	Annual growth (%)						
		2001–06	2007	2008	2009	2010*		
						CI lower bound	Preliminary Estimate	CI upper bound
World	21 180	2.2	3.3	1.3	−1.4	2.7	3.1	3.4
Developed Economies and European Union	70 946	1.5	1.1	-0.1	−1.2	2.7	3.1	3.4
Central and South-Eastern Europe (non-EU) and CIS	23 514	6.0	5.2	3.0	−5.5	3.6	4.1	4.7
East Asia	12 383	8.3	11.8	8.2	7.0	8.2	8.5	8.7
South-East Asia and the Pacific	9 263	4.1	3.9	2.2	−0.4	4.7	5.0	5.4
South Asia	6 714	4.7	6.6	2.3	4.8	5.5	5.9	6.2
Latin America and the Caribbean	22 352	0.8	3.4	1.7	−2.4	2.4	3.0	3.5
Middle East	35 822	1.6	3.0	2.8	−1.3	−0.4	0.3	1.0
North Africa	16 235	1.3	2.9	2.1	1.6	1.6	2.4	3.1
Sub-Saharan Africa	5 141	2.3	3.5	2.4	−1.2	1.4	1.8	2.2

* 2010 are preliminary estimates; CI = confidence interval.

Note: Output calculated on the basis of constant 2005 PPP-adjusted international dollars.

Source: ILO, *Trends econometric models*, October 2010; see also source of table A2.

Fig. 14.3   Output/worker of world, developing nations and developed nations

In addition, the shortage of employment opportunities in the developing nations resulted in many seeking employment abroad.

14.3 Dynamics of Informal Economy in Developing Nations

By the early 1970s the perception had become widespread that policy measures had failed to trigger a growth process where the 'informal sector' expanded at the expense of the 'formal sector', despite decades of massive policy efforts in developing nations, (Lewis 1954; Polanyi 1957; Geertz 1963; Hart 1973). From the traditional dualistic economic view this is puzzling because, on the one hand, there was a high productive formal sector, eager to expand, whereas on the other hand, there was a low productive informal sector, where labour was abundant and the people poor (Meagher 1990). Dyer and Singh (1998) try to explain this by the 'relational view' between formal and informal sectors, posing that formal sectors encouraged and transacted with informal sectors, which was not governed by contractual specification, to gain competitive rents.

The informal economy has already played a powerful role in transition from command to the capitalist economy in developed nations (Spicer et al. 2000). Many formal firms in developed countries subcontract and outsource production to workers in developing countries, owing to the rising cost of labour, hyper-rationality of compliance in developed markets, the availability of extremely cheap labour/input market in developing nations and as a means to capture those at the Bottom of the Pyramid (Prahalad and Hart 2002; Prahalad 2004; Godfrey 2011). Perkins and Vassolo (2003)

highlight that, for formal sectors in developed nations, labour and inputs from the informal economy of developing nations is an attractive factor condition due to the availability of scarce low cost labour and input factors being abundant and also because of the flexibility experienced during environmental turbulence. This reduces the market uncertainty for developed nation firms and reduces the sum of production and transaction costs associated with hierarchy (Williamson 1975; Gulati 1995). Moreover; there is no real threat of rising wages due to legislation or unionization in developing markets (Boisot and Child 1996; Hudson and Wehrell 2005). Rugman and D'Cruz (1993) established the same through the double diamond framework for interactions between two nations and their competitiveness. In sum, many formal firms of developed nations prefer the informal economy of developing nations, in the interest of flexible specialized production, global competition, or reduced labour costs (Rugman and D'Cruz 1993; Thomas and Mueller 2000; Prahalad 2004; Godfrey 2011). Thus we propose (see Fig. 14.4):

Proposition 1 *The growth of 'informal economy' in developing nations will depend on the extent of sub-contracting and outsourcing strategy of firms from developed nations.*

In developing nations, the lack of robust government policies, prevalent institutional voids, unemployment, poverty and the lack of security nets favour the coexistence of the informal economy and formal economy (Arimah 2001; Xaba et al. 2002; Grimm and Gunther 2006). Liberalization of the developing economy fosters informal sectors because of MNCs entry into the markets, heightened competition for formal sectors and the exploration of means to capture the bottom of the pyramid (Prahalad and Hart 2002; Prahalad 2004). Firms in developing nations also aim to maximize their profits and payoffs by engaging in transactions with the informal economy because of greater bargaining power over the informal factor input conditions and related industries (Porter 1990, 1998). Thus, the formal economy firms (see Fig. 14.4) gain short term advantages in the oligopoly competition and on the other hand, this linkage with the informal economy provides further opportunities for employment and income to informal workers in the developing economy (Chen 2006).

Proposition 2a *The growth of the 'informal economy' in developing nations will depend on the legal environment of the nation, institutional voids and lack of security nets.*

Proposition 2b *The growth of 'informal economy' in developing nations will depend on the extent of liberalization in various sectors of the nation.*

The informal sector of developing nations allows the formal sectors of developed and developing economies to maintain competitive advantage by (a) reducing direct and indirect costs of production, (b) differentiating production and (c) gaining access to valuable resource of flexible labour pool (Godfrey 2011). This poses pressure on other firms to adopt the informal norm by enhancing their transactions with informal sectors to access valuable human resources and gain advantage from the linkages of informal related and supporting industries (Pfeffer
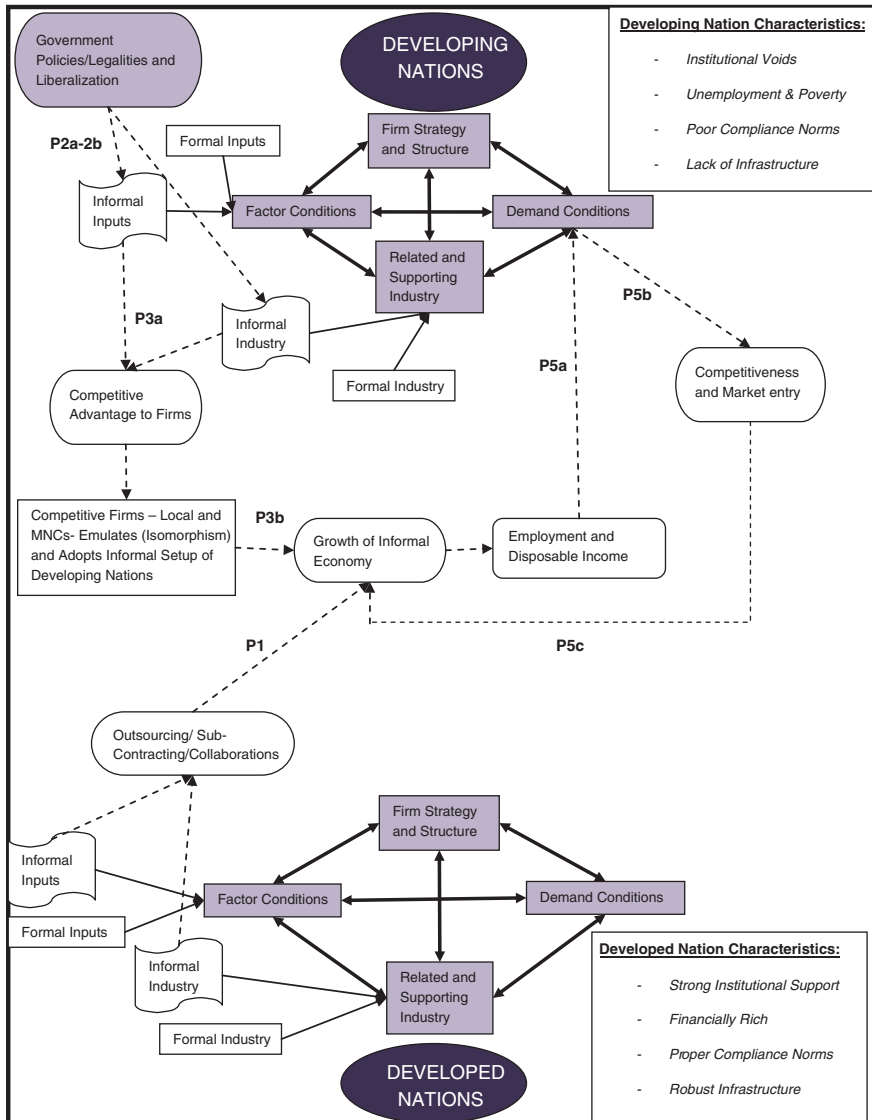
Fig. 14.4 Interlinking informal economy of developing nations to formal economy of developed and developing nations (adapted from Porter 1990)

and Salancik 1978; Wernerfelt 1984; Porter 1990). This institutional isomorphism of firms result from the need to engage in exchange with informal firms which possess scarce labour resources thus improving the competitiveness of firms (Powell and DiMaggio 1991, Ajitabh and Momaya 2004). As a result, the informal sector is integrally linked with the formal sectors of developing economies

(see Fig. 14.4). The informal–formal sector relationship is thus procyclical or in other words, complementary, i.e. expansion or contraction in one necessarily implies an expansion or contraction in the other (Sassen 1989; Godfrey 2011).

Proposition 3a *In the formal economy firms gain competitive advantage by linking to the informal economy in related industries and using factor inputs from them.*

Proposition 3b *The growth of the 'informal economy' in developing nations will depend on the institutional isomorphism resulting from the adoption of informal inputs/labour by formal economy firms.*

The informal inputs, operations and processes in formal enterprises/MNCs have limited technological sophistication and competition and is based on price-cutting rather than innovation (Becker 2004; Chen 2006). They are also more exploitative in nature, with formal firms taking advantage of the lower overhead costs in the informal sector (Hemmer and Mannel 1989). The negotiation/bargaining power and capacity of the informal economy is relatively limited, since they are commonly not organized in institutionalized forms of cooperation such as networks or associations (de Soto 2000; Yadav and Momaya 2009). On the other hand, the positive economic effect of this inter-linkage of the formal and informal economy is the expansion of the informal economy which provides huge potential for employment and income for people in developing nations (Thomas and Mueller 2000; Nwabuzor 2005; Chen 2006). The wages of this vulnerable population of developing nations increase (see Fig. 14.4) and so does the disposable income of the population (ILO 2011). Moreover, the sectors of microfinance, informal private equity, micro-entrepreneurship and self-employment become an integral contributing phenomenon to the GDPs of the developing economy (Chakraborty 1997; Spicer et al. 2000; Hudson and Wehrell 2005; Webb et al. 2009).

Proposition 4 *The 'informal economy' in developing nations will influence the employment and wages/workers of the economy.*

This increases the standard of living and reduces poverty in the population which in turn increases the demand of products/services in developing nations (Li et al. 2009; ILO 2011). This constitutes the market for the Bottom of the Pyramid of developing nations and, with the enhancement of their disposable income and purchasing power (see Fig. 14.4), more firms enter the market to fulfil this huge unmet demand (Prahalad and Hart 2002; Prahalad 2004; Godfrey 2011; Dhir and Mital 2012). With weak entry barriers for the lesser developed world, especially for accessing informal labour, inputs and related industries and the liberalization of economy, more formal firms and MNCs compete for market power, increase their market share by establishing linkages (see Fig. 14.4) with the informal economy and further contribute to the growth of the informal economy, thus, confirming to complementary relationship of formal–informal linkages (Portes and Sensenbrenner 1993; Chen 2006; Centeno and Portes 2006; Li et al. 2009; Godfrey 2011).

Proposition 5a *The growth of the 'informal economy' in developing nations will influence the demand conditions of the nation.*

Proposition 5b *The demand conditions of developing nations will influence the competitiveness and market entry of foreign firms in the industry.*

Proposition 5c *The growth of the 'informal economy' in developing nations will depend on competitiveness and market entry of firms in developing nations.*

14.4 Jaipur Rugs—A Case Study

Since its initiation in 1999 by Mr. Nand Kishore Chaudhary, Founder-Chairman and Managing Director, Jaipur Rugs has become a category leader in the carpet industry with its elusively unparalleled hand knotted carpets utilizing informal economy in India. What started with just two looms and nine artisans in 1978 has now become a success equation with the hard work of the toiling artisans, unique market strategy and quality attainment today.

Jaipur Rugs maximizes the unorganized textile industry in India and is one of the well-known market players which manufactures and exports superior quality wool, wool–silk, pure silk and contemporary rugs and carpets. Over the years, the company has continued in an informal setup and perfected the techniques to showcase the rich heritage of Indian designs in the businesses for more than 30 countries globally. Headquartered in Jaipur (India), the company has over 20 branches in ten states of India along with a bonding of more than 40,000 village artisans.

Presently Jaipur Rugs operates in 10 states (Assam, Bihar, Gujarat, Jharkhand, Nagaland, Orissa, Rajasthan, Sikkim, Uttar Pradesh and West Bengal). It has 40 carpet weaving clusters covering 800 villages. Total artisans working for Jaipur Rugs are more than 40,000 covering 9000 families.

14.4.1 Indian Carpet Industry—An Overview

The carpet industry in India is highly fragmented with nearly 70 % accounted for by the unorganized sector. The relative size of the players can be gauged from the fact the largest player in the market accounts for a share of the little over 5 % of the total market. Another unique feature of the carpet industry in India is that there are traditional clusters which have emerged as major carpet weaving centres like Badohi and Agra (in UP), Panipat (Haryana), Jaipur (Rajasthan) and Kashmir. USA and Germany are the two major export markets for Indian carpets, which account for nearly 80 % of the total exports out of India. In 2007, the total value of exports stood at $809 million, with the largest share of the market being for handmade woollen carpets at 60 %.

The Indian carpet industry is a special industry in Indian informal setup. It lacks proper channels and is highly unorganized. Despite the fact, it contributes impressively to the % of GDP in India.
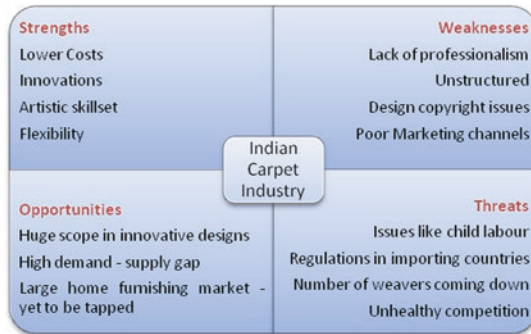
Source: Authors
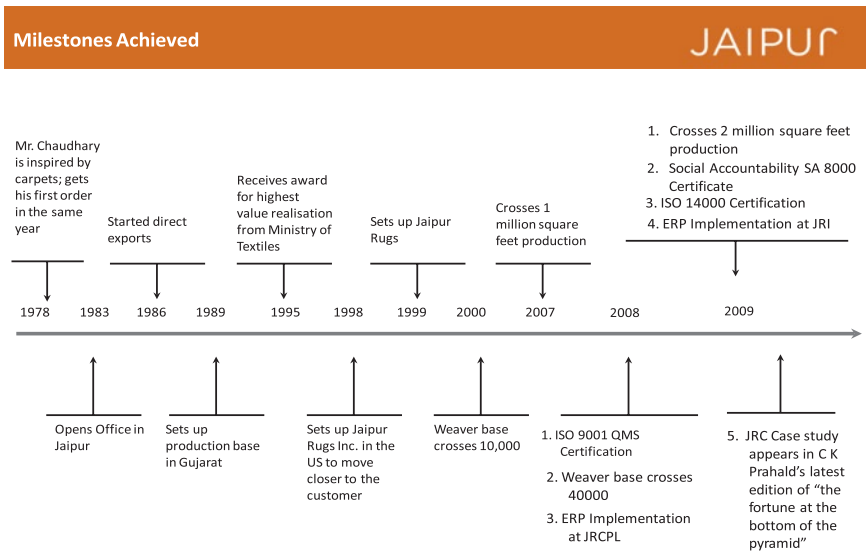
Source: Jaipur Rugs Website

14.4.2 Unique Model of Jaipur Rugs: Focus on Informal Linkages

Jaipur Rugs leads the industry in design and innovation by acting as supplier to foreign branded firms. Furthermore, Jaipur Rugs creates a unique model of sub-contracting in the rug industry being involved as ODM (original design manu-facturer) suppliers for its foreign partner. The firm promotes the rich heritage and tradition of art among the master weavers. Jaipur Rugs impacts the informal Indian economy setup by leveraging the legal environment and lack of security

nets. Jaipur Rugs firm has built and created a well-connected supply chain globally on a massive scale—with a focus on harnessing untapped Indian manpower skills and potential at the informal level, thereby providing handsome salary in the remotest parts of India to the workers and connecting them with markets of the formal economy, like the U.S.A (United States of America).

Jaipur Rugs has its informal linkages to the ground level network of the Indian informal sector and connects the same to the end product users. Jaipur Rugs has utilized the free labour pool of India and built a direct connection with the informal workers little involvement of the middleman. This has enabled them to reward the worker, for his hard work and traditional artistic creation, the return in this unorganized sector. The worker is directly involved with the company and can be creative in design. Jaipur Rugs gains the competitive advantage by procuring the material through standard specifications. Moreover, as per the production requirements plans, Jaipur Rugs links the related industries for the manufacturing of the goods. Utilizing the factor inputs of the Indian informal economy, Jaipur Rugs sells its product through its aggressive marketing techniques to the different developed counties of the world.

Salutatory coordination and efficiency is the unique factor in the ecosystem of Jaipur Rugs because of its interlinkages and isomorphism, resulting from adoption of the informal products by formal economy firms. Jaipur Rugs maintains efficient synergy in the process from the raw material procurement till the dispatch of finished goods. Jaipur Rugs is able to create a demand for its products because of its adherence to build deep rooted relationships with informal inputs and formal demand. Jaipur Rugs has decentralized its manufacturing as well as logistical support. The firm adheres to the unrelenting faith of fundamental social values such as equality of wages as well as equal opportunities. Jaipur Rugs is able to maintain the quality in its products as it demonstrates strong social values in the informal economy and is able to build enduring healthy relationships with both the workers and suppliers it interacts with.

Jaipur Rugs combines several interlinked processes such as: infrastructure for information technology, human interfaces, employee training and loyalty rewards. The Enterprise Resource Planning system of Jaipur Rugs allows for institutionalizing quality control, continuity of work and achieving enormous scale in an informal setup, thus resulting in an optimized and geographically diverse supply chain.

The production process of Jaipur Rugs is vertically integrated from the procurement of raw materials till the finished product is shipped. At each stage, after quality inspections, each product of Jaipur Rugs undergoes multiple tasks. Adherence to exceptional quality standards by experienced and skilled investigators has enabled the firm to attain the ISO 9001: 2008 and SA 8000 Certification. Therefore, Jaipur Rugs exceeds their customer's expectations within the specified time frame due to the above stated international standards which duly prescribe set quality management systems and quality controls.

14.4.3 Challenge for Jaipur Rugs

In its dream run towards being the most successful carpet exporter of India, Jaipur Rugs started facing a new challenge a few years back—the challenge of reducing the number of weavers in India owing to different issues faced by the informal industry. There came a period where the formal world demand could not be met by the informal world supply and the weavers had to be pushed hard to increase the production in order to meet the demand. This challenge was threatening and had to be addressed immediately as this forced the clients to look for alternate markets to buy carpets.

N.K. Chaudhary, a veteran for the carpet industry, understood that all these were symptoms of a larger problem of informal economy and he has set up the Jaipur Rugs Foundation to address the problem and aimed to provide a permanent solution which would help not only the company and unorganized industry but also the informal economy workers' community in the long run.

Through continuous research and interactions, it was discovered that the majority of the informal world artisans face one of the most devastating consequences of unrelenting poverty. Many informal communities do not know of or avail their rights to education, health and sanitation. Informal world weavers are paid below the industry standards by the middlemen and are not exposed directly to the markets their work is created for. The standard of living of the artisans of the unorganized sector is generally low and has not improved even after conventional development interventions. The artisans of the informal economy are unaware of their rights and various beneficiary schemes by the Indian government that can aid them with financial assistance.

Jaipur Rugs Foundation Working Model
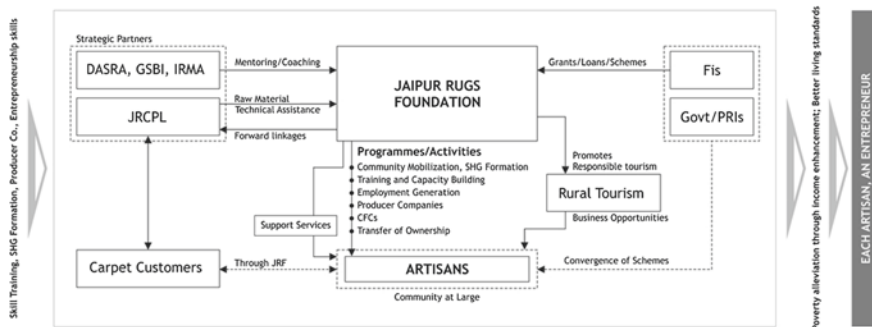
Source: www.jaipurrugs.org

14.4.4 Looking Ahead

Apart from its successes, there were a few challenges which the company faced at this point of time in 2014. Attracting the right talent with the right culture fit was a paramount challenge to Jaipur Rugs. "We don't need just people with high

credentials, we need people who are enthusiastic and empathetic and are willing to go the extra mile", said N.K. Chaudhary in an interview with authors in 2013. The HR head also believes that employee recruitment and selection will be a huge challenge when the company would grow in the next few years. The company is also taking steps to keep its artisans involved in the art of making handmade carpets. With growing opportunities being available, many of the artisans are moving onto new activities—hence the future of handmade carpets is under eminent threat of getting lost. Also, the company has future plans of entering Indian markets yet the current orders have already been booked for the next 2 years. In order to attain their vision of entering new markets, Jaipur Rugs has to look at ways to enhance their production process and schedules to meet the new orders. Yet Mr. Chaudhary believed that this was just the beginning of a new journey for Jaipur Rugs and he was confident that Jaipur Rugs would continue to produce quality carpets as well as improvise the lives of the rural artisans in the days to come.

14.5 Conclusion

Informal economies have not only proliferated over the years, especially in past three decades in developing nations but also have also been established as a dominant form of exchange for firms across the globe. We posit that firms in the formal economy gain competitive advantage over competitors through linkages with informal factor inputs and related industries as per Fig. 14.4. The informal economy provides a means for firms in the formal economy to capture the BOP market encouraging entrepreneurship for early-stage enterprises. We have argued that national economic factors, government policies and context specific factors also serve an important role in the growth of the informal economy. From socio-economic perspectives, the informal economy is an important avenue from which to tackle unemployment and poverty as the formal economy in developing nations cannot absorb the abundant labour in the market. This informal setup has provided a source of income to the poor and raised the disposable income of the population. The informal economy significantly contributes to the GDP of developing nations and due to the inter-linkages with the formal economy has become procyclic with the formal economy. The informal economy has also been observed to act as a cushion to absorb global economic shocks and thus reduce uncertainty.

Future work in the informal economy can explore its impact on BOP concepts such as scalability and local embeddedness. Apart from the positive effect of creativeness and opportunity richness of the informal economy, the negative impact of coerciveness and poverty can be contrasted in further studies.

Another area of future work might be to establish the scope of organizations that constitute the informal economy. The informal–formal distinction could be further subdivided by including the degree of formality and informality along a continuum. This would further clarify the formal and informal economy linkages in different contexts helping to provide policy makers with a more robust picture

of the situation. Empirical testing for the degree of informality in both developed and developing nation contexts would also provide a better understanding of this widespread phenomenon across the world.

Finally, the symbiotic relationship of the informal and formal economy can be another avenue of research to explore the synergies and relationships which exist. How do the joint purposes and goals meet for the informal and formal economy? Does the informal economy precede the formal economy? Do the two economies complement or are they substitutes of each other? These questions along with the moral, values and ethics of linking the informal economy with the formal economy could also help to enrich future research perspectives on the informal economy.

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Chapter 15
Hierarchy of Continuity and Change Forces of International Technology Strategy

Prakash Kumar Kedia and Sushil

Abstract Organizations that have been able to successfully integrate their technology and business strategy have created significant business returns. Upgraded technology has become an important enabler for organizations mainly in areas, like mass customization, competitive differentiation, quality improvements, and process automation. In order to keep an organization 'young in body and mature in mind', it requires both stability and dynamism. To survive in the future and succeed in international markets, an organization has to maintain certain characteristics at a given point of time, these are continuity forces, and at the same time organizations are required to adapt to new conditions, these are change forces. What is required is for some mechanism to develop a hierarchical relationship between continuity and change forces in terms of international technology strategy towards better technology performance of an organization. A qualitative method, Total Interpretive Structural Modelling (TISM), based on expert's view has been used to develop the proposed hierarchy between continuity and change forces. Finally, the chapter will explain the driving forces and dependent forces and their effect on technology performance.

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15.1 Introduction

In order to solve complex strategic issues international technology has become a key component of the solutions. Organizations are dependent on international technology to improve their technology performance. At the same time organizations need to be flexible in order to meet customers demand quickly, accurately, and cost-effectively. However, if international technology deployment is ineffective, then international technology can become a source of failure within organizations.

In the 1990s the competitive, economic and social environment became increasingly complex due to accelerating international technological development. Schumpeter (1961) proposed that "*technological change induces emergence, evolution, fusion, and disruption of industries over time*". In the present turbulent and complex operating environment, international technology plays a significant role in organizational development. Organizations are constantly struggling in adapting the international technology and optimize their investments for new opportunities in the marketplace. Therefore, the underlying needs for organizations are their capability of creating and executing business and technology strategies for value creation and sustained competitiveness.

In order to continue its existence, organizations have to maintain certain characteristics at a given point of time, which may be called continuity forces. These continuity forces are crucial for the healthy operations of the organization in present as well as in foreseeable future. Also, at the same time there are certain external forces, which may be called change forces. Therefore, the organizations have to rapidly adapt these change forces if they want to survive in the future.

In this chapter, our aim is to identify critical continuity and change forces that are linked to the management of an international technology strategy. We will develop an hierarchy relationship of those continuity and change forces using a qualitative method, total interpretive structural modelling (TISM) (Sushil 2012) and we will analyze their effects on the overall technology performance of an organization.

15.2 Literature Review

Despite an extensive literature on models and processes of organizational change Nasim (2010) after summarizing an extensive body of organizational change literature concluded that there is still so much more to be learned and further development was required to understand the process of organizational change.

Various authors discussed managing the paradox of continuity and change such as, Mintzberg et al. (1998) mentioned the need for balancing change with continuity, i.e. "*achieve change when and where necessary while maintain order*"; Pettigrew (2000) further recapitulated the view that "*any adequate theory of*

change has also to be explain continuity" and Drucker (1999) suggested that "*the more an institution is organized to be change leader, the more it will need to establish continuity internally and externally, the more it will need to balance rapid change with continuity*". In order to manage the paradox of continuity and change for impressive organizational change, it is better to balance the two simultaneously and to manage both continuity and change.

The notion of continuity and change was popularized in the book 'Built to Last' by Collins and Porras (1994) and they suggested that the "*ability to manage continuity and change is the secret to an enduring great company*". Mintzberg et al. (1998) admitted that "*despite all current hype about change not all organizations need to change all the time*". Leana and Barry (2000) suggested that continuity and change should concurrently be present in the organization and need to be balanced, in order to improve organizational performance. Huy (2002) mentioned that tension between continuity and change is thus an unavoidable part and exist at the individual level of an organization. Bianco and Schermerhon (2006) suggested that "*organizational leadership should allow for coexistent states of both continuity and change*".

Researchers have attempted to present a framework for managing continuity and change concurrently for better performance, such as Mintzberg's '*Crafting Strategy*' (1988), Volberda's '*Paradox of Flexibility*' (1998), and Sushil's '*Flowing Stream Strategy*' (2005a).

Organizations need flexible strategies in order to be prepared for the change in the business environment (Volberda 1997). Volberda's '*Strategic Management of Flexibility*' reconciles the conflict between continuity and change. While Sushil's framework for managing continuity and change is a comparatively more direct attempt to resolve the paradox of continuity and change. According to Sushil (2005a), the continuity forces and change forces need to be balanced for successful organizational change and both continuity and change forces would be different for different industries and business organizations.

15.3 Continuity and Change Forces

The following continuity forces and change forces have been identified as being critical in the area of international technology strategy. These are as follows:

Existing Physical Infrastructure (CT1): Current infrastructure gives continuity to the organization. It can be considered as one of the competitive advantage and may lead to better performance if managed in an optimum way.

Expertise in Existing Technology (CT2): Awareness about the existing technology is one of the key issues for managing organizational performance. Technology is recognized as a facilitating tool for an organization that may smooth the process.

Organization's Structure (CT3): It is one of the determining factors for continuity in the organization. Organization structure affects the decision making in terms of speed as well as authority (who is responsible to take decisions).

Core Competencies (CT4): Core competencies are the activities and processes that give competitive edge to an organization. It is the strength that distinguishes organization from its competitors and hard to imitate.

Competition (CH1): Competition arises when there is scarcity of something that cannot be shared. In the current information era, the easy availability of technology and market globalization has increased competition.

Globalization (CH2): International technology has been considered as one of the critical change forces for organizations. Markets are no longer small and local, they have become globalized.

Emerging New Technology (CH3): Technology has become the prime driver of change across all domains. Technological evaluation will continue and is a key factor for organizations to remain competitive.

Government Policy and Legislation (CH4): Deregulation and subsequent policy changes by governments have affected the business in most of the countries. It is one of the constituents part for organizational environment and act as a controlling/directing tool for organizations.

15.4 Development of Hierarchy of Continuity and Change Forces

Whetten (1989) outlined the six fundamental questions that should be answered in the case of theory building: *what*, *how*, *why*, *who*, *where*, and *when*. The most fundamental ones are *what*, *how*, and *why*. *What* can be addressed through defining the basic constructs or elements constitute the framework in any theory building phase. Next, *how* can be addressed during the hypothesized relationship between research variables/elements/factors/forces. The *why* question need to be addressed in order to interpret the linkages which have been envisaged as hypotheses.

What can be answered either from existing literature or may be developed using grounded theory (Corbin and Strauss 1990). We may use past theories to answer *how* and *why*. However, to answer *how* and *why* in terms of relationships is comparatively weak and such relationship can be expressed on a case to case basis. This problem can be resolved through system engineering and system theory based methods, but again the interpretation part is missing. The missing interpretation can be resolved by using Interpretive structural modelling (ISM) (Warfield 1973), *a process that transforms unclear and poorly articulated mental models into visible and well-defined models through systematic iterative application of graph theory in a form of directed graph*. In ISM, the interpretation of the digraph can be done both at nodes and links levels. At nodes level, interpretation is in the terms of definition of elements/variable/factors/forces. The interpretation at links level is comparatively weak and limited to interpreting the contextual relationship between the forces and direction of the relationship in a paired comparison, but how it operates is lacking in the case of the interpretation of the directed link. In this chapter, an attempt has been made to provide the interpretation of links using

the tool of the Interpretive Matrix (Sushil 2005b) and the methodology of Total Interpretive Structural Modelling (TISM) (Sushil 2012) will be used for developing and interpreting the hierarchy of continuity and change forces.

15.4.1 Methodology for Developing Hierarchy

The methodology of Total Interpretive Structural Modelling (TISM) has been used to develop the hierarchy of continuity and change forces of international technology strategy. Experts and stakeholders opinion both from academia and industry has been used to identify the contextual relationship among each pair of forces and for the logic behind each relationship. The reachability matrix (central tool of ISM) and its partitions have been adopted in the process of TISM. The basic process of TISM is briefly outlined below and will illustrate using the continuity and change forces of international technology strategy for which the TISM has been developed.

Step I: *Identify and Define Forces*
The starting step is to identify and define the forces whose relationships are to be developed. In the context of this chapter, four continuity forces (CTs) and four change forces (CHs) related to international technology strategy have been identified and explained in the previous section. Another element called 'Technology Performance (TP)' has also been taken out, in order to see the effect of the continuity and change forces on overall technology performance of an organization. All the final nine forces/elements are exhibited in Table 15.1.

Step II: *Define Contextual Relationship*
In order to develop the hierarchy, it is crucial to state the contextual relationship between the different elements/forces. For example, the contextual relationship between 'Continuity Force CT1 will influence/enhance Change Force CH1' and so on. Domain experts and stakeholder's inputs are solicited to capture the contextual relationships.

Table 15.1 List of final forces

Forces	Names	Type
CT1	Existing Physical Infrastructure	Continuity Forces
CT2	Expertise in Existing Technology	
CT3	Organization's Structure	
CT4	Core Competencies	
TP	Technology Performance	Performance
CH1	Competition	Change Forces
CH2	Globalization	
CH3	Emerging New Technology	
CH4	Govt. Policy and Legislation	

Table 15.2 Contextual relationship and interpretation

Forces	Name	Contextual relation	Interpretation
CT1	Existing Physical Infrastructure	CT1 will influence/ enhance CT2	How or in what way will CT1 influence/enhance CT2?
CT2	Expertise in Existing Technology		
CT3	Organization's Structure		
CT4	Core Competencies		
TP	Technology Performance		
CH1	Competition		
CH2	Globalization		
CH3	Emerging New Technology		
CH4	Govt. Policy and Legislation		

Step III: *Interpretation of Relationships*
How the contextual relationship works is not explained in ISM. To move forward, clarification from the domain experts and stakeholders was sort for the interpretation/logic against the expressed relationship. Experts not only indicate whether 'Continuity Force CT1 will influence/enhance Change Force CH2' or not, but also to explain 'How they will influence/enhance each other?'. A sample example of the contextual relationship of forces and their interpretation is exhibited in Table 15.2.

Step IV: *Interpretive Logic of Pair-Wise Comparison*
The concept of Interpretive Matrix will be used to upgrade ISM into TISM. This gives the full interpretation of each paired comparison, i.e. how directional relationship operates in the system by answering the interpretive query as mentioned in previous step, i.e. Step III. For paired comparison, the *i*th forces were compared individually to all forces from *(i+1)*th to the *n*th forces. For each $i - j$ link the entry could be either 'Yes(Y)' or 'No(N)' and if it is 'Yes(Y)', then the reason/ logic is to be provided. Based on discussion with domain experts from academia and industry, a sample of interpretive logic of paired relationships in the form of 'Interpretive Logic–Knowledge Base' for the forces having response 'Y' are exhibited in Exhibit 1 in Appendix.

Step V: *Reachability Matrix and Transitivity Check*
The Initial reachability matrix has been constructed based on paired comparison by making entry 1 in $i - j$ cell, if the corresponding entry in Interpretive Logic–Knowledge Base is 'Y', or else it should be entered as 0 for the corresponding entry 'N' in Interpretive Logic–Knowledge Base. The translated reachability matrix has been checked for the transitivity, e.g. if CT2 **Related to** CT4 and CT4 **Related to** CT1 then this implies CT2 **Necessarily Related to** CT1 and updated till full transitivity established. The Interpretive Logic–knowledge base has also been updated for each new transitive link by changing 'No(N)' entry into 'Yes(Y)' and 'Transitive' entered in the interpretation column. If transitive relationship can be explained meaningfully, then that logic has been written in the

Table 15.3 Reachability matrix

	CT1	CT2	CT3	CT4	TP	CH1	CH2	CH3	CH4
CT1	1	0	1	0	1	0	0	0	0
CT2	1ª	1	1ª	1	1	1	0	1ª	0
CT3	0	0	1	0	1	0	0	0	0
CT4	1	1	1	1	1ª	1ª	0	1ª	0
TP	0	0	0	0	1	0	0	0	0
CH1	1ª	1	1	1ª	1	1	0	1	0
CH2	1	1	1	1	1	1	1	1	1
CH3	1ª	1ª	1	1	1	1	0	1	0
CH4	1	1	1	1	1	1	1	1	1

ªTransitivity

Table 15.4 Final level of forces

Forces	Description	Levels
TP	Technology Performance	**I**
CT3	Organization's Structure	**II**
CT1	Existing Physical Infrastructure	**III**
CT2	Expertise in Existing Technology	**IV**
CT4	Core Competencies	
CH1	Competition	
CH3	Emerging New Technology	
CH2	Globalization	**V**
CH4	Govt. Policy and Legislation	

Interpretive Logic–Knowledge Base along with 'Transitive' entry or else left as it is. A final updated reachability matrix, post transitivity check, has been exhibited in Table 15.3.

Step VI: *Level Partition on Reachability Matrix*
The level partition has been carried out similar to the ISM and determined the reachability and antecedent sets for all the forces. If the intersection of the reachability set and the antecedent set are same as the reachability set, then that forces should be removed and put it at the top level. This exercise has to be repeated iteratively till finalized levels. The final result after these iterations on identified nine forces has been exhibited in Exhibit 2 in Appendix. Finally, forces have been partitioned into five levels as exhibited in Table 15.4.

Step VII: *Developing Digraph*
After eliminating the transitive relationships step-by-step by examining their interpretation from the knowledge base, forces have been arranged graphically in levels and the directed links have been drawn as per the relationships shown in the reachability matrix. Only those transitive relationships may be retained whose interpretation is crucial and a simpler version of the initial digraph with significant transitive links as per levels discussed in previous step has been depicted in Fig. 15.1.

Fig. 15.1 Digraph with
significant transitive links
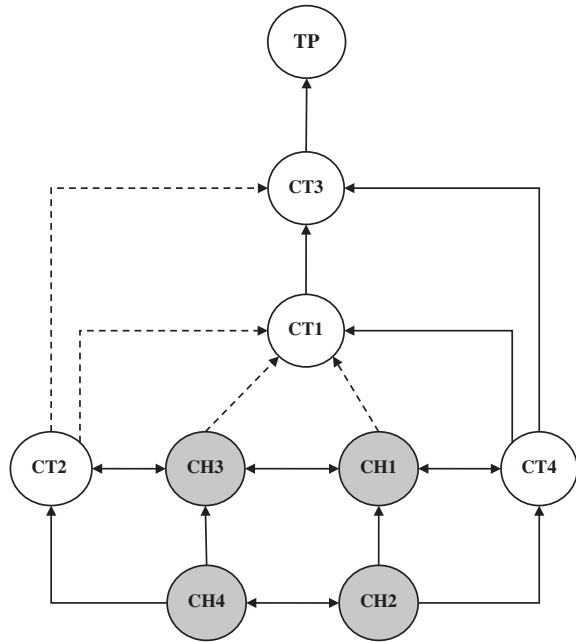
Step VIII: *Total Interpretive Structural Model*
The nodes in the above digraph have been replaced by the interpretation of forces
placed in boxes and the interpretation of links has been depicted along the side of
the respective links in the structural model. This leads to total interpretation of the
structural model in terms of the interpretation of its nodes as well as links and a
final TISM model of identified forces has been depicted in Fig. 15.2.

15.5 Discussion and Implications

Based on the literature survey, stakeholder's inputs and TISM methodology, four
continuity and four change forces along with technology performance have been
partitioned into five levels. An examination of the developed hierarchy of the con-
tinuity and change forces indicates that change forces are affecting more than the
continuity forces as they are mostly clustered along with each other at the bottom.
We found that the most critical change forces, i.e. 'Govt. Policy and Legislation'
and 'Globalization' are the main driving forces. These forces further lead towards
other change forces such as 'Emerging New Technology' and 'Competition'.
Finally, these change forces along with other continuity forces are enhancing the
technology performance of the organization. Some of the continuity forces are
scattered in sides or at the upper level of change forces seems to be having more
direct relation with the technology performance. Along with direct link among
forces as indicated by thick arrow lines, few significant transitive links with their
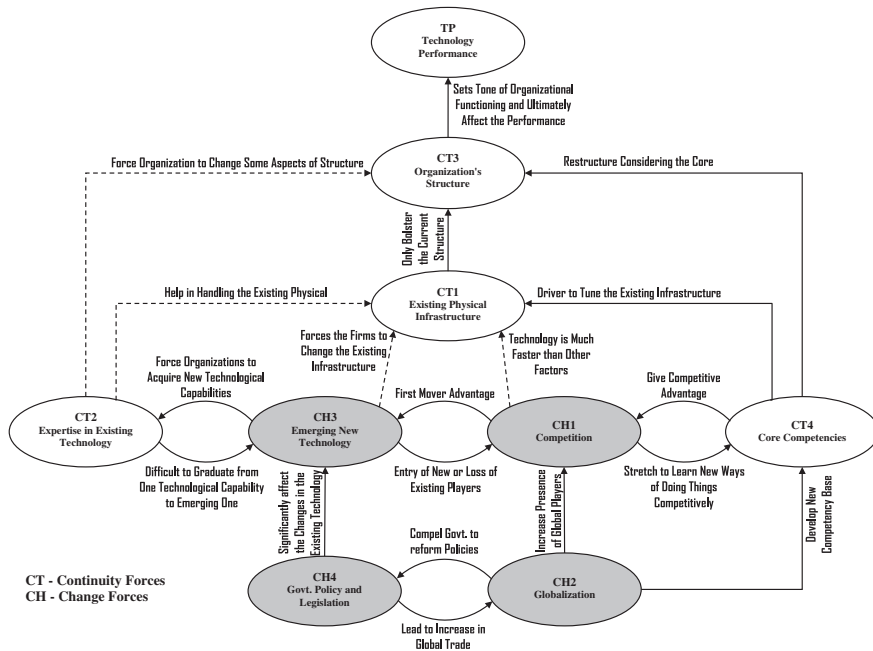
Fig. 15.2   Structural model of continuity and change forces

interpretations has also been depicted by dotted arrow line, through which we can see the direct or indirect relations among different forces. Finally, the hierarchy of continuity and change forces indicates that change forces will drive continuity forces in order to enhance technology performance. As a result, technology performance is totally dependent on other continuity and change forces together.

The findings of this hierarchy is useful for informing researchers is that the research construct used in this chapter can be used by researchers in different domains and in the context of particular countries. For practitioners, this chapter informs them about the critical continuity and change forces related to international technology strategy. The methodological framework of TISM can be applied by practitioners in a company context. This chapter provides a logical structure and hierarchy of critical continuity and change forces related to international technology strategy both for scholars and practitioners.

15.6 Conclusion

A structured hierarchy of critical continuity and change forces related to international technology strategy along with their respective interpretation has been developed. The chapter outlines the direct and indirect relations between these forces in order to see their effect on overall technology performance. The TISM

methodology used in this chapter has been set out and demonstrated by Kedia and Sushil (2013), Nasim (2011), Srivastava and Sushil (2011).

There are limitations to consider such that the interpretations of the links are drawn from a few experts. This can be addressed through increasing the number and using a feedback loop approach as proposed by Sushil (2009) to enhance the reliability of the developed hierarchy. Empirical validation of this study can be undertaken using statistical packages such as SPSS. This chapter has made an attempt to provide a way of strategy formulation and can be considered as a stepping stone for a more tangible theory building in the area of international technology strategy.

Appendix

See Exhibits 1 and 2.

Exhibit 1 Interpretive logic–knowledge base

S. No.	Forces	Paired comparison of forces	Y/N	In what way forces will influence/enhance other forces? Give reason in brief
1	CT1 – CT3	*Existing Physical Infrastructure* will influence or enhance *Organization's Structure*	Y	If organization significantly make existing physical infrastructure, they may be need to changes in organization's structure like decentralization etc.
2	CT2 – CT1	*Expertise in Existing Technology* will influence or enhance *Existing Physical Infrastructure*	Y	Transitive
3	CT4 – CT1	*Core Competencies* will influence or enhance *Existing Physical Infrastructure*	Y	Core competencies can be a driver to tune the existing infrastructure to achieve competitive advantage
4	CH2 – CH1	*Globalization* will influence or enhance *Competition*	Y	Increasing presence of global players and internationalization of organizational economy of scope result in intensifying the competition both quantitatively and qualitatively
5	CH4 – CT1	*Emerging New Technology* will influence or enhance *Existing Physical Infrastructure*	Y	(Transitive) Emerging technology such shift from mobile to smart phone forces the firms to change the existing infrastructure such as shifting from telecom infrastructure to spectrum infrastructure

Exhibit 2   Level partitioning on reachability matrix

Iterations	Forces	Reachability set	Antecedent set	Intersection set	Level
Iteration 1	CT1	CT1, CT3, TP	CT1, CT2, CT4, CH1, CH2, CH3, CH4	CT1	
	CT2	CT1, CT2, CT3, CT4, P, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CT3	CT3, TP	CT1, CT2, CT3, CT4, CH1, CH2, CH3, CH4	CT3	
	CT4	CT1, CT2, CT3, CT4, P, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	TP	**TP**	**CT1, CT2, CT3, CT4, TP, CH1, CH2, CH3, CH4**	**TP**	**I**
	CH1	CT1, CT2, CT3, CT4, P, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH2	CT1, CT2, CT3, CT4, P, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
	CH3	CT1, CT2, CT3, CT4, P, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH4	CT1, CT2, CT3, CT4, P, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
Iteration 2	CT1	CT1, CT3	CT1, CT2, CT4, CH1, CH2, CH3, CH4	CT1	
	CT2	CT1, CT2, CT3, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CT3	**CT3**	**CT1, CT2, CT3, CT4, CH1, CH2, CH3, CH4**	**CT3**	**II**
	CT4	CT1, CT2, CT3, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CT3	
	CH1	CT1, CT2, CT3, CT4, CH2, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH2	CT1, CT2, CT3, CT4, CH1, CH2, CH3, CH4	CH3, CH4	CH3, CH4	
	CH3	CT1, CT2, CT3, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH4	CT1, CT2, CT3, CT4, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	

Exhibit 2 (continued)

Iterations	Forces	Reachability set	Antecedent set	Intersection set	Level
Iteration 3	**CT1**	**CT1**	**CT1, CT2, CT4, CH1, CH2, CH3, CH4**	**CT1**	**III**
	CT2	CT1, CT2, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CT4	CT1, CT2, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH1	CT1, CT2, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH2	CT1, CT2, CT4, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
	CH3	CT1, CT2, CT4, CH1, CH3	CT2, CT4, CH1, CH2, CH3, CH4	CT2, CT4, CH1, CH3	
	CH4	CT1, CT2, CT4, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
Iteration 4	**CT2**	**CT2, CT4, CH1, CH3**	**CT2, CT4, CH1, CH2, CH3, CH4**	**CT2, CT4, CH1, CH3**	**IV**
	CT4	**CT2, CT4, CH1, CH3**	**CT2, CT4, CH1, CH2, CH3, CH4**	**CT2, CT4, CH1, CH3**	**IV**
	CH1	**CT2, CT4, CH1, CH3**	**CT2, CT4, CH1, CH2, CH3, CH4**	**CT2, CT4, CH1, CH3**	**IV**
	CH2	CT2, CT4, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
	CH3	**CT2, CT4, CH1, CH3**	**CT2, CT4, CH1, CH2, CH3, CH4**	**CT2, CT4, CH1, CH3**	**IV**
	CH4	CT2, CT4, CH1, CH2, CH3, CH4	CH2, CH4	CH2, CH4	
Iteration 5	**CH2**	**CH2, CH4**	**CH2, CH4**	**CH2, CH4**	**V**
	CH9	**CH2, CH4**	**CH2, CH4**	**CH2, CH4**	**V**

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Part IV
Capacity Building—Government and the Broader Economy

Chapter 16
A Strategic Analysis of Actor Competencies and e-Governance Performance

P.K. Suri

Abstract The potential of e-Governance for serving the citizens at large is well recognized by the Government of India. A number of initiatives have been undertaken in this direction under various projects identified under the erstwhile National e-Governance Plan (NeGP). Some of these initiatives have been successfully implemented whereas many others are yet to deliver as per expectations. The vision of effectively serving the citizens at grassroots through digital pathways is, therefore, still far away from its realization. The unfinished NeGP has now been subsumed in NeGP 2.0 or e-kranti as part of a highly ambitious 'Digital India' programme. The realization of this vision expects active involvement of government officials and the target beneficiaries. Lack of operational competencies has been identified, by the twelfth five-year plan document, as a major hurdle in the effective implementation of several such mega government initiatives in India. This study, based on a survey of government officials and beneficiaries of government services, aims at analyzing competence level of key actors and e-Governance performance. Suitable constructs are proposed, statistically validated and applied for conducting the analysis. Competence level of actors has been measured in terms of 'Ability to use project service', 'Ability to use computing facilities' and 'Ability to maintain contact' with implementers and beneficiaries. E-Governance performance is measured as the common expected benefits.

Keywords Actor competence · e-Governance · e-Governance in agriculture · e-Governance assessment · e-Governance performance · e-Government · ICT in agriculture

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16.1 Introduction

Agriculture continues to play a predominant role in terms of employment and livelihood in India despite its declining contribution to the overall growth of economy. Successive governments have been attempting to enhance competitiveness of Indian farmers in the world market through a series of measures (Planning Commission 2002, 2007, 2013). However, Indian agriculture is characterized by the challenge that a large number of farmers own small land holdings. These marginalized farmers are unable to draw benefits from various government schemes aiming at agricultural development. In the globalized economy, it has become essential to enable the farming community with best farming practices for keeping their production and marketing related activities aligned with the changing market conditions. Farmers need information on aspects such as quality inputs for nurturing and protecting crops besides globally acceptable farm operations, storage and marketing related transactions, etc. (Reddy and Ankaiah 2005; Moni 2006; Rao 2007; Aker 2011; Nonso 2012; Magesa et al. 2014).

According to recent national sample survey reports, local knowledge system accessible to farmers is primarily based on accumulated knowledge of input dealers, credit organizations, traditional extension workers and non-government organizations apart from audio and visual broadcasts from subject experts (NSSO 2003, p. 7, 2014, p. 38). The existing system is inadequate due to limited access to information for decision making. Many of these limitations can be overcome through appropriate intervention of Information and Communication Technology (ICT) (Rao 2007; World Bank 2012). The required agriculture-related information is, however, available in pockets with multiple organizations. The information relevant to farmers needs to be integrated and provided to farmers as per their needs. ICT can facilitate integration of relevant data repositories and promote adoption of best practices in farming sector as being followed in many developing countries (Rao 2007; Glendenning and Ficarelli 2012; NAIP 2014).

The National Agricultural Policy (NAP) of India, which was announced in 2007, reflects upon government's intent to develop ICT-based support system for improving capabilities of farmers. Substantial resources have been allocated for e-Governance in agriculture as part of the e-Governance plan of India (www.mit.gov.in). Concerted efforts are being made, particularly by the central government, to improve service delivery at the grassroots through large-scale e-Governance projects. A major initiative under NeGP is Agricultural Mission Mode Project (AMMP), which is aiming at implementing a cluster of ICT enabled farmer centric services in different states of India. The project has to overcome several challenges before it is effectively implemented (Suri 2014).

The NeGP of India has been viewed as highly risky initiative by the Gartner Industry Research (Harris 2007). In Indian context, there are additional challenges which include a considerable number of poor and illiterate farmers,

agriculture-related government organizations operating in silos, lack of coherence among such organizations in a federal government system where agriculture is a state subject, lack of required user level basic IT skills with the government functionaries and beneficiaries, etc. apart from the general technical challenges associated with e-Governance projects. It has been pointed out that the technological challenges in e-Governance projects are of much lesser significance (Suri 2014) as compared to non-technological issues. The poor performance of e-Governance initiatives asks for keeping the ground realities into view while planning for such projects. It has been acknowledged by the government that the lack of implementation capacity at the operational level is one of the key reasons for poor implementation of government plans (Suri and Sushil 2012; Planning Commission 2013: pxv; Suri 2016).

In this chapter, competence level of actors and performance of e-Governance are analyzed by studying a few ongoing e-Governance initiatives related to agriculture. The actors are viewed as government officials involved in the planning and implementation of these projects and the associated target beneficiaries. The chapter is based on a detailed cross-case analysis of six major agriculture-related projects in India from the perspective of planning and implementation (Suri 2009).

The chapter is developed with the following limited focused objectives:

- To bring out constructs for measuring competence level of actors in e-Governance context.
- To analyze competence level of actors and e-Governance performance.

The development of performance construct has been discussed in-depth by Suri and Sushil (2011). The same is included here in brief for better understanding of the readers.

The lessons learnt are expected to be useful to the practitioners for effectively implementing AMMP in particular and other MMPs in general as part of the NeGP. It is clarified here that for the purpose of this chapter, the terms e-Governance and e-Government are used without any distinction. However, the popular term in India being e-Governance, the same is preferred for the chapter title.

This research-based chapter is organized into eight sections. These include introduction, literature review, methodology, research variables, opinion survey, analysis, significance of study and concluding remarks.

16.2 Literature Review

In order to develop insights into the likely influence of competency levels of actors on e-Governance project performance, a review of literature has been conducted. The same is summarized as follows:

16.2.1 Competence Level of Actors

The usage level of e-Government has been found to be low particularly among the disadvantaged group who needs to draw more benefits from e-Government (UN 2012). An earlier survey has found that one of the three prerequisites of realizing the potential of e-Government is human capital (UN 2003). OECD (2003) has emphasized on possessing of basic IT literacy as well as an understanding of information management and the information society by the officials. According to Heeks (2003), competencies needed for e-Governance can be divided into four main components, viz. systems development competencies, project/change management competencies, intelligent customer competencies and operational competencies (ability to operate and maintain e-Government systems and basic computer literacy skill). The requirements of new competencies create a gap between the competencies possessed by the staff and those they need (Heeks 2006, p. 101). Das and Chandrashekhar (2006) have emphasized upon the need for building skilled human capacities for meeting the requirements of different phases of e-Governance project life cycle across different tiers of the federal government system being followed in India. The key areas for capacity building have been identified as policy formulation, building institutional linkages, professional expertise, project monitoring and control, etc. Various training programmes have been suggested to build required capacities. These include e-Governance Champions, Chief Information Officers, Chief Technology Officers, users in government departments and external users. It is, however, to be kept into view that the present pool of employees need to be equipped with required basic minimum IT skills for making meaningful contribution to the e-Governance projects. Employees need to be receptive and willing to update their skills regularly (Nandan 2008, pp. 44–50). According to Gartner Industry Research, skills and receptiveness of the government officials will pose a huge hurdle to the intended capacity development for dealing with the massive transformation of government business processes and practices envisaged under NeGP (Harris 2007). NeGP emphasizes on training of existing government employees on general use of computers (e-mail, word processing, spreadsheets, Internet, etc.) as well as capacity building of actual beneficiaries, especially in terms of enhancing their awareness level about the services. While capacity building programme of NeGP is still at a preliminary stage, general IT training of government officials in India is already an ongoing process under different programmes. Officials at various levels have been getting IT training through programmes conducted by the National Informatics Centre (NIC) as well under departmental programmes. This is as per the emphasis laid in the minimum agenda of e-Governance being implemented in various departments (http://darpg.nic.in). Effectiveness of such trainings for making use of the ICT infrastructure created in various departments needs to be explored through independent surveys as it will help in fine-tuning of the NeGP approach for capacity building.

The resource poor farmers in developing countries such as India seem to rely more on personal contacts for farming related information as compared to other

sources. The national survey of farmers/agricultural households in India reflects the challenges involved in making the large farming community in India accustomed to use of ICT (NSSO 2003, p. 7, 2014, p. 38). Inadequately skilled citizens act as barriers to e-Government (Marche and McNiven 2003). Besides connectivity for all, intensive training and sensitization of intended beneficiaries need to be an essential component of an e-Governance initiative, especially in cases where the target beneficiaries belong to illiterate community. There are examples at national as well as international level where such an approach has been adopted. The evaluation of AKSHYA and KAVERI projects illustrates the importance of training of actual beneficiaries on the usage of services. UNDP (2001) cites a successful USAID project in Guatemala where farmers themselves were trained to download market prices information and disseminate further among the peer group. Based on an evaluation of community telecentres in Uganda, Kyabwe and Kibombo (1999) have found that "constant sensitization of the community, as opposed to a one-time sensitization for creating awareness and sense of telecentre ownership among the local communities is crucial for the success and sustainability of such initiatives". There are several similar examples from across the world which emphasize on development of skills and competencies of the farming community to take advantage of the technology enabled innovations in the agriculture sector (World Bank 2011).

The important role played by "e-Champions" in successful e-Governance projects is emphasized in many studies. The citizen centric nature of e-Governance projects implies that lessons have to be learnt from strategies adopted by customer-centred-organizations in the corporate sector. A key strategy of such organizations is to build direct contact with employees and customers unlike the practice of managing from a distance. Leaders who are innovative and adept in change management are far more popular among employees as compared to ones who believe in dictatorial style of management (Loo 2002). This is reflected in flexibility maturity model where flexibility of actors is shown at higher level of maturity than the process flexibility (Sushil 2016). Gouscos et al. (2007) have emphasized on the need for selecting suitable "e-leaders" who are good at sensing the demand of citizens and businesses and work closely with them to serve their needs. Successive UN Global e-Government Surveys have pointedly highlighted the importance of IT enabled citizens for ushering participatory governance and customized service offerings.

16.2.2 e-Governance Assessment

The assessment of e-Governance projects is an emerging research area. The traditional measures for analyzing project performance such as financial measures are found to be unsuitable for this context as the thrust here is not on returns on investment but on service delivery and governance reforms. To develop basic

understanding about governance reforms linked benefits accruing from such projects, published evaluation reports of popular state level projects in India were studied. These projects include: AKSHYA-Networked Multi-purpose Community Information Centres in Kerala, BHOOMI-land records computerization in Karnataka, CARD-registration of property in Andhra Pradesh, e-Procurement Exchange—online tendering in Andhra Pradesh, e-Seva—one stop shop for many services in Andhra Pradesh, FRIENDS-one stop centre for paying taxes and utility bills in Kerala, GYANDOOT-agriculture and other relevant services in rural areas in Dhar district of Madhya Pradesh, KAVERI-Computerization of sub registrar offices in Karnataka, Lokvani-Transparent governance including grievance handling in Uttar Pradesh, and Nagarpalika—General administrative services including grievance redressal in Gujarat. The reports throw light on various benefits accruing to citizens due to IT enablement of government services (DIT 2003, 2004, 2005; Bhatnagar 2004). Interested readers are referred to published articles (Suri and Sushil 2011) and (Suri 2014, 2016) wherein the performance variables, applicable in the context of this study, have been identified and mapped with the literature. The same is not reproduced here due to space constraints.

16.3 Methodology

In order to take-up this study, the literature was reviewed on relevant areas which led to selection of six agriculture related projects having wide geographical spread and which were operational since at least one year when the main study was initiated in 2005. The short-listed projects included: AGMARKNET (Empowering farmers with market information: www.agmarknet.nic.in), Kisan Call Centre (Providing agricultural extension support to farmers: www.agricoop.nic.in/PolicyIncentives/kisanCallfirst.htm), DACNET (Networking several field offices of central agricultural department for effective information exchange: www.dacnet.nic.in), GrapeNet (Online system integrating various stakeholders in the grape export from India: www.apeda.com), CROP (Reforming of processes registration of pesticides in India: www.cibrc.nic.in) and Integrated Fertilizers Management Information System (Meeting farmers' requirements of quality fertilizers: www.fert.nic.in).

An understanding about the basic competencies expected to be possessed by the key actors involved in these projects is developed through a review of documents. Actors are categorized as government officials and the intended beneficiaries. Government officials are further classified as those involved in planning and implementation, respectively. The knowledge developed by studying e-Governance literature and documents pertaining to the identified projects coupled with practical experience of executing such projects have provided the base for conceptualizing constructs to measure competence level of actors and project performance. The research is designed as simple and implementable by considering only those basic competency and performance aspects that were uniformly applicable in

the selected projects. Three questionnaires were developed to capture response of different actor groups about their competence levels and perceptions about performance.

16.4 Research Variables

The variables for the study are based on review presented above, a field study of an ongoing e-Governance project (Suri 2005) and practical experience of executing projects. These are explained as follows:

16.4.1 Macro Variables

The research variables 'Performance of e-Governance' (Suri and Sushil 2011; Suri 2014) and 'Competence level of actors' are defined as follows:

16.4.1.1 Competence Level of Actors

This variable captures ability of actors to use the project specific e-Governance service, their ability to make use of available computing facilities and demonstrating contact leadership, i.e. maintaining constant touch with actors operating at lower layers.

16.4.1.2 Performance of e-Governance

Unlike traditional measures, which consider a project as successful if there is no cost overrun or schedule slippage, the measures proposed here are based on systems viewpoint, i.e. an e-Governance project is considered as performing well if it has successfully achieved the intended outcomes. In the context of this study, the identified projects are expected to bring transparency in government functioning, promote interaction among stakeholders, strengthen decision support at different levels and deliver services in an efficient manner. The performance variable is conceptualized accordingly.

16.4.2 Micro Variables

The micro research variables constituting the macro research variables, viz. 'Competence level of actors' and 'Performance of e-Governance' are defined here under respective categories:

16.4.2.1 Competence Level of Actors

Under the macro variable 'Competence level of actors', three micro variables were identified to capture operational competence of planners and implementers, which are explained as follows.

Ability to use project service The variable captures the extent to which an officer is equipped to use the service offered. The related questions are extent of familiarity with various features of the service and ability to use these features.

Ability to use computing facilities The related questions are extent to which the government official is able to use computers for e-mail, Internet browsing, word processing, data analysis, improving one's productivity/efficiency, interacting with government and interacting with industry.

Ability to maintain contact This variable captures how far a government official is able to demonstrate contact-based leadership quality. The planners are asked about the extent to which they are able to remain in direct touch with implementers and beneficiaries. Implementers are asked the extent to which they are able to remain in direct touch with beneficiaries.

All the above three micro variables pertaining to 'Competence level of actors', are used in case of planners' and implementers' analysis. In case of beneficiaries, 'Competence level of actors' is represented by 'Ability to use project service', keeping into view wide variations in the project-wise nature of beneficiaries and their context being different from that of government officials.

16.4.2.2 Performance of e-Governance

The micro variables constituting the macro variable 'Performance of e-Governance' (Suri and Sushil 2011; Suri 2014) include: *efficiency* (fast execution of the core process, simplification of government procedures, reduced paper work and decreased communication cost), *transparency* (easily accessible, reliable, comprehensive and fairly delivered service), *interactivity* (improved interactions with internal and external actors) and *decision support* (improved planning and decision support, better monitoring and control).

16.5 Survey of Planners, Implementers and Beneficiaries

The processes involved in conduct of opinion surveys followed by reliability and validity analysis of constructs are summarized as follows:

16.5.1 Questionnaires Development

The context of the six identified projects in terms of their objectives and expected deliverables was studied by reviewing the system write-ups and interacting with project officials. Commonly applicable standardized questions related to competence level of actors and performances were framed. For ensuring clear interpretation by the respondents, the standard performance-related questions were qualified with project specific contexts. The questionnaires were subjected to face, criteria related and content validity tests (Kerlinger 1983, p. 458) for fine-tuning before launching the survey. The validation of questionnaires was followed by pre-testing of questionnaires. The learning from a pilot study (Suri 2005) and subsequent field studies helped in better wording of the questions and removal of ambiguity in questions. A Likert scale was used which was transformed into five contiguous classes as 0–0.2 (Nil), 0.2–0.4 (to a small extent), 0.4–0.6 (to a medium extent), 0.6–0.8 (to a large extent) and 0.8–1.0 (to a very large extent). Observed data was mapped accordingly for conducting statistical analysis. Most of the prospective respondents in the 'planners' category were generally approached in person. This was feasible as the planners in each project were mostly centrally located and their number in each project was also small. Different methods were adopted to get adequate response from implementers and beneficiaries which included approaching them in workshops, and farmers' training programmes that are regularly conducted in a few related institutes besides seeking response through e-mail wherever feasible. Valid responses were submitted by 36 planners, 107 implementers and 139 beneficiaries from different parts of the country.

16.5.2 Reliability and Validity Analysis

The internal consistency of constructs is measured using Cronbach's Alpha value (Kerlinger 1983, pp. 451–452). The values for 'Competence level of actors' in the case of planners, implementers and beneficiaries are found to be 0.74, 0.85 and 0.89, respectively. Corresponding values for the 'Performance of e-Governance' construct were 0.94, 0.92 and 0.92, respectively (Suri 2014). These values are above the recommended threshold level for such empirical studies (Hair et al. 2006, p. 118). The constructs are validated using factor analysis (Kerlinger 1983, pp. 659–678; Hair et al. 2006, pp. 90–114). Cumulative extracted factor loadings greater than 50 % are considered practically significant (Hair et al. 2006). For the variable 'Competence level of actors', the loadings are found to be 54.1 and 56.4 % for planners and implementers, respectively. In the case of beneficiaries factor analysis was not required as there is only one element in the construct. The respective computed percent values of factor loadings for the performance variable are 80.9, 72.3 and 72.6 % which are acceptable. At the micro level, it has been tested that in general all the constituting items are corresponding to the respective

constructs and filtering through the threshold of 50 % of cumulative percentage of variance (Kerlinger 1983, pp. 659–678; Hair et al. 2006, pp. 90–114). The constructs are, therefore, treated as validated.

16.6 Univariate Analysis and Discussion

Univariate analysis has been carried out for the conceptualized macro and micro variables. The computed values include mean, coefficient of variation, range and quartile percentiles for the planners, implementers and beneficiaries of the six projects. The means and medians for all the variables in the respective three actor segments are found to be of the same magnitude, implying thereby that the respective distributions are near symmetric (Table 16.1).

16.6.1 Univariate Analysis of Competence Level of Actors

As per the observed mean values (Tables 16.1, 16.2, 16.3 and 16.4), the overall competence level of implementers is found to be lower (medium extent) as compared to the planners (large extent). This is found to be on expected lines as planners are located at headquarters where they are in a better position to use computing facilities as well as project service. The observed values reflect medium extent of overall measures of competency levels with respect to the beneficiaries category. The project beneficiaries belong to farming community as well as companies. As such, the variation with respect to their situation and competency levels is expected to be high as is reflected by higher value of respective coefficients of variations. The first quartile values (small extent), the third quartile values (large extent) and the ranges of observed values varying from 0–1 also reflect the two extremes of beneficiaries—those not being able to use service at all and those being able to make use of service to a large extent.

The observed means of first two micro variables, viz. 'Ability to use project service (ABS)' and 'Ability to use computing facilities (ABC)', belong to the 'very large extent' range in the case of planners. The means pertaining to questions related to ABS, viz. familiarity with features of service and ability to use the features are also belonging to the same range. Similar means in respect of questions related to ABC reflect that planners are able to make use of the available computers effectively for using e-mail, Internet, word processing, improving their productivity and interacting with government agencies. Usage of computers for interacting with industry is rated as of medium extent by the planners. The mean of third micro variable, viz. 'Ability to maintain contact with implementers and beneficiaries (CNTP)', is found to be of medium extent only. Average values pertaining to constituent questions about their ability to maintain direct touch with field/operational level staff and beneficiaries also belong to the medium range.

Table 16.1 Univariate statistical analysis for macro variables for various actors

Macro variable	N valid	Mean	SE (mean)	SD	CV (%)	Range	Min	Max	Percentiles		
									25	50	75
Planners											
Competence level of actors (CLP)	36	0.76	0.02	0.14	18.42	0.50	0.50	1.00	0.66	0.75	0.88
Performance of e-Governance (PERFP)	36	0.70	0.03	0.17	24.28	0.69	0.31	1.00	0.59	0.70	0.82
Implementers											
Competence level of actors (CLI)	107	0.55	0.02	0.17	30.91	0.72	0.20	0.92	0.42	0.54	0.68
Performance of e-Governance (PERFI)	107	0.60	0.02	0.18	30.00	0.78	0.12	0.90	0.48	0.63	0.74
Beneficiaries											
Competence level of actors (CLB)	139	0.56	0.02	0.27	48.21	1.00	0.00	1.00	0.38	0.63	0.75
Performance of e-Governance (PERFB)	139	0.51	0.02	0.20	39.22	0.93	0.00	0.93	0.36	0.52	0.66

Table 16.2 Univariate statistical analysis for planners related micro variables

Planners

Variable	N valid	Mean	SE (mean)	SD	CV (%)	Range	Min	Max	Percentiles		
									25	50	75
Competence level of actors (CLP)	36	0.76	0.02	0.14	18.42	0.50	0.50	1.00	0.66	0.75	0.88
Ability to use project service (ABS)	36	0.89	0.02	0.14	16.11	0.50	0.50	1.00	0.75	1.00	1.00
Ability to use computing facilities (ABC)	36	0.80	0.02	0.14	18.10	0.50	0.50	1.00	0.71	0.83	0.90
Ability to maintain contact (CNTP)	36	0.59	0.04	0.27	44.84	1.00	0.00	1.00	0.41	0.63	0.75
Performance of e-Governance (PERFP)	36	0.70	0.03	0.17	24.28	0.69	0.31	1.00	0.59	0.70	0.82
Efficiency (EFFI)	36	0.73	0.03	0.19	26.16	0.69	0.31	1.00	0.63	0.75	0.86
Transparency (TRANSP)	36	0.73	0.03	0.16	22.41	0.69	0.31	1.00	0.69	0.75	0.81
Interactivity (INTER)	36	0.61	0.04	0.22	35.41	0.92	0.08	1.00	0.50	0.63	0.75
Decision support (DECSP)	36	0.63	0.04	0.22	34.08	0.75	0.25	1.00	0.50	0.63	0.75

Table 16.3 Univariate statistical analysis for implementers related micro variables

Implementers

Variable	N valid	Mean	SE (mean)	SD	CV (%)	Range	Min	Max	Percentiles		
									25	50	75
Competence level of actors (CLI)	107	0.55	0.02	0.17	30.91	0.72	0.20	0.92	0.42	0.54	0.68
Ability to use project service (ABS)	107	0.66	0.02	0.22	33.74	0.75	0.25	1.00	0.50	0.75	0.75
Ability to use computing facilities (ABC)	107	0.57	0.02	0.21	36.13	0.90	0.10	1.00	0.40	0.60	0.70
Ability to maintain contact (CNTI)	107	0.40	0.03	0.27	66.06	1.00	0.00	1.00	0.25	0.50	0.50
Performance of e-Governance (PERFI)	107	0.60	0.02	0.18	30.00	0.78	0.12	0.90	0.48	0.63	0.74
Efficiency (EFFI)	107	0.64	0.02	0.18	29.03	0.81	0.19	1.00	0.50	0.69	0.81
Transparency (TRANSP)	107	0.63	0.02	0.21	33.22	0.94	0.06	1.00	0.50	0.69	0.75
Interactivity (INTER)	106	0.47	0.02	0.19	41.33	0.92	0.08	1.00	0.33	0.50	0.64
Decision support (DECSP)	107	0.56	0.02	0.21	37.07	0.88	0.13	1.00	0.38	0.50	0.75

Table 16.4 Univariate statistical analysis for beneficiaries related micro variables

Beneficiaries

Variable	N valid	Mean	SE (mean)	SD	CV (%)	Range	Min	Max	Percentiles		
									25	50	75
Competence level of actors (CLB)	139	0.56	0.02	0.27	48.21	1.00	0.00	1.00	0.38	0.63	0.75
Ability to use project service (ABS)	139	0.56	0.02	0.27	48.21	1.00	0.00	1.00	0.38	0.63	0.75
Performance of e-Governance (PERFB)	139	0.51	0.02	0.20	39.22	0.93	0.00	0.93	0.36	0.52	0.66
Efficiency (EFFI)	139	0.56	0.02	0.22	38.47	0.94	0.00	0.94	0.44	0.56	0.75
Transparency (TRANSP)	139	0.51	0.02	0.23	46.04	1.00	0.00	1.00	0.31	0.50	0.69
Interactivity (INTER)	136	0.44	0.03	0.30	68.04	1.00	0.00	1.00	0.25	0.50	0.75
Decision support (DECSP)	139	0.46	0.02	0.23	50.36	1.00	0.00	1.00	0.25	0.50	0.63

This hints at an important gap of prevailing set-up of distant leadership being practiced in such projects. This gap needs to be plugged for achieving higher performance level.

In the case of implementers, the mean of first micro variable belongs to the [0.6, 0.8) (large extent) class whereas average values of other two micro variables belong to the [0.4, 0.6) (medium extent) class. Means of questions related to ABS, viz. familiarity with features of service and ability to use the features are also belonging to the same range. Similar means in respect of questions related to ABC reflect that implementers are able to make use of the available computers for using e-mail, Internet, word processing and improving their productivity to a large extent. Usage of computers by implementers for interacting with government agencies as well as industry is observed as of medium level. The mean values pertaining to questions related to ABS and ABC are lower than the corresponding observed means in case of planners. The differences range from 33 to 35 % in case of ABS. In case of ABC, the maximum and minimum observed means pertain to using computers for e-mail and interacting with industry, respectively both in the categories of planners and implementers. The observed difference is 40 % for both the questions. The observed mean of third micro variable 'Implementers ability to maintain contact with beneficiaries (CNTI)' belongs to the medium range with the value being the lower class limit. This hints at the gaps in interaction between implementers and beneficiaries which need to be addressed for improving the project performance in general. The overall differences in the means of constituting micro variables suggest the difference in competency levels of planners and implementers. Comparing the three groups of actors in terms of 'Ability to use project service (ABS)', the competency level of planners is observed to be higher than that of the implementers, which in turn is observed to be higher than that of the beneficiaries.

16.6.2 Univariate Analysis of Performance of e-Governance

The average performance value, based on the response of implementers, pertains to [0.6, 0.8) (large extent) class which is about 17 % lower than the observed average performance value as per planners. The overall average project performance according to beneficiaries is lower than the corresponding observed values pertaining to planners and implementers.

The observed values, therefore, reflect that among the three actor groups studied, the beneficiaries are experiencing the least value from the e-Governance projects. On the other hand, planners appear to be highly satisfied from the performance of e-Governance projects. These observed values appear to be supporting the prevailing hierarchical organizational structure which is typical of government departments where project conceptualization and arrangement of required project resources is generally done at the top level. Such higher level officials may be inclined to have opined in favour of higher performance to justify the resources

spent. Further, in comparison to implementers and beneficiaries, who usually operate under challenging field conditions, the planners may be actually experiencing relatively better working environment at their level due to the ICT infrastructure created under such projects. At the micro level, the survey reflects that all the three actor types are of the view that achievements have been more in terms of efficiency and transparency as compared to interactivity and decision support.

16.7 Significance of Research and Limitations

Significance of research in terms of research contribution and implications besides research limitations are discussed as follows:

16.7.1 Research Contribution and Implications

This study has attempted to develop measures for 'Competence level of actors' and 'Performance of e-Governance'. Univariate analysis based on three independent surveys has thrown light on the gaps in competence levels of key actor groups (planners, implementers and beneficiaries), and their perception levels about e-Governance performance. The analysis reflects the significance of clearly defining project outcomes—particularly from the perspective of beneficiaries—while formulating project plans. Performance of projects needs to be monitored in terms of achievement of these intended outcomes. Similarly, the construct for measuring 'Competence level of actors' is expected to sensitize the practitioners for giving thrust on focused capacity building programmes to improve the abilities of the key actor groups to use computing facilities and project service features besides improving the ability of planners and implementers to maintain contact with the actors operating at lower layers. Such an approach to re-design capacity building programmes is expected to help in continuous performance improvement through an effective feedback system.

From the viewpoint of researchers, the validated constructs can be further used to explore the relationship between the two by taking 'Competence level of actors' as independent variable and 'Performance of e-Governance' as dependent variable. The following macro and micro level hypotheses of association are formulated for statistically examining the relationship between the conceptualized macro/micro variables related to competence level of actors with the performance of macro/micro variables in the context of the study.

The three macro level alternate hypotheses of association, conceptualized on the basis of this study, are:

H_aA: Competence level of actors predict performance of e-Governance.

The respective null hypotheses are:

H_0A: Competence level of actors does not predict performance of e-Governance.

where actors (A) $\in$ {Planners, Implementers, Beneficiaries}.

Further, the general micro level alternate hypotheses of association in the case of planners, implementers and beneficiaries are of the form:

H$_a$Aij: ith micro variable predicts jth micro variable of performance; where actors (A) $\in$ {Planners, Implementers, Beneficiaries}; i $\in$ {ABS, ABC, CNTP}; j $\in$ {EFFI, TRANSP, INTER, DECSP}.

The predictive relationships which emerge from such an analysis may be interpreted in the context of each of the six identified projects using Interpretive Matrix Tools (Sushil 2005) to arrive at the influencing links between competence-related independent variables and performance-related dependent variables.

16.7.2   Limitations

A major constraint faced in conducting the study has been the lack of similar past studies based on cross-case analysis. As such, the proposed constructs can be further enriched by analyzing a few more live e-Governance projects in different sectors.

16.8   Conclusion

In this chapter, two constructs have been discussed to measure competence level of key actors (planners, implementers and beneficiaries) and project performance in case of agriculture related large e-Governance projects. The study results reflect upon the gaps related to actor competencies and e-Governance performance. Lessons from the study can trigger corrective actions in terms of designing effective capacity building programmes for government officials and beneficiaries. Such an intervention in the grassroot level on-going and forthcoming e-Governance projects can help in ensuring meaningful realization of the intended benefits from such projects. The study findings have also provided a base for proposing hypotheses of association for testing predictive relationship between competence and performance related conceptualized variables.

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Chapter 17
Open Innovation: A Flexible Practice for Intellectual Property Management in Pharmaceutical Sector

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Abstract The paradigm shift in management from part to whole has led to a complete rethinking of the working system in the organizations today. Coupled with the globalization-led competitiveness, a pressing need for flexibility in management has become imperative. Open Innovation (OI) is one such practice which the organizations today are looking forward to cope with change, respond quickly to threats and opportunities and manage diverse and decentralized operations. OI which allows for the use of internal and external resources both, is being adopted across different organizations amidst diverse challenges to be met. The life sciences sector is catching up with the OI paradigm though the change is gradual due to the challenges in breaking free from the shackles of traditional vertically integrated model. The pharmaceutical firms are grappling to adjust in this environment with administrative, regulatory, legal and management of intellectual property (IP) challenges. With this background, the present chapter aims to explore the flexibility of organizations in adopting and using the open innovation practice with special reference to intellectual property management (IPM). The discussion is centered on the main theme "open innovation as a flexibility exercise in managing the intellectual property with special reference to patents in the pharmaceutical sector". Based on the secondary data, i.e. varied sources of literature a conceptual discussion on the paradoxical nature and the synergistic effect of open innovation (OI) and intellectual property (IP) is attempted in this chapter. What different connotations/factors of flexibility are exercised in the pharmaceutical organizations to synergize the two processes and what challenges need to be handled in this context, are examined here. The findings of this study, though mainly contextual

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with partial empirical exercise may add to the conceptual understanding of open innovation and flexibility.

Keywords Business models · Flexibility management · Intellectual property management · Open innovation · Patents

17.1 Introduction

Today's globalization-led competitiveness has brought a paradigm shift in the management practices of organizations making flexibility imperative for their survival. This applies very aptly in case of the growing importance of intangible assets like intellectual property (IP—patents trademarks, copyrights, etc.) and the challenges associated with their management. Open innovation (OI) is one such practice, introduced by Chesbrough (2003), which growing numbers of firms in different sectors (IT, electronics, pharmaceuticals) are adopting as a strategy for getting access to skills and new technologies to enhance their capacity for innovation.

How organizations use OI as a flexibility exercise for IP management has numerous dimensions to explore from identifying the existing business models, the stages at which OI is implemented to the challenges in synergizing the two. It is the seminal papers by Chesbrough (2003); Chesbrough et al. (2006), on the experiments in OI, the reflections by Hall (2010) on the paradoxical nature of OI and IP with a possibility for their co-existence and the identification of three core OI processes (Gassmann and Enkel 2004) seeking to theorize the concept of OI, which served as the motivation behind this chapter.

Open innovation, which has changed the concept of a lone inventor in a garage to a collaborative group spread across boundaries of firms, has led to the reorientation of the business models. The experiment with OI varies in form, from sector to sector depending on the culture, requirements, technology needs, policy, and regulatory matters. It is an important requirement in managing IP especially in a science-based and knowledge-intensive sector as pharmaceutical sector. In current times of patent expiry of blockbuster drugs and the collapsing of traditional closed model of innovation, the patent dependent pharmaceutical sector needs to incorporate flexible management system by implementing the OI business model. Antecedents in open innovation-based business models in this sector are exemplified in the literature for some of the leading firms like Pfizer, GSKM and Eli Lilly based on case study conducted at the firm level (Chesbrough 2003; West et al. 2014; Hall 2010).

In this chapter, an attempt has been made to study the flexibility factors as exercised in OI practice in managing the IP in the pharmaceutical firms. The chapter, therefore discusses the concept of OI in the extant literature from a host of perspectives—the paradoxical nature of the OI and IP, the antecedents of co-existence of OI and IP and the research gaps in OI (defining this concept, identifying

its attributes and inadequacy in measuring OI). An exploratory exercise has been done to study the OI indicators in business models of pharmaceutical firms in India. Company websites/reports and the patent data (rarely used in OI study) have been used as the sources of secondary data.

17.2 Open Innovation and Intellectual Property Management: An Overview

Is OI a novel concept? Perhaps not, as many researchers in the field of strategy and innovation argue that the exchange of beneficial ideas and proficiency in order to facilitate the internal innovation process is a pre-existing phenomenon (Kielstra 2011; Wikhamn and Wikhamn 2013). Companies have been collaborating, sharing IP rights by contracting and licensing as well as recruiting and working close with academia for a long time (Melese et al. 2009). However, Chesbrough's study of OI paradigm in US industry in the late 20s coupled with Langlois' study (2003a). Christensen's study in 2006 highlighted "the growing need to obviate the vertical integration in the firms-the so called "closed innovation model" as proposed by Chandler in the early and mid-nineties."

Chesbrough's (2003) definition of OI as "use of the internal resources as well as the external resources by the firm/s" has led to the scholarly discourse on OI since a decade to the current times. Considered as both-concept/set of practices for profiting from the innovation, West et al. (2014) have suggested OI as a cognitive model too for creating, interpreting and researching the inflow and outflow of resources. Facing this new paradigm, firms are shifting their focus on external knowledge from "know how" to more on "know who" (Dubiansky 2006). This change is reflected in the statistics that 70 % of the firms practice OI with more than 1 % top management support as per the survey by of the large firm in US and Europe (Chesbrough and Brunswicker 2013). Despite the increase in interest in OI, the change from closed to open model is the biggest challenge for the firms (Chesbrough and Brunswicker 2013).

Since the last two decades, the intangible assets-IP (patents, trademarks and copyrights to name a few) has far outweighed the tangible assets in deciding the market value of the firms. They have been on the increase but whether to maximize their benefit or treat them as "Rembrandts in the attic" the metaphor used by Rivette and Kline (2000), are serious management challenges for the organizations. Management of IP under the OI paradigm has been pointed out by West et al. (2005) as an important research area though literature offers mixed responses on the role of OI in IPM and vice versa. For example, Keupp et al. (2012) have pointed out that IP as one of the factors that negatively affects the feasibility of OI while Hall's (2010) rhetoric on IPM and OI paradigm as two-edged sword actually suggests the synergistic impact of the two, i.e. OI helps in better management of IP. West and Gallagher (2006) investigated the likelihood that OI can provide firms with a greater return on their innovative activities and hence impact their holding

of IP. West et al. (2014) pointed out that since OI is being practiced within the context of IP institution as well, it merits attention to learn more about the prerequisites and limitations of open innovation.

This new system of innovation (OI) has been addressed from various perspectives by academicians and practitioners both: operationalization of measuring constructs and classification of OI processes (Chesbrough et al. 2006; Chesbrough and Brunswick 2013); the what (the content of OI), when (the context dependency) and how (processes) of OI (Huizingh 2011); the ways in which companies translate the management technology of OI into practice (Bianchi et al. 2011); differential success of OI even for different projects within the same company (Christiansen et al. 2013); different methods for the two different practices—technology exploitation and technology exploration (Vrande et al. 2009); and an integrated technology exploitation roadmap to support out-bound decisions (Lichtenthaler 2011). Wallin and von Krogh (2010) specify ownership issues in intellectual property an important concern amongst other issues (partner selection, group decision making) in the governance stage of Fetterhoff and Voekel's (2006) five-staged model. IP management is very challenging when other actors are involved (Luoma et al. 2010) which is the case in OI. Firms practice selective revealing strategies (Henkel 2006) based on rational choices of how much to share and with whom? In fact, in the survey of large firms in US and Europe, Chesbrough and Brunswicker (2013) found out that firms are much more likely to receive "freely revealed" information than they are to provide such information and inbound practices (IP in-licensing) are more commonly utilized than out-bound practices (IP out-licensing) firms engaged into open innovation practices have to learn how to maintain or modify their organizational boundaries, and how to reproduce or develop their strategic knowledge. Julien et al. (2011) opine that preserving this knowledge requires that actors play two contradictory roles: in controlling the in-house resources of the organizations and by supporting steps of what organizations must do to reproduce those resources. This requires a huge task for the managers in designing appropriate managerial tools to make OI initiatives a success. On the other hand, it opens up a vast area of research in this domain, to help managers with these tools. Lack of OI metrics is another big challenge. Podmetina, in their comprehensive literature review on measurement system for OI, have identified IP in various forms as indicators of OI either through secondary or primary data. For example, IPR protection, joint patent for collaboration and number of new classes in patent portfolio have been used as indicators of open innovation by various researchers.

These different strands of literature raise few overlapping research concerns but mostly divergent issues in the domain of OI and IP. Chesbrough et al. (2006) present a comprehensive list of such research concerns: How does OI differ within industry or between industries? Which firm characteristics are responsible for the varying degree of OI practices' adoption? What are the drivers of motivations (for the individuals) and incentives for the inventions to be made (at the firm level)? Do firms embracing OI generate more spillovers with higher commercialization rate? All these can form the basis of hypothesis-based empirical research which

is far from adequate in the domain of OI. Studies on developing countries (Asia, Latin America) are required to complement the findings of developed countries and generalize the theory on OI. Last but not the least, there is a need to move beyond case study approach and explore instruments as surveys linked with patent data and other possible sources of data (emails, knowledge exchanges, product catalogs and business plans of the company) for broadening the canvas of empirical studies on OI.

17.2.1 Open Innovation and Intellectual Property Management, the Pros and the Cons

The Pros As per Hall's insights into OI (2004), co-inventorship, collaborations and licensing are important indicators of OI and act as drivers of better management of IP. For example, co-inventorship has been found to be a cost-effective exercise for the firms since during the invention creation phase it spreads the cost of invention over a number of actors from the collaborating firms. This makes IP management easier. Hall's close observation of OI practice in some of the companies (IBM, Novotel and Philips) negates the paradoxical relation between OI and IP. Rather, the author argues that the skills of the managers in managing IP coupled with the growing attention to IP management have favoured the adoption of OI strategies in firms. This is further corroborated by Chesbrough in the case of Merck, a pharmaceutical firm where the access to external sources as academic institutes, companies and research institutes has enabled their scientists to create "virtual labs" to incorporate these resources. How IP system is used in a way conducive to OI practice is exemplified by Hall's remark "how the necessary codification of an invention or technology takes place when a patent is successfully applied for helps to structure collaboration agreements."

   The Cons The protection of IP, would seem to be at odds with the pursuit of OI. The exclusive nature of IP, (patents in particular) makes adoption of OI difficult for many of the firms and they continue with good IPM practices even in the absence of this practice (Hall 2010). Other concerns in the way of successful implementation of OI practice for IP management are: IP R&D, IP licensing and transfer, IP alliance, IP donation (giving IP for free). Each of these raise a gamut of issues at different stages of IP value chain. From the perspective of IP policy, some firms have a "no talk on patent" attitude which is generally a disabler to OI where the firms miss out on a range of potentially valuable external ideas that are as yet unpatented, or unpatentable altogether (Alexy et al. 2009). Another disabler for OI in IP management is "Medusa Effect" of IP where too stringent IP policies prohibit communication between internal and external researchers. Rather, the heavy patenting by companies creates patent thickets which pose barriers to collaborations. When IP is transformed from a means of capturing the value of innovation to an end in itself it becomes detrimental to OI.

17.2.2 Managers' Dilemma: Changing Intellectual Property from Disabler to Enabler of Open Innovation

Many companies find it difficult to align the two approaches—OI and IP. They often find that their IP strategy is a disabler of their OI efforts. Companies that know how to use IP strategically actually know the skill of transforming the disabler of their OI activities to enablers. Generally, IP is beneficial to OI when it is used more as a signaling device than as a control right. Licensing of IP is one of the most effective means for technology diffusion and it is becoming a new commercialization strategy in technology-based firms (Kollmer and Dowling 2004). Licensing thus, with an appropriate IP strategy can be an enabler of OI activities (Alexy et al. 2009). In IT firms like IBM and ASUS, cross licensing as a practice of OI has been used to minimize the cases of litigation between firms. Cooperative R&D such as developing cooperation projects between enterprises or building up R&D center at university for Industry-University cooperation is an important route for obtaining new IP in OI. The practicing manager is not expected to have knowledge of all the foundation disciplines rather he can adapt his specialized knowledge to use the evolving paradigm. He can exercise a flexible discretion for the management of IP through OI practice.

17.2.3 Open Innovation as a Flexibility Exercise in the Management of IP

Open innovation actually entails a flexible business model where both external and internal ideas mingle to result in new product innovation (Hunter and Stephans 2010). The exchange process helps the organizations to optimize their output in a number of ways. OI practice varies with sectoral differences, resource differences and the firm level differences. The flexibility in OI model is a very context specific exercise in the IP management of the organizations. As outlined by Armstrong in 1993, flexibility management refers to the organization's better ability to cope with change, tackle threats and opportunities quickly and manage diverse and decentralized operations. Researchers have thus studied this flexibility factor from numerous perspectives. For example, the climate of openness has been identified as a facilitating factor in creating new and continuous knowledge in order to meet the future competitive environmental changes. Kak (2004) through the two case studies of pharmaceutical firms found out the issues related to core competence development, organizational learning, strategy formulation with core competence, and the role of flexibility in strategy formulation. There is a wide variety of connotations/factors of flexibility management, with no generic solution rather a "sui generis" solution to be adopted to explain this phenomenon (Sushil 1997, 2012, 2014, 2015a). The open innovation approach offers one such route for gaining strategic flexibility in the strategic process and creating a critical momentum in innovation (Gassmann and Enkel 2004; Sushil 2015b).

The management of IP is also undergoing a similar paradigm shift from closed system of protection to an open innovation system where IP is managed in many ways: from no IP (open source), "shared IP" as in public–private partnership to the governance mechanisms for IP protection during collaboration. Lundie, Director, R&D at Pfizer, Canada Inc. defines OI as a "free flow of IP". This requires broad knowledge of the various potential elements of an OI as well as a flexible attitude in applying these concepts of OI (Alexy et al. 2009; Christiansen et al. 2013). In lieu of focusing on individual patents and restricting the ownership to either an individual or the company, in OI, clear rules are made for dealing with the IP generated jointly especially in context to determining the scope of the joint efforts. For example, deciding on which IP is jointly owned by all companies and which IP solely belongs to a particular company? (Alexy et al. 2009). Protocols for ownership of the generated IP (co-patenting, licensing or exclusive ownership) and their transfer/commercialization are major concerns of OI practice in managing IP. All these call for a flexibility exercise by the managers.

17.2.4 Pharmaceutical Sector: Paradigm Shift in Business Models with Efforts to Synergize OI and IP

Over the past decade R&D productivity in the pharmaceutical firm has suffered heavily with the change in business models, IP regulation, soaring R&D expenditures and the declining number of approved new medicines per year (looseness). In an industry, where discovering and commercializing a new drug can take over 10 years and cost more than $1B, this continued decline does not augur too well for the sustainability of innovation. The pharmaceutical firms have to look beyond their walls and tie up even with their competitors (adjustments). Moreover, with increased cost, risks and patents expiry, the ability to discover and commercialize new blockbusters is getting increasingly rare. The pharmaceutical companies must rapidly adapt to survive (adaptability, non-rigidity factor). The pharmaceutical companies are re-evaluating their business models to tap the opportunities for getting access to new tools, technologies and ideas from external sources as academic institutes to transform their basic research clinical research (Responsiveness factor). All these developments are forcing the pharmaceutical firms to look towards OI models (openness).

Pharmaceutical firms are categorized as the "R&D integrated network" type organization on the basis of their highly dispersed R&D centres (Gassmann and von Zedtwitz 1999). While on one side, selective tapping of excellence from dispersed research centres is an advantage of such a network, on the flip side, it entails high costs in terms of coordination for achieving knowledge diffusion and integration (Hedlund and Ridderstråle 1995). Herein lies the biggest managerial challenges. How to do it? When, how, with whom, with what purpose, and in what way should they cooperate (Huizingh 2011)? OI entails managers make new decisions in developing and exploiting innovation activities in such situations *(broadening factor).*

Table 17.1 Selected flexibility factors defined for the purpose of this study

	Flexibility factors (FF) for OI	Operationalization of the FF in context to the discussion on OI in pharma firms
1	Adjustment	In terms of adjusting with the decreased costs and decreased expenditure on R&D
2	Openness	In terms of being open to negotiate and form tie-ups/collaborations
3	Looseness	In terms of loosening control over people and knowledge through decentralized activities
4	Adaptability	In terms of adapting to the change in business environment locally and globally
5	Non rigidity	In terms of IP sharing, licensing (which maybe conditional) and joint ownership
6	Broadening	In terms of making new decisions for developing and exploiting innovation activities
7	Responsiveness	In terms of planning research in response to the societal needs and market requirements

Pharmaceutical firms and top universities usually adopt two types of OI strategies—"research clubs"—collaborative agreements or consortia as per the findings of Alexy et al. (2009) in their survey research "Does OI cripple IP"? This model is being increasingly applied in the pharmaceutical sector to address the "innovation deficit", to spread the costs and risks of drug development areas through collaboration which is at the core of OI approach (Salah and McColluch 2011).

This core process of OI has been used by some of the global pharmaceutical giants to gain success in managing IP within OI paradigm. For example, Pfizer and Eli Lilly (refer to Table 17.1). Glaxo Smith Kline's model of conditional collaborations with biotech companies (where limited research is carried out with guidance from GSK) has been examined in detail by the UK~IRC researchers' (Cosh et al. 2005). This model, Centre for External Drug Development (CEEDD) serves the dual purpose of exclusive license to GSK and running a pipeline of drugs (the size of which rivals the number of similar in-house projects at GSK), at much lower organizational cost. Centres for Therapeutic Innovation (CTI) of Pfizer marks a departure of its vertically integrated group into smaller decentralized groups which are truly global. The firm has its governance protocols in place for balancing OI and IP. For example, in cases of joint inventions, these are jointly owned but their licensing is done from the institution. Other joint assets revert to the institution only if Pfizer declines to license (MaRS report 2011). The compound may be licensed including to other organization or spin-out into a separate company (Ratner 2011).

The implementation of OI in pharmaceutical sector, however, comes with a lot of challenges especially in collaborations-the core process in OI. Some challenges identified from the case study of Astrazeneca are: the mechanism of incentivization for the scientists, the mode of governance (Fetterhoff and Voekel 2006), the extent of transparency and managing confidentiality in view of the tremendous value of IP in this field.

Research Questions

Against the backdrop of all the discussion on OI, IPM and flexibility, the research questions are:

- Which OI practices are being adopted by the pharmaceutical firms in India?
- What flexibility measures these firms are exercising in managing their innovation/IP?
- How much patent data speak on the aspects of OI and IPM?

17.3   Methodology

Based on the literature review, a conceptual framework using selected flexibility factors (Table 17.1 and Fig. 17.1) (from the list of factors given by Sushil 1997) as applied in OI practice and IP management of pharmaceutical firms, is developed. The flexibility factors are identified in course of the discussion in this paper.

The lack of well-defined concept and well-defined variables for measuring OI limits the exercise of quantitative studies on this topic. Some of the important indicators of OI suggested in the literature are: co-inventorship (Hall 2004; OECD 2008), collaboration (Hall 2004; Salah and McCulloch 2011, industry analyst and Podmetina et al. 2014), and licensing (Hall 2004; Bogers 2011). We have taken up these three indicators in this study. These indicators are extracted from a) company report and b) patent data (sample of 150 patents derived from systematic sampling technique). OI in context to IP management is studied with the help of these indicators in the top 10 pharmaceutical companies in India (selected on the basis of granted patents).
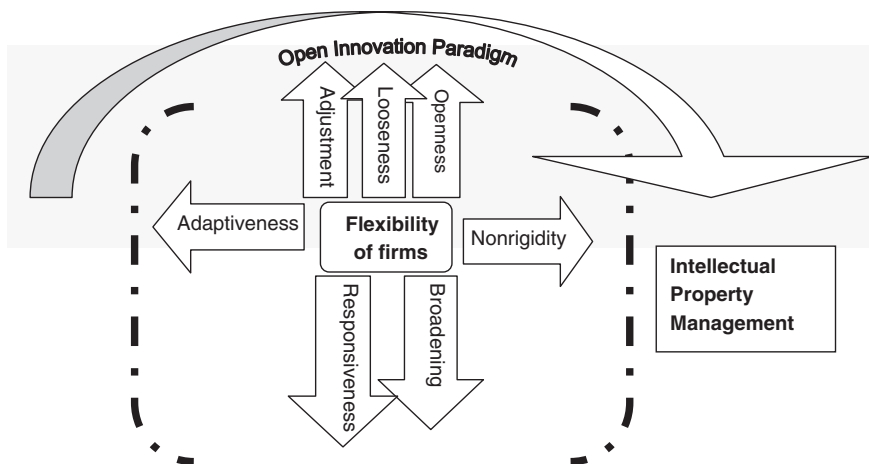
Fig. 17.1 Some selected connotations (factors) of flexibility to be used in the study of OI and IPM (author's selection from the list of connotations of flexibility given by Sushil 1997)

Besides, secondary data sources as company reports and websites are used to examine the OI-IP synergies in pharmaceutical firms while 150 granted patents of the top 10 pharmaceutical firms in India are studied to analyze the co-inventing pattern of inventors.

17.4 Data Description and Analysis

"Open Innovation defines innovation as both technical invention and a business model, how can this be captured using patent data?" (West et al. 2014). Exploring this option, patents (considered by economists as proxy for innovation) are used to analyze partnering at the level of invention in pharmaceutical firms of India.

17.4.1 Patents and Patent Data

Of all the IPs, patents steal the show in the business domain with their growing use as incentives for innovation, instruments for profit, market share and survival, especially in the pharmaceutical sector. Patents are legal documents issued by the government to the inventor for his invention which are evaluated and granted on the basis of three criteria (novelty, non-obviousness and industrial application). With the grant of exclusive/monopolistic right to the inventor, for a limited term (usually 20 years as per trade-related aspects of intellectual property rights (TRIPS) agreement) it empowers the owner to restrict others from using, selling or manufacturing products from his invention as embodied in the patent.

From the research perspective, patents are replete with information on technology domain, invention (nature and scope), applicant, assignee (owner of the patent) and status of the patent (active or expired). Their territorial distribution offers myriad possibilities of knowledge sharing, knowledge diffusion and collaboration for the firms. As "indicators of technical change" Griliches (1990), patents can be used as either an output (indicator of success of invention) or an input indicator (the R&D efforts) of innovative efforts (Hall 2004). In this chapter, patents statistics (the granted patents) is treated as an output measure for inventive activity of the pharmaceutical firms. Granted patents contain the final information *vis a vis* the patent applications (which might be abandoned/withdrawn/grant denied) and hence the preference for former in this study. Though not all inventions are patented, patent data are being extensively studied in the field of economics and management using patents as classic proxy for innovation. Singh et al. (2007) quote Nelke's observation in 2000 that "Patents far outweigh other formal sources of knowledge in generating more savings when used in new product development". This has been substantiated by empirical research where per patent document earnings have been approximated to the tune of 13400 euros.

17.4.2 Utility of Patent Data in Learning About Open Innovation in Intellectual Property Management

Patent data, identified as a unique set are easily available for statistical studies (OECD 2004). Their importance in studying different aspects of innovation is increasing (OECD 2008). They can be used to study technology collaboration through partners, inventor collaboration across firms, geographical distribution of inventors, and inter-firm mobility of the inventors to understand the limited research on the inside-out core process (Gassmann and Enkel 2004) of OI. Study of different inventors, different co-assignees or owners, differences between inventors and assignees could all be used to study the technology collaboration pattern and the nature of OI practices (OECD 2008). The nature and procedure for joint ownership of the patent and the sharing mechanism of incentives with the invention/technology is commercialized speaks a lot about the IP management practice of the firms with successful OI–IP models (For example: Pfizer and Eli Lilly; described in the later section).

17.5 Results and Discussion

17.5.1 Indicators of OI from Company Websites and Reports

In the post reform era in pharmaceutical sector, Indian firms are actively engaged in R&D collaborations—the decision based on their commercialization needs (Joseph 2011). This is being observed from the information collected from company reports/websites of the given firms (Table 17.2). As important indicators of OI, in-licensing and out-licensing processes have been studied for the given 10 pharma firms in India. The adoption of out-licensing though a recent phenomenon (Reepmeyer 2006) has been mostly observed in case of giant pharmaceutical companies as Roche, Eli Lilly, Novartis (the foreign firms) though it is seen as a major strategy for the Indian firms (Joseph 2011) only in recent times (IPCA, Cadila in Table 17.2). This indicates that Indian firms have to make more efforts in finding the right collaborators and potential licensing partners and the barriers in doing so can be taken up as further research area.

17.5.2 Co-inventorship Pattern from the Patent Data

In the analysis of individual firms, the average number of inventors (3.3) is lowest in case of Novartis while it is highest (5.7) in case of Eli Lily among the foreign firms. In contrast, among the domestic firms, the average number of inventors (2.5) is lowest in case of IPCA and highest (4.6) in case of Orchid (Figs. 17.2 and 17.3)

Table 17.2 Open Innovation Practice in the top 10 (5 domestic and 5 foreign) pharmaceuticals firms in India

	OI indicators	Domestic pharmaceutical firms in India	Foreign pharmaceutical firms in India
1	**Collaboration (SA/JV/ CRAMS/CRP)**	**Cadila**—Strategic-alliances mostly JV **Cipla**—With Industry, academia, Government org, NGOs and healthcare providers **Dr. Reddys**—Partnerships within industry spread across 50 countries **IPCA**—Within industry and research institutes **Orchid**—Basically, vertically integrated model	**Pfizer: Centres for Therapeutic Innovation (CTI)**—A-I collaboration providing funding at pre-clinical to clinical research. Equitable IP and ownership rights. Joint inventions–joint ownership **Eli Lilly: "Innocentive"**—OI practice connecting 250,000 registered solvers (entrepreneurs, inventors and scientists) from ~200 countries to solve business and technological problems **SanofiAventis**—With research institutes, Academia/university, hospital and patients **Novartis**—With A-I, through NIBR (300)
2	**Licensing**	**Cadila**—In-licensing **Cipla**—Out and In-licensing both **Dr. Reddys**—Mostly 3forms: Out-licensing, In-licensing and Co-development **IPCA**—In and out-licensing both **Orchid**—Out-licensing of NCEs **OR**—Co-development of NCEs	**Eli Lily, Hoffman-Roche Novartis, Pfizer** ⎫ Recent Adoption of Out-Licensing **SanofiAventis**—In-licensing ⎭

Information source Company's annual reports/websites
Abbreviations A-I Academia Industry collaboration; *SA* Strategic Alliances; *JV* Joint Ventures; *CRAMS* Contract Research and Manufacturing Services; *CRP* Contract Research Project

Fig. 17.2 Co-inventorship pattern in the top 5 domestic pharma firms in India
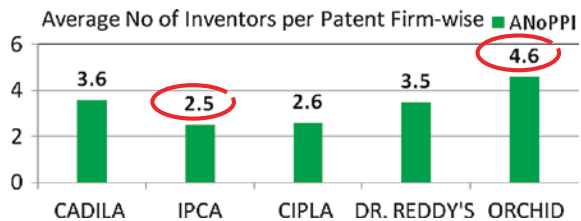
Co-inventorship is a dominant trend in Eli Lilly and Orchid, indicative of collaboration at the research level (an indicator of OI practice). Conversely, the collaborative pattern in co-inventing is lowest in Novartis and IPCA thereby implying probably more use of internal R&D resources. However, minor variation in the average

Fig. 17.3 Co-inventorship pattern in the top 5 foreign pharma firms in India
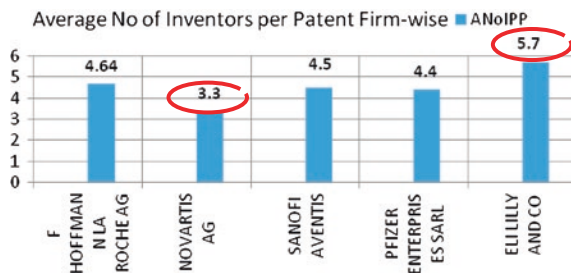
number of inventors due to the missing information on few patents cannot be ruled out. Overall, in case foreign firms, average number of inventors are 4.5 while it is 3.6 for the domestic firms. This higher average could be a trend in foreign patenting or indicative of high technology requirements and knowledge sharing as compared to the domestic firms in India. More number of patents granted to the foreign firms than to the domestic firms could also be the reason for this pattern in co-inventing.

17.6 Conclusion

The overall picture emerging from the conceptual discussion and a preliminary empirical analysis in this chapter highlights that collaboration and licensing have significant presence as OI practice in the pharmaceutical firms. Compared to in-licensing, out-licensing is a less favoured mode; its adoption being a recent practice with only some of the top firms (Eli Lilly, Roche and Novartis among the foreign firms) and IPCA (among the domestic firms) going for it. Patent data information on inventor collaboration (co-inventorship) also point to the OI practice at the R&D level where invention creation is done by multiple inventors but the IP is owned by the firm. Comparatively, the foreign pharmaceutical firms are more inclined to opt for co-inventing on an average than the domestic firms.

The findings on the pattern of co-inventorship and collaboration from the patent data add though in a small way to the research gap as pointed out by Julien et al. (2011). Managerial implications of this discussion lies in the managers' getting familiar with the IP knowledge of the firm to decide on how much, to what extent and at what levels to apply the openness. An in-depth analysis of patent information can be taken up to out-bound processes of OI (collaborating with suitable partners) and the choice in how to organize R&D collaborations of the firm.

This chapter is a thought-provoking exercise on multiple issues in intellectual property management. The suggestion by Chesbrough et al. (2006) to explore other sources of data (patent documents being one) has been taken to study few dimensions of OI. This can be elaborated further for other sectors and from a different perspective. Further research area involves working out a structured theory of the managerial and organizational enablers of the OI paradigm. What

framework of IP works best in OI model is still to come? As actors in innovation models, inter-firm mobility of inventors can aid in mapping the routes of innovation. A review of the geographical location of the inventors and their technology association can be used by the managers as insights for future collaboration.

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Chapter 18
Impact of Product Patent Regime on Pharmaceutical Companies in India

Shazli Ahmed Khan and Saboohi Nasim

Abstract During the period between 1970s and the beginning of the new century the Indian pharmaceutical industry and the Indian generic companies, in particular, witnessed high and consistent growth. This was the period when the process patent regime was prevalent in India and the industry was basically governed by severe price competition and governmental price control. During this period, the Indian IP law did not recognize product patents as a result of which Indian companies launched generic versions of proprietary products which were originally researched and developed by multinational companies (MNC's). Indian companies were allowed to reverse engineer the process used by MNCs to manufacture their products and get process patents for the new process. However, in 1994 India became signatory to Trade Related Intellectual Property Rights (TRIPS) agreement under which product patent regime was adopted by India with effect from January 1, 2005. As a result of which, Indian companies could not copy patented molecules that had been researched and launched by MNC's in India. Any molecule with a priority filing date after January 1, 1995 is eligible for product patent in India and cannot be manufactured or marketed as a branded generic in India. The new patent regime posed a grave challenge to Indian pharmaceutical companies to maintain their competitiveness and deliver on profitability targets. Based on secondary data analysis, this chapter outlines the existing patent regime, the Drug Price Control Act in India and its impact on the growth and development of the Indian pharmaceutical industry. This chapter also highlights how Indian pharmaceutical companies have reoriented their strategies to not just meet the new challenges, but also leverage on the opportunities arising with the implementation of this new patent regime.

Keywords Indian pharmaceutical industry · MNCs · Patent regime · TRIPS

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18.1 Introduction

The Indian pharmaceutical industry is one of the fastest growing industries in the country, ranking 4th in terms of volume and 14th in terms of value globally (Dixit 2008; Rai 2008; Kiran and Mishra 2009; Pandey 2010). Before the adoption of TRIPS in 2005 in India, process patent system allowed the Indian companies to copy research molecules of MNC's and launch them under their own brands. These brands had the same molecules that were originally researched by MNCs but were manufactured using a reverse engineered process for which the Indian companies were granted process patents. This coupled with very aggressive marketing strategies which helped Indian companies to compete with MNC's in the Indian market. The consistent growth of Indian pharmaceutical market during this period was attributable to two socialist policies of the Indian government (Sampath 2005; Rai 2008). First, the government set up publically owned pharmaceutical companies to manufacture and produce commonly required drugs to fulfill domestic requirements, e.g. Indian Drugs and Pharmaceuticals Ltd (IDPL). Second, the government formulated the Drug Price Control Order (DPCO) Act to control prices of essential medicines and ensure their affordability. Other policies like restriction of foreign investment in the Indian companies further helped the home grown Indian companies to compete against the MNCs.

The Patent Act of 1970 ended the product patent laws prevailing till then and started recognizing process patents (Chandran et al. 2005). The enactment of the Patent Act of 1970 was with the intent to promote and develop indigenous pharmaceutical industry so as to produce low cost medicines for Indian population. The provisions of this Act allowed Indian companies to reverse engineer the manufacturing process owned by MNCs and manufacture generic versions of these drugs under their own brand names. As a result of this, the Indian companies were able to copy many blockbuster molecules available globally and sell them in Indian market at considerably lower prices (Rai 2008).

The Drugs Price Control Order of 1979 was another policy decision that helped Indian pharmaceutical companies to compete with MNC's since it controlled prices of essential medicines, which ensured that MNC's launch products at reduced prices, considerably reducing their profitability. Due to the dual impact of patent laws and lower profitability due to price controls, MNCs stopped launching new products in Indian market and this gave room for Indian companies to consolidate and strengthen their position. As a result of these policies, the market share of Indian companies in the market started to increase. MNC's share in the Indian pharmaceutical market reduced to 60 % in 2000 from about 85 % in 1970 (Kunnapallil 2012). In 2008, before the acquisition of Ranbaxy by Japanese Daiichi Sankyo, out of the top 10 pharma companies in India, 8 were Indian companies.

After India became a signatory to TRIPS in 1994, product patent regime was implemented in India from January 1, 2005. Countries that are signatory to the TRIPS agreement are obliged to enforce and implement product patent in all fields of technology, and pharma being one of the most technology oriented and

research driven industry was impacted the most. India also adopted the product patent regime in January 2005 and since then all eligible products can be granted a product patent in India as well. This has enabled MNCs to get their intellectual property around new researched products protected in India and launch their global products in India while enjoying exclusivity for the duration for which product patent is valid. For example, Merck's (MSD) anti-diabetes drug Januvia is patented till 2017, Novartis' anti-diabetes drug Galvus is patented till 2019 and their respiratory drug Onbrez is patented till 2020 (competitive intelligence). Similarly drugs like Onglyza (AstraZeneca/BMS) and Brillinta (AstraZeneca) enjoy exclusivity vide a product patent in India.

While in the short term, implementation of TRIPS has restricted the Indian companies from launching branded generic versions of products originally researched by MNCS, but in the long term it has also provided an opportunity for the Indian companies to focus and strengthen their research facilities. So implementation of the product patent regime has had both positive and negative implications for the Indian pharmaceutical companies. While on one hand it has restricted Indian companies from launching reverse engineered, branded generic versions of the innovator molecules, on the other hand it has propelled Indian companies to consider investing in research and development activities for new molecules and other avenues of novel drug delivery systems for existing molecules (Janodia et al. 2009). Many Indian companies like Glenmark, Lupin and Intas have significantly enhanced their R&D expenditure over the last few years while trying to maintain their profitability by launching novel and differentiated formulations of molecules that are not protected by product patent. Another strategy that Indian companies have adopted in the post patent era is to partner with MNCs to market their patented molecules in India.

18.2 Methodology

This chapter is based on review of existing literature and published research related to implementation of product patent regime in India and the strategies adopted by Indian Pharmaceutical Industry to meet the challenges therein. Renowned journals like European Journal of Economics, Finance and Administrative Services, Journal of Intellectual Property Rights, International Review of Business Research Chapters, and International Journal of Business Research were referred to while searching for relevant articles and research chapters. From around 40 relevant articles, 9 articles focusing on implications of product patent regime on Indian Pharmaceutical Companies were considered for evaluation and detailed analysis. During the analysis and review of published literature the authors attempted to identify the perception of Indian pharma companies towards product patent regime. Whether they consider it to be a hindrance to the growth of the industry or do they foresee it providing impetus to the R&D capabilities of the Indian pharma industry? The chapter also attempts to analyze the measures taken by these companies to survive and grow in the Post-TRIPS period.

18.3 Results and Discussion

The pharmaceutical sector in general and the Indian pharmaceutical companies, in particular, has witnessed tremendous change and transformation over the past few decades, especially due to changes in patent laws. In order to address such volatile situations, the organizations usually balance change by leveraging it with existing continuities, and adopt flexible strategies (Sushil 2005; Nasim and Sushil 2011; Nasim 2015).

The implementation of product patent regime in India with effect from January 2005 compelled Indian Pharmaceutical companies to reconsider their marketing strategies so as to survive and compete with MNCs and global pharma majors who were better prepared for the situation. The MNCs were way ahead of their Indian counterparts in terms of New Chemical Entity (NCE) research and other allied areas of Pharma research. Many MNCs had products and molecules that were already granted product patent in India whereas any Indian company was yet to come up with an indigenously researched molecule nearing commercialization. Hence, they had to consider strategies that could help them sustain and compete in the market. After detailed analysis based on their view of the literature, following strategies and options have emerged as the most preferred by Indian companies to face this new market dynamic.

18.3.1 Emerging R&D Business Models

With the advent of product patent regime, for the Indian companies to withstand competition from global Pharma majors and survive, they need to invest more in their R&D efforts for development of new chemical entities (NCE's) and novel drug delivery systems (NDDS) of existing molecules. Before patent regime, with the help of reverse engineering and process patent companies were able to copy molecules researched by MNC's and introduce them under their own brands. However, this is not possible anymore. Indian companies can no longer launch a product as branded generic that has been granted a product patent. As a result of this, the model of R&D investment by Indian firms is shifting from core process research to new drug development and new drug delivery system (Fig. 18.1) (Rai 2008). The major R&D expenditure on new drug discovery and development is conducted by limited number of companies like Dr. Reddy's, Lupin, etc.

Many big Indian companies have already started investing significantly into R&D. Table 18.1 mentions the absolute amount invested by some of the top Indian pharma companies between 2001 and 2010.

Besides investing in core research, Indian companies are also adopting a combination of the following alternative R&D strategies to navigate competition and leverage opportunities.
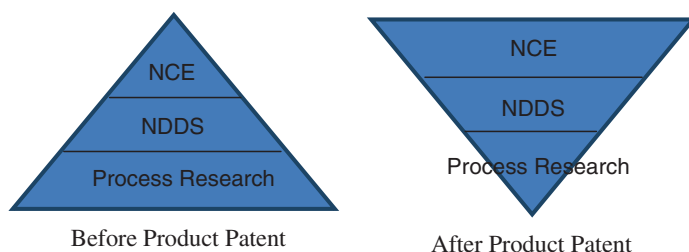
Fig. 18.1 Model of R&D investment by Indian pharmaceutical companies

Table 18.1 R&D investment by top Indian pharma companies (figures in INR Cr)

Year	Ranbaxy	DRL	Sun	Wokhardt	Cadila	Glenmark	Torrent	Cipla
2001	77	51	25	30	42	12	22	22
2002	192	74	34	34	38	31	31	52
2003	276	141	97	60	88	37	40	57
2004	331	199	127	69.3	103	48.7	67.3	98.4
2005	486	254	143	81.1	119	46.7	87.4	155
2006	386	215	202	138	124	45	74	176
2007	460	246	279	152	134	43	91	232
2008	471	253	287	165	133	51	113	244
2009	506	271	301	176	145	57	144	262
2010	514	286	312	182	183	63	163	275
CAGR	23 %	21 %	32 %	22 %	18 %	20 %	25 %	32 %

Source Company reports, websites

18.3.1.1 Out-Licensing of Innovations

Since a start-to-finish development of an NCE is an expensive affair, with some estimates going as high as $2 billion for researching a new molecule, Indian companies are out-licensing molecules to MNCs after reaching a certain phase in early stage clinical development. Such out-licensing arrangements are typically done for milestone payments and rights for certain markets after conducting early stages of clinical development (Preclinical or Phase I) (Table 18.2).

18.3.1.2 Services Models

With India emerging as the preferred destination for outsourcing research activities, global pharma majors have started off-shoring their back end activities like clinical trial monitoring, regulatory affairs and data management (Rai 2008). Many contract research organizations like Wipro, TCS, Cognizant, etc., which focus on contract research are following this model. Depending upon nature of

Table 18.2 Out-licensing
deals by Indian pharma
companies

Indian company	MNC partner	Product
Dr. Reddy's	Novo Nordisk	DRF 2593, DRF 2725
Ranbaxy	Bayer	Cipro XR, RBX 2258
Torrent	Novartis	Diabetes
Glenmark	Forest, Teijin	GRC 3886

Source Competitive Intelligence, Company Reports

service provided, margins are typically in the range of 20–30 %. Table 18.3 enlists
certain service level agreements recently entered into by Indian companies.

18.3.1.3 Collaborative R&D Arrangements

Collaborative research agreement is another avenue which is found favorable with
both Indian and global pharma companies. Such agreements typically involve
joint ventures/collaborations between two pharma companies wherein both share
risks involved with clinical development (Rai 2008). Table 18.4 enlists a few such
agreements entered into in the recent past by Indian companies.

18.3.2 Emerging Commercial Strategies

Besides the change in Research oriented strategies adopted by Indian companies
to meet the challenges posed by the product patent regime and leverage on the
opportunities offered by the change in market dynamics, there has been a
significant shift in the strategies adopted for commercialization of products by
Indian pharmaceutical companies. Apart from focusing on development of novel
formulations of existing drugs, companies have looked at partnering and alliances
for late stage and commercialized products to augment their portfolio and sustain
in the market.

Table 18.3 Contract research agreements by Indian companies

Indian company	MNC partner	Nature of services
Syngene	AstraZeneca	Drug Discovery
Strides	AstraZeneca	Drug Discovery
Advinus Therapeutics	Merck & Co	Drug Discovery in Metabolics
Biocon	BMS, Pfizer, AstraZeneca	Contract research for bulk drugs
Jubilant	Eli Lilly	NCE Research
Shasun Chemicals	Sanofi-Aventis, Eli Lilly, GSK	Contract Research

Source Competitive Intelligence, Company Reports

Table 18.4   Collaborative research agreements by Indian companies

Indian company	MNC partner	Nature of services
Ranbaxy	GSK	Drug development arrangement across various therapy areas
Ranbaxy	Eli Lilly	Drug Discovery
Torrent	AstraZeneca	Drug Discovery in CV
Biocon	Bristol Myers Squibb, Bayer	Biologics Drug Discovery JV
Jubilant	Amgen	Drug Discovery
Suven Lifesciences	Eli Lilly	CNS R&D Collaboration

Source Competitive Intelligence, Company Reports

18.3.2.1 In-Licensing Agreements

Since Indian companies cannot launch generic versions of patented products anymore and do not have many new formulations of old drugs coming from their NDDS research efforts, they have started to forge in-licensing arrangements with MNCs to launch their products in India. Under an in-licensing arrangement, the Indian company could get exclusive or semi-exclusive rights to market the MNCs product in India. These arrangement could vary from being a pure marketing and selling relationship to a more elaborate technology licensing agreement where the Indian company manufactures goods at their own facility and shares profits with the MNC partner (Rai 2008). These arrangements work particularly well with small to midsized MNCs who otherwise face a lot of hurdles in launching their products in India. Such alliances give quick profits and MNCs also leverage on their Indian partners equity to get quick success which may not be guaranteed had they themselves launched the product. In-licensing arrangements are cheaper and less risky way of augmenting portfolio rather than acquiring companies or investing in research and development activities. Table 18.5 enlists some of the in-licensing deals done by Indian companies in the recent past.

18.3.2.2 Out-Licensing Agreements

These are exactly opposite to in-licensing agreements. Here, the Indian company sits on other side of the table by being the seller. Taking cue from their MNC counterparts and also taking advantage of the new found focus of MNCs in super generics, Indian companies have entered into out-licensing deals for their branded generic products and novel formulations with MNCs, wherein they supply finished goods to MNCs who then market the products. Recent examples of such arrangements include the multicountry/multiproduct deal between Pfizer and Aurobindo, injectables deal between Claris and Pfizer, Biocon's deal with Pfizer for Insulin, Torrent's deal with Astrazeneca for 15 branded generic products in India.

Table 18.5 In-licensing
agreements by Indian
companies

Indian company	Partner	Product
Ranbaxy	Nihon Nohyaku, Japan	Lulliconazole
Ranbaxy	Sirtex, Australia	SIR Spheres
Ranbaxy	QLT Inc, USA	Eligard
Piramal Healthcare	Gilead, USA	Ambisome
Biocon	Abraxis, USA	Abraxane
Elder	Gnosis, Italy	SAMe
Glenmark	NAPO Pharma	Crofelemer
Wokhardt	Syrio Pharma, Italy	Derma products
Lupin	Novartis, India	Onbrez

Source Competitive Intelligence, Company Reports

18.3.2.3 Co-marketing Alliances

This is another of the most favored partnering strategy adopted by Indian companies wherein they market the MNC brands under a different brand name. Under a co-marketing arrangement, two firms market the same product under two different brand names (Rai 2008). These arrangements are a lot like in-licensing arrangement with the minor difference in co-marketing being that the MNC may also market the product in a different brand name. While it ensures quick sales for the Indian companies, it comes with the risk of establishing a brand which is not owned by them. Table 18.6 enlists a few co-marketing agreements executed by Indian pharma companies.

18.3.2.4 Marketing Alliances

Many Indian pharma companies in their quest to globalize have chosen to enter into marketing tie-ups rather than setting up subsidiaries and production facilities in markets of interest. For example. DRL's alliance with PLIVA for development and marketing of oncology products in Europe, Glenmark's supply and marketing agreement with Lehigh Valley Technologies to make and market liquid generic products in the US.

Table 18.6 Co-marketing
agreements by Indian
companies

Indian company	Partner	Brand
Ranbaxy	Ferring, Switzerland	Adiuretin
Ranbaxy	Eurodrugs, Belgium	Synasma
USV	Novartis	Jalra
Piramal Healthcare	Novartis	Zomelis
Sun	MSD	Istavel

Source Competitive Intelligence, Company Reports

18.3.3 Overall Corporate Growth Strategies

While the trend seems to be reversing in the recent past, there was a period immediately after advent of product patent regime in India when few of the top Indian pharmaceutical companies were very active in acquiring companies overseas and expanding their global presence. The prime motive behind these acquisitions was to penetrate into overseas markets, strengthen geographic reach, diversify, and enhance their product and IP portfolio and gain access to highly regulated markets like US and Europe (Rai 2008). During 2005 and 2006, Indian companies spent close to $ 1.6 bn to acquire companies in Europe, North America, and LATAM. Most famous of these acquisitions were Ranbaxy's acquisition of Terapia in Romania and DRL's acquisition of Betapharm in Germany. However, looking at the integration hurdles, it cannot be said whether all of these transactions made commercial sense, but they definitely helped Indian companies to set shop in global markets (Table 18.7).

The new patent regime also forced small Indian pharma companies to go on the radar and were picked up by bigger Indian companies that had global presence, significant R&D infrastructure and above all deep pockets to buy them. Few examples of such transactions include Wokhardt's acquisition of Merind, Ranbaxy's acquisition of Crosland, etc.

However, off-late the trend has reversed significantly and now MNCs are actively seeking acquisition of Indian companies. Recent transactions wherein Daiichi Sankyo from Japan acquired Ranbaxy, Abbott's acquisition of Piramal Healthcare and Mylan's acquisition of Matrix have turned the focus on acquisition of Indian companies by MNCs. These transactions also appear to be well thought out strategies by family driven business houses to leverage the brand equity earned by these home grown companies and encash on the increasing urge by MNCs to widen their presence in this high growth emerging market. The money that these conglomerates earn is being plowed into allied healthcare businesses.

Table 18.7 Acquisitions by Indian companies

Acquirer	Target (country)	Year	Value ($ Mn)
Ranbaxy	Terapia (Romania)	2006	324
Dr. Reddy's	Betapharm (Germany)	2006	574
Ranbaxy	Ethimed NV (Spain)	2006	–
Ranbaxy	Allen Spa (Italy)	2006	–
Sun Pharma	Able Laboratories (US)	2005	24
Glenmark	Uni-Ciclo	2005	4.6
Dr. Reddy's	Roche's API business (Mexico)	2005	59

Source Company reports/web pages, Industry Reports, Economic Times

18.4 Conclusion

Till 2005, Indian pharmaceutical companies were enjoying the process patent regime prevalent in India and by reverse engineering the manufacturing process of MNC molecules were able to launch blockbuster products in India as branded generics. But after the implementation of Patent Act 2005, only off patent molecules can be introduced by Indian companies. Under the new regime all products that have been granted a product patent or are eligible for same are out of bounds for the Indian pharmaceutical companies till the time the patentee holds exclusive marketing rights for the product. Hence, all those companies who wish to increase their market share and survive in the long run have embarked upon a two pronged strategy of augmenting their research capabilities and also to forge commercial alliances with global companies to augment their portfolio. Companies that are financially sound have invested significantly in core research activities.

However, those efforts will reap results only in the long term due to the long drawn process involved with pharma research. As they work towards enhancing their research abilities, Indian companies should put their efforts in development of NCE's in neglected therapeutic segments like TB, Malaria, etc. As the top Indian companies go about strengthening their research capabilities, many home grown contract research firms are focusing on the highly lucrative CRAMS industry wherein they are emerging partner of choice for global pharma in carrying out back end activities like clinical trial management, regulatory filings and data management. On the other hand, marketing oriented companies are focusing on forming commercial alliances with pharma MNCs in order to seek marketing rights for their patented products and launching them in India. Agreement types like co-marketing, in-licensing, co-promotion, etc., are favorable to Indian companies and are proving to be a win-win strategy for both Indian companies and the MNCs in India.

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Chapter 19
Investment Patterns and Quarterly Trading Flexible Strategies of Indian Mutual Funds Industry

Manoj Kumar Sharma and Deepak Kumar

Abstract This work first provides a basic understanding of the internal business processes related to mutual fund industry of India; then decipher that all players follow translucent flexible strategies in their disclosures of portfolios and the resultant outcome explains that external actors have equal flexible strategies. The momentum profit seasonality and the relation between this seasonality and institutional ownership, suggests tax loss selling and institutional window dressing play substantial roles in driving stock return momentum. This work suggests that investors trying to optimise return momentum concentrate their focus on quarter-ending and on institutions having large chunk of securities. In contrast, internally managed funds for educational institutions and foundations, which have own asset management services are not interested in window dressing of their portfolio. Finally, this work explores the flexible strategies adopted by different mutual fund management organisations on time line of their operations.

Keywords Mutual funds · Momentum profit seasonality · Tax loss selling and flexible strategy · Window dressing

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19.1 Introduction

Indian Stock market is now-a-days the most important component of any financial product in the modern capital market which is becoming the major tools from the investment perspective. The recent growth and development of capital markets evokes the interest of researchers and scholars. The field of stock market prediction attracts consultants, scholars, and researchers from different background.

Equity investment strategies can be differentiated as a market-timing strategy versus various strategies, i.e., buy-and-hold, value-focused versus growth-focused. The passive investors prefer to have buy-and-hold over the other long term. The selection of stocks was done by analyzing their potential strong earning possible future appreciation. Technically, the stock is retained in the portfolio as per the fundamentals in place, price swings will not be considered for reshuffling the portfolios. In case, due to policy changes or market competitiveness the underlying fundamentals no longer justify the existence of the stock in the portfolio, it is sold. In this strategy, the stock is not kept in the portfolio till its demise.

On the other hand, the strategy related to timing in markets is quite frequent then short-term as compared to a buy-and-hold. In order to gain from short-term variations, strategies related to timing related to mask This strategy of timing the markets is used frequently to gain from short-term swings. This strategy is used in anticipation of optimising stock returns over simply buying and holding stocks. Based on technical indicators which depicts a overbought or oversold condition a contrarian investor may follow reverse positioning in negation to current trend such as massive short selling which is well-defined indication of a bearish market.

In case of short selling, the selling is done by borrowed stock with an assumption that prices will fall in future so that low price buying is feasible. In view of such investor it may appear as a buying opportunity as shorts can be covered later at any cost due to repurchasing it. Short covering will suddenly pump the demand condition for such stock, which results in high price.

Investors try to decipher stocks with expectation of natural higher value than the current market price. The value investors buy these stocks and hold them with hope that the market will enable higher price than the approximate value.

Growth investors with growth mindset will lookout for stocks of companies with investment expectation which earns more cost to the capital of organisation. The stock is held in the portfolios so that market conditions that affect the firm's or organisation's value will increase the value of the company, often substantially.

Research may also be classified into fundamental or technical according to their nature. Fundamental analysis relies on earnings and technical analysis relies on stock's price as the fundamentals and relate to market-price patterns which indicates price trends and price consolidation.

Predictions for stock price and capture of the swings in the market are difficult and complex for making a strategic analysis of buying and selling stocks.

The two dominant methods of predicting prices of stock are fundamental and technical analysis. Fundamental analysis forecasts the future price movement of a

stock based on company's financial operations and financial condition and related business environment such as sales, earnings, growth potential, assets, debt, management, products, competition, macroeconomic data, politics, environment, and other relevant factors. Technical analysis related to historical data of stocks so that forecast can be made for movements in price. Many other techniques developed through research to signal buying and selling of stocks.

Indian mutual fund managers are required by the regulator (SEBI) to reveal their portfolio holdings periodically in formal reports to shareholders. Speculation abounds in the financial press that fund managers alter the composition of their portfolios around semi-annual reporting dates to mislead investors about the securities that have resided in the portfolio over the reporting period. The typical scenario entails a fund manager selling out of stocks with poor previous performance and taking positions in stocks that have performed well. Investors, upon seeing a portfolio loaded with top-performing stocks, are more likely to remain invested with the manager despite poor fund performance over the previous period. Such subterfuge in the money management business has been coined "window dressing." If window dressing does occur, it imposes explicit and implicit costs on fund shareholders. Explicitly, shareholders bear added transaction costs due to unnecessary portfolio rebalancing. These transactions costs occur on round-trip trades to build up the cosmetic position and subsequently to unwind it. Implicitly, shareholders are misled about the true nature of their investment portfolio. Evidence of window dressing is difficult to produce. Most press accounts of the subject quote participants in the money management business as maintaining that the practice is widespread, but that they themselves do not engage in it. Window dressing in equity mutual funds has not been corroborated by academic studies. Empirical research on the topic is difficult due precisely to the lack of data about the specific fund holdings in between reporting periods. Of course if such data were widely available, the practice would not exist because investors could not be fooled by it. If managers window dress their portfolios, the practice should alter portfolio return behaviour around the reporting period relative to non-reporting periods.

In this work, we examine daily time-series returns of equity funds in an attempt to uncover changes in the return-generating process around portfolio reporting periods. We relate returns to various investment style indexes, and we interpret systematic changes in residuals around reporting periods as evidence consistent with window dressing.

19.2 Literature Survey

Based upon flexibility dividend hypothesis Blau and Fuller (2008), have reexamined issues of policy related to dividends. However, they do not investigate the joint determination of growth rate and payout ratio.

Chen et al. (2013) extend the same with the main purposes (1) to extend Higgins' (1977, 1981, 2008) sustainable growth by allowing new equity issue, and (2) to derive a dynamic model which jointly optimises growth rate and payout ratio.

By allowing growth rate and number of shares outstanding simultaneously change over time; they optimise the firm value to obtain the optimal growth rate and the steady state growth rate in terms of a logistic equation. Using comparative statics analysis, they analyze how the optimal growth rate can be affected by the time frame. In addition, they also investigate the relationship between stochastic growth rate and error of the mean and variance of dividend per share.

Christoffersen and Pan (2014) surveyed the recent academic literature that uses option-implied information to construct equity portfolios.

Ortiz et al. (2013) analyzed the monthly portfolio holdings and daily returns of a large sample of Spanish domestic equity funds to test the potential manipulation of portfolios in mandatory reports. These portfolios are dispersed across funds and fund managers, but they are clustered over three specific quarters that coincide with bear market months. The results seem to indicate that although window dressing is not a widespread practice in the Spanish market, there is evidence to suggest that mutual funds employ this trading strategy as a response to poor past performance.

Schiereck et al. (1999) found evidence consistent with the view that errors in the expectations are more likely to be a result of biases in analyst's earnings forecasts than naïve extrapolation of the past. They also found that positive and negative earnings surprises have an asymmetrical effect on the returns of low- and high rated stocks. Positive earnings surprises have a disproportionality large positive impact on stocks that are priced low relative to four measures of operating performance; negative surprises have a relatively benign effect on such stocks.

The purpose of this work is to address the question of whether the practice exists in Indian Mutual fund industry, using holdings data for more than 828 equity mutual funds during the time period of this study.

19.3 Data Collection

19.3.1 Sample Selection

Data for the analysis come from several sources. Initially, we consult AMFI and Value research online to cull a reasonable set of mutual funds to study. We identify that the actively managed funds in AMFI database in each of the three largest domestic equity fund objectives: growth, growth and income, and aggressive growth. This selection results in 863 funds. We confine our sample to only actively managed funds for having more than 3 years of existence which reduces our sample size to only 373 funds, We build our sample from the largest equity funds of assets more than 500 Crore which further reduces the sample size to only 92 funds

of 17 different fund houses for two reasons. First, the actions of these fund managers affect the greatest number of investors. Appendix I presents descriptive statistics of the funds in the sample. To the extent that window dressing imposes costs on investors, detection of such activity at these funds would suggest economically meaningful wealth transfers. Second, by selecting the largest funds, for which window dressing is arguably most difficult due to the number of holdings and size of equity positions, we are likely biasing ourselves against detecting window dressing. Our inclusion of three different investment objectives allow us to analyze a heterogeneous sample of funds. Certain managers may have greater incentives to window dress than others. For example, in a year where established, dividend-paying stocks outperform small growth stocks, growth and income fund managers may have less incentive to window dress than aggressive growth fund managers. By collecting a diverse group of funds, we have a better chance of detecting window dressing that may be advantageous to only one or two investment styles in the years that we analyze.

Many of the funds that we collect have average last year returns of above 50 % so there is always of scope of window dressing in such reported high profit a figure. Portfolio details of all such funds in the sample were analyzed for the last 5 years. The details of the portfolios were updated quarterly/monthly by most of the funds on their respective websites.

19.3.2 Daily Returns

For every fund in the sample, we observed daily net asset values (NAVs) and distribution data from funds websites. The originating source for this data is the AMFI website and websites of individual mutual fund quote service. Daily returns can be calculated from this data as

$$RET_{i,t} = \left(PR_{i,t} - PR_{i,t-1} + DIS_{i,t}\right) / PR_{i,t-1}, \tag{1}$$

where $RET_{i,t}$ = daily return for fund i on day t, $PR_{i,t}$ = price of fund i at close of day t, $DIS_{i,t}$ = per share distribution of fund i on day t.

Daily returns are calculated for each fund on each day over the period of this. A fund that exists throughout the sample period will have 60 months of return data which corresponds to 1,143 daily observations. 5 funds came into existence during the period and are thus represented in the sample for only the months over which they existed. 17 (18.47 %) of the funds in the sample have some missing daily return data, other than days prior to fund inception. The average fund with missing data had 5 missing daily return observations. For a subset of these funds, we cross-checked these missing observations with data from various sources such as AMFI and other financial websites. In all of the cases checked, they have also missing those same observations, suggesting that the data from the original source was lacking these observations. For each of the missing observations, returns on that

day and the day following cannot be calculated. In all, 411 observations of fund returns are not calculated. The total number of remaining daily return observations is 104,745. Finally, we collect index return data and closing prices of individual shares from NSE to estimate market models for each fund.

19.4 Methodology

19.4.1 Market Model Residuals

The objective of the analysis is to identify return patterns in the quarterly reporting's or fiscal year-ends. To accomplish this goal, we examine the residuals from market models estimated separately for each fund. Cognizant of the fact that a particular fund's style may evolve over time, we estimate a separate market model to analyze each month-end for a fund. We specify the estimation period to be from 3 months before the month-end to 3 months after the month-end. We then examine the residuals from the market model on the days immediately surrounding the month-end. We generate the market model by regressing the fund returns against the daily returns to the NSE indices.

We estimate the model for each fund for rolling 6-month periods throughout the sample period. For example, to examine the residuals around January 1, 2011, the 6-month period in the market model estimation is October 2010 through March 2011. To examine the residuals around February 1, 2011, the market model period is November 2010 through April 2011. The last 6-month period over which market models are estimated is March 2014 through Aug 2014, to examine residuals around June 1, 2014. A fund in existence prior to June 2010 will thus have 48 separate market models, one for each 6-month period.

Note that this procedure includes in the market model estimation the days around the month-end in question. To the extent that returns on these days are characterised by a different return-generating process, they will influence the estimation of the model. Including these observations will reduce the squared residuals on the days around the month-end relative to a model estimated without including these days. The net effect of this methodology will be to bias us away from detecting atypical residuals around the month-end.

Our interpretation of residuals as indicative of specific behaviour may be compromised by errors in the daily data. To filter out potential errors in the data, we initially estimate each market model with all data. We then filter out all observations that produce a residual that is greater than 5 % or less than −5 %. The market models are then re-estimated without the outliers.

Once the market models for each fund in each 6-month period have been estimated, we collect the residuals around the month-end in question. The length of time that a fund manager might require to implement a window dressing strategy is unknown. This piece of information is potentially important since we might fail to detect abnormal residuals by including too few or too many days in the

end-of-month event period. Musto (1997, 1999) detects changes in portfolio composition of money market funds during the week of portfolio disclosure. However, the data is too coarse to determine whether this portfolio rebalancing occurs throughout the week of or only on the day of disclosure. The point at which he measures portfolio composition might be the exact day of disclosure or as many as 4 days from disclosure. Importantly for our study, the costs of rebalancing in money market instruments are slight compared to those in the equity market. As such, an equity manager might require more time to rebalance than a money fund manager to minimise transactions costs. We therefore alternatively identify the end-of-month event period as the 2, 4, 6, 8, or 10-day period around the end of the month. In the presence of window dressing, the residuals on the days during the event period might be abnormally high or low. If the manager changes the composition of the portfolio towards stocks that subsequently deliver better (poorer) performance than the un-rebalanced portfolio, the residuals will be positive (negative). We therefore take the absolute value of the residuals on each day during the event period. The mean of these absolute residuals during the event period (we call this variable "eventab" for event period absolute residuals) is the variable of interest for subsequent analysis.

19.4.2 Description of Independent Determinants of Event Period Residuals

We relate the absolute residuals around the month end to several fund-specific characteristics using ordinary least squares regression. Note that we collect residuals around all months, not just around the fiscal year-end month. We relate the residuals to two dummy variables that code whether the month is the end of the fiscal year or the end of the fiscal half-year. We need to code both of these since a fund will have two reporting periods—one at the end of the fiscal year and one 6 months later. If there is window dressing occurring in this sample of funds, we should see higher residuals in months that correspond to a fund's fiscal year-end or fiscal half-year-end. Although the residuals are generated via a market model that controls for systematic risk exposure to different sectors of the equity market, there is no control for the average amount of unsystematic risk a fund normally incurs. To proxy for unsystematic risk, we include as an explanatory variable the mean of the absolute value of the residuals from the market model. This variable is calculated just like event, but is calculated over all days over the 6-month estimation period excluding the event period. This variable is necessary because some funds may exhibit high residuals around month-ends simply because they have high unsystematic risk at all times. We might expect more aggressive funds to exhibit higher levels of trading, facilitating a window dressing strategy. Alternatively, in periods where income-producing stocks experience poor relative performance, more conservative managers may have greater incentives to purge relative underperformers from the disclosed portfolio.

In the typical window dressing story, a fund manager unloads poor-performing stocks to dress up the portfolio. Thus, we might expect funds with poor previous performance to exhibit higher absolute residuals around fiscal year-ends. However, top-performing funds might also have reason to window dress if relative outperformance resulted from holding securities significantly different from those expected by investors to be in the portfolio. There are reasons to expect that month-end residuals might be different in December than in other months. The well-known January effect could cause residuals in the period around the last trading day in December to be relatively high. In addition, the portfolio pumping documented by Carhart et al. (2002) might also push up residuals at the end of a calendar year. Brown et al. (1996) document risk-increasing behaviour in the second half of the calendar year for funds that are poor performers in the first half of the year. This evidence suggests that managers do alter their portfolios based on calendar year performance and highlights the importance of controlling for calendar year-ends in our analysis. We have no preconceptions about the direction of influence that these variables will have on our results.

19.5 Conclusion

In view of the investors, the best method to access the performance of the mutual fund is to analyze the past performance of the fund, which is self-declared by the mutual fund to the regulatory bodies.

Due to the inherent noise in the data it is very complex to comprehensively evaluate the performance of the portfolio and hence to critically analyze and compare the individual fund managers on the basis of the risk–return duality.

Most of the information available in the public domain such as the objective and investment strategies of a mutual fund are self-declared information, so they are not reliable and cannot provide useful insights and guidance.

In view of the peer pressure and the variable random nature of the market, classification and characterization of the various funds by their style orientation is also not feasible because they change quickly over time.

The investors mostly depend on technical and fundamental analysis of fund holdings to analyze the fund's performance and the skills of the fund managers for better stock selection and ability to time the market.

There is ample evidence that misleading information's are provided to the investors on the type of risks caused by Window dressing. This work also concludes that by observing net trades between reporting dates does not provide timings of the trades. Determination of the timings of trades is very critical to differentiate the window dressing from the strategies adopted and momentum trading.

To solve the issue of trade timings, we have evolved a methodology to track window dressing phenomena by evaluating differences between the hypothetical buy-and-hold strategies of the fund portfolio to the observed NAV return which was reported. It is to offer that 21.5 % of the filings in our funds sample display a

pattern of returns consistent with window dressing activity and only about 12 % of the funds repeatedly report portfolios that are misleading. These filings are mostly from growth funds with higher turnovers, funds with large cash reserves, funds with high expense ratios and managers with poor recent performances.

The findings suggest that strategic periodic reporting of the funds holding not necessarily provide more insightful information to the investor. Frequent window dressing results in an increase in transactional costs, which in turn leads to more dead weight loss to investors. Instead of strategic periodic reporting we propose to have a flexible reporting which incorporates the dates of transactions of their top ten portfolio acquisitions and sales over the preceding quarter. This flexible strategy enables to shield the investors from the dead weight loss in the form of transaction costs during window dressing. It is also proposed that in order to safeguard proprietary trading strategies and avoid the replication of the strategy by low-skill portfolio manager; such trades could be reported with a time lag.

Appendix I: Details of Funds Used as Sample for the Study

Fund	Launch	Expense ratio (%)	1-year return (%)	Net assets (Cr)
Axis Equity Fund	5-Jan-10	2.59	41.42	812.02
Axis Long-Term Equity Fund	29-Dec-09	2.74	74.31	1334.79
Birla Sun Life Dividend Yield Plus Fund	26-Feb-03	2.37	58.85	1060.83
Birla Sun Life Equity Fund	27-Aug-98	2.58	65.94	794.82
Birla Sun Life Frontline Equity Fund	30-Aug-02	2.17	48.79	5038.74
Birla Sun Life Mid Cap Fund	3-Oct-02	2.43	72.08	1116.79
Birla Sun Life MNC Fund	27-Dec-99	2.72	65.18	529.57
Birla Sun Life Tax Relief 96	29-Mar-96	2.36	58.7	1515.99
Canara Robeco Equity Diversified Fund—Regular Plan	16-Sep-03	2.62	43.6	665.17
Canara Robeco Equity Tax Saver Fund—Regular Plan	31-Mar-93	2.68	49.69	714.98
DSP BlackRock Equity Fund	29-Apr-97	2.34	61.23	2004.37
DSP BlackRock Equity Fund—Institutional Plan	1-Apr-07	2.34	62.12	2004.37
DSP BlackRock Micro Cap Fund—Regular Plan	14-Jun-07	2.78	117.12	522.43
DSP BlackRock Opportunities Fund	16-May-00	2.71	49.84	516.13
DSP BlackRock Small and Mid Cap Fund—Regular Plan	14-Nov-06	2.51	85.29	1122.22

(continued)

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Fund	Launch	Expense ratio (%)	1-year return (%)	Net assets (Cr)
DSP BlackRock T.I.G.E.R. Fund—Regular Plan	11-Jun-04	2.47	65.6	1212.54
DSP BlackRock Tax Saver Fund	18-Jan-07	2.66	58.81	813.77
DSP BlackRock Top 100 Equity Fund—Institutional Plan	1-Apr-07	2.27	43.71	2994.93
DSP BlackRock Top 100 Equity Fund—Regular Plan	10-Mar-03	2.27	42.95	2994.93
Franklin India Bluechip Fund	1-Dec-93	2.18	40.7	5038.23
Franklin India Flexi Cap Fund	2-Mar-05	2.33	61.31	1751.98
Franklin India High Growth Companies Fund	26-Jul-07	2.64	75.19	575.24
Franklin India Prima Fund	1-Dec-93	2.5	79.46	1412.7
Franklin India Prima Plus Fund	29-Sep-94	2.31	57.87	2322.77
Franklin India Smaller Companies Fund	13-Jan-06	2.72	102.34	587.71
Franklin India Taxshield Fund	10-Apr-99	2.5	57.99	1157.71
HDFC Capital Builder Fund	1-Feb-94	2.76	59.95	509.24
HDFC Equity Fund	1-Jan-95	2.17	71.37	12886.1
HDFC Growth Fund	11-Sep-00	2.5	49.89	1082.49
HDFC Infrastructure Fund	10-Mar-08	2.87	96.69	996.29
HDFC Long-Term Advantage Fund	2-Jan-01	2.6	59.72	986.69
HDFC Mid Cap Opportunities Fund	25-Jun-07	2.42	90.01	4496.34
HDFC Taxsaver Fund	31-Mar-96	2.25	68.03	4111.12
HDFC Top 200 Fund	3-Sep-96	2.24	58.07	11657.4
HSBC Equity Fund	10-Dec-02	2.64	38.8	538.34
ICICI Prudential Dynamic Fund—Institutional I Plan	27-Mar-06	2.23	51	4253.86
ICICI Prudential Dynamic Fund—Institutional Plan	13-May-11	2.23	50.87	4253.86
ICICI Prudential Dynamic Fund—Regular Plan	31-Oct-02	2.23	49.71	4253.86
ICICI Prudential Focused Bluechip Equity Fund—Institutional I Plan	23-May-08	2.23	46.4	5884.49
ICICI Prudential Focused Bluechip Equity Fund—Regular Plan	23-May-08	2.23	45.26	5884.49
ICICI Prudential Infrastructure Fund—Regular Plan	31-Aug-05	2.33	62.38	1498.33
ICICI Prudential Tax Plan—Regular Plan	19-Aug-99	2.46	66.97	1874.08
ICICI Prudential Top 100 Fund—Regular Plan	9-Jul-98	2.77	47.6	669.56

(continued)

(continued)

Fund	Launch	Expense ratio (%)	1-year return (%)	Net assets (Cr)
ICICI Prudential Top 200 Fund—Regular Plan	1-Oct-94	2.6	57.11	530.15
ICICI Prudential Value Discovery Fund—Regular Plan	16-Aug-04	2.28	88.25	4114.35
IDFC Premier Equity Fund—Regular Plan	15-Sep-05	2.29	70.96	4311.16
IDFC Sterling Equity Fund—Regular Plan	7-Mar-08	2.38	64.96	1490.17
Kotak 50	29-Dec-98	2.58	45.47	616.54
Kotak Opportunities	9-Sep-04	2.68	48.21	597.6
Kotak Select Focus Fund	11-Sep-09	2.82	56.63	527.77
L&T Equity Fund	16-May-05	2.29	52.85	2123.21
L&T India Special Situations Fund	22-May-06	2.68	54.11	649.51
L&T Tax Advantage Fund	27-Feb-06	2.51	48.23	1277.15
Reliance Banking Fund	26-May-03	2.34	69.4	1656.22
Reliance Diversified Power Sector Fund	8-May-04	2.32	70.26	2036.91
Reliance Equity Opportunities Fund	28-Mar-05	2.23	70.58	6162.18
Reliance Equity Opportunities Fund—Institutional Plan	8-Aug-07	2.23	70.92	6162.18
Reliance Focused Large Cap Fund	28-Mar-06	2.46	45.32	1036.73
Reliance Growth Fund	8-Oct-95	2.2	66.3	4483.57
Reliance Growth Fund—Institutional Plan	8-Aug-07	2.2	66.63	4483.57
Reliance Long-Term Equity Fund	26-Dec-06	2.56	99.75	949.83
Reliance Pharma Fund	5-Jun-04	2.64	65.62	809.37
Reliance Regular Savings Fund—Equity Option	8-Jun-05	2.27	57.87	2317.97
Reliance Small Cap Fund	16-Sep-10	2.75	141.22	566.21
Reliance Tax Saver Fund	21-Sep-05	2.33	101.37	2439.23
Reliance Top 200 Fund—Retail Plan	8-Aug-07	2.53	59.33	818.38
Reliance Vision Fund	8-Oct-95	2.25	70.44	2706.02
Reliance Vision Fund—Institutional Plan	8-Aug-07	2.25	71.06	2706.02
SBI Bluechip Fund	14-Feb-06	2.44	52.73	930.58
SBI Contra Fund	14-Jul-99	2.24	49.5	2026.07
SBI Emerging Businesses Fund	11-Oct-04	2.37	64.43	1342.86
SBI Infrastructure Fund	6-Jul-07	2.48	56.55	534.34
SBI Magnum Equity Fund	1-Jan-91	2.37	43.25	1114.19
SBI Magnum Global Fund	30-Sep-94	2.39	77.2	1067.96

(continued)

Fund	Launch	Expense ratio (%)	1-year return (%)	Net assets (Cr)
SBI Magnum Multiplier Plus Scheme	28-Feb-93	2.34	58.93	1206.03
SBI Magnum Taxgain Scheme	31-Mar-93	2.08	59.67	4371.69
Sundaram Infrastructure Advantage Fund—Regular Plan	29-Sep-05	2.85	70.96	680.66
Sundaram Select Mid Cap Fund—Institutional Plan	15-Apr-08	1.87	83.98	1963.25
Sundaram Select Mid Cap Fund—Regular Plan	30-Jul-02	2.29	83.04	1963.25
Sundaram Taxsaver	22-Nov-99	2.41	50.08	1146.6
Tata Infrastructure Fund—Plan A	31-Dec-04	2.67	55.88	748.06
Tata Pure Equity Fund—Plan A	7-May-98	2.8	38.66	661.13
Templeton India Equity Income Fund	18-May-06	2.46	48.35	945.69
UTI Dividend Yield Fund	3-May-05	2.1	44.38	3043.74
UTI Equity Fund	18-May-92	2.13	50.68	2903.94
UTI Infrastructure Fund	7-Apr-04	2.19	61.85	1522.54
UTI Leadership Equity Fund	30-Jan-06	2.46	42.26	571.09
UTI Master Equity Plan Unit Scheme	31-Mar-03	2.22	45.04	1428.55
UTI Mastershare Fund	18-Oct-86	2.21	44.8	2498.42
UTI Mid Cap Fund	7-Apr-04	2.75	112.32	963.98
UTI Opportunities Fund	20-Jul-05	2.19	46.04	4101.36
UTI Top 100 Fund	20-May-09	2.47	44.1	597.25

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Chapter 20
Hierarchical Relationship Models of Strategic Crystal Elements of Telecom Service Business in India: An Empirical Validation

S.B. Khare

Abstract Many strategy management thinkers and authors believe that continuity aspects of the organization have to be kept in mind while bringing in desirable strategic change. The telecommunication service sector, being a capital intensive sector, possesses a heavy continuity flywheel. At the same time, the sector is also subjected to high intensity change forces such as intense competition, rapidly changing technologies, consumer needs/expectations and shifting loyalties. Strategic outcome factors, namely enterprise factors and customer factors and forces of continuity and change constitute the four elements of flowing stream strategy crystal. Strategy formulation and recommendations can be made on the basis of intra- and interrelationships among these crystal elements. Total Interpretive Structural Modelling (TISM) of the strategic crystal elements gives the interpretation as well as the hierarchical relationships amongst the elements of the crystal. Empirical validation of these hierarchical relationships gives the predictive power of elements of crystal along with the directional relationships among the crystal elements. This chapter deals with empirical validation of these hierarchical relationships among strategic crystal elements of telecom service business in India. These validated hierarchies of strategic crystal elements not only provide the intrarelationships of various factors and forces but also the predictive power of relationship elements. Thus, the validated TISM helps in strategy development in this fast changing industry. This chapter concludes with recommendations on the basis of validated hierarchical relationships of strategic crystal elements.

Keywords Change forces · Continuity forces · Customer factors · Enterprise factors · Strategic crystal elements · Total interpretive structural modelling (TISM)

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20.1 Introduction

Continuity aspects of the organization need to be kept in mind while bringing in desirable strategic change (Volberda 1998; Gioia 1998; Christensen and Cheney 2000; Leana and Barry 2000). Flowing stream strategy framework provides a flexible approach in managing the forces of continuity and change side by side (Sushil 2012a, b, 2013) for better organization results. Strategic outcome factors, namely enterprise factors and customer factors and forces of continuity and change constitute the four elements of flowing stream strategy crystal. Strategy formulation and recommendations can be made on the basis of intra- and interrelationships among these crystal elements. Total Interpretive Structural Modelling (TISM) of the strategic crystal elements gives the interpretation as well as the hierarchical relationships amongst the elements of the crystal (Sushil 2012c). This chapter arrives at the hierarchical relationships model, akin to TISM of the strategic crystal element variables. Thus, the process also leads to the empirical validation of the qualitative TISM of strategic crystal elements of telecom service business in India. Empirical validation of hierarchical relationship models of strategic crystal elements clarifies as to which of the intra-relationships of strategic crystal elements are important from strategy formation point of view. These validated relationships help in strategy development in this fast changing industry. This chapter, thus, helps in determining the relative importance of various strategic crystal elements and intrarelationships therein. This chapter concludes with recommendations on the basis of the validated hierarchical relationship models of strategic crystal elements.

20.2 Literature Review

Interpretive structural modelling (ISM) was created by Warfield (1973, 1974) which gave a powerful methodology for structuring complex issues. ISM gives a process by which a poorly understood system and loosely articulated mental models can be represented clearly by sets of elements and directional relationships. Though these ISM identified relationships are of great value in dealing effectively with the system and better decision-making, yet they lack an interpretation of the embedded object or the directional representation system. An interpretive structural model known as Total Interpretive Structural Modelling (TISM), however, gives the interpretation as well as the contextual relationships amongst the elements of structural model (Sushil 2012c, 2015). TISM, going beyond the ISM model which not only tells about 'how' various elements are interrelated, but also, tells us 'why' they interact in a particular manner as well. Total Interpretive Structural Modelling (TISM), therefore is an innovated form of Interpretive Structural Modelling (ISM); it has been used in this study for determining the hierarchical relationships among the crystal element variables. Qualitative TISM for strategic crystal elements were made (Khare 2014) through an expert survey by taking majority 'yes' responses and their interpretations, drawing up the resultant reachability matrix, and taking iteration steps.

This chapter is about arriving at validated hierarchical models of strategic crystal elements of Telecom Service Business in India. This is done through empirical survey and regression analysis. The next section gives in brief the various sub-elements/variables of flowing stream strategy crystal of telecom service business.

20.3 Strategic Crystal Elements of Telecom Service Business

These have been identified from the literature and verified (Khare 2012). These strategic crystal elements have been grouped in as continuity forces, change forces, enterprise factors and customer factors.

20.3.1 Continuity Forces

The continuity forces in the context of organizations refer to those factors, which contribute to inertia, or desire for sameness and stability. These forces, which provide continuity to an organization, differ from sector to sector. Following continuity forces of telecom service provision business have been identified and verified.

Existing Infrastructure The telecom companies have asset base consisting of cable ducts, buried copper cable, telephone exchanges, underground optical fiber transmission cables and equipment, microwave towers, satellite ground stations, submarine cables and cable landing stations and so on. All these constitute a heavy continuity flywheel.

Current Customer Base Telecom operators have varying customer base depending on their market share.

Core Competencies A company needs to develop core competencies relevant for the business. It also needs to keep in mind that it does not hive off a part of business, the core competency of which is crucial for remaining business.

Organization's Structure, System, Processes and People These are important organizational elements, which play an important role in devising developmental and growth strategies.

Expertise in Existing Technology The organizations want to exploit fully the existing technology before moving on to a new technology.

Organization Culture Organization culture plays a crucial role in shaping employee behaviour in it. Culture change needs to be managed in a gradual manner by a continuous process of learning and developing.

Company's Ownership Aspect There are varied ways in which companies are owned. Some are privately owned, some are owned by governments and some are widely held by global corporations.

20.3.2 Change Forces

Telecom service business is subject to many change forces. These are due to rapidly changing technology, globalization and convergence of voice, data and video. Following change forces of telecom service business have been identified and verified.

Competition Competitors are instrumental in forcing companies to change their marketing strategies, come up with innovative plans and offerings, lower their price and improve their brand image.

Emerging New Technologies Telecom sector is known for its fast changing technologies and it has impacted telecom service business greatly.

Governmental and Regulatory Telecom Policies Deregulation and subsequent policy changes by governments in their telecom markets have affected the telecom businesses in most of countries.

Globalization The telecom companies of the developed world have participated in big way in the growth of telecom business in developing countries.

Changing Customer Needs The customers, because of availability of alternate service, have become very demanding. Their needs are changing continuously.

Mergers and Acquisitions Intense competition in the sector has created a natural requirement of consolidation among the companies.

e-Business Processes All companies need to automate their processes to gain competitive advantage in the marketplace. An effective online e-Business capability across the company business operations (billing, provisioning, sales and service, planning, procurement, etc.) helps in reducing costs and enhancing revenue growth.

20.3.3 Enterprise Factors

The management of a company is answerable to its shareholders. There are certain parameters which any management monitors to check the health of the company. These enterprise factors (strategic in nature) are important to the management as they determine shareholder's value. Following enterprise factors of telecom service provision business have been identified and verified:

Market Share This parameter reveals the company's relative strength in the market relative to the competitors.

Customer Satisfaction The customer, generally, has certain standards/expectation of service quality associated with the service, which he compares with actual service delivered.

Average Revenue per Unit (ARPU) ARPU means the earning of the operator per subscriber per month.

Earnings before Interest, Tax, Depreciation and Amortization (EBITDA) EBITDA is a measure of a company's operating profitability. If a company has higher EBITDA, it indicates that the company's operations are more profitable compared to its competitors.

Compounded Annual Growth Rate (CAGR) CAGR is a compounded rate of growth of a number (say investment) over several years. CAGR (in the context of telecom service industry) is used as an index to indicate as to how a particular service provider is performing vis-à-vis industry or its competitors.

Network Rollout and Product/Services Innovation Speed Speed of network rollout determines as to how fast the operator can tap its potential customers.

Productivity per Employee Employees of a company constitute a major input cost of a telecom operator. At the same time these very employees generate the revenues. Their talent, motivation level, and commitment to the company are very important for its profitability and survival in the market.

20.3.4 Customer Factors

It is now well-accepted proposition that customer is the king in the marketplace. The companies, which can conquer the heart and mind of its customers, will end up as winners. Following customer factors of telecom service business have been identified and verified:

Product Price Price is one of the important factors on which customer relies while choosing a service provider.

Quality of Telecom Service The customers get highly annoyed if the service quality of the provider is not good. The customers think about changing their service provider and often do, if the companies do not pay attention to their quality parameters.

Product/Rate Plan Innovation It is important for the service provider to bring out new rate plans and innovative products on a regular basis. This way the provider positions itself as being different from others.

Brand Image of the Operator Consumer has become very much brand conscious. The brand image of an operator communicates to the customer as to what value he can expect from the brand.

20.4 TISM of Strategic Crystal Elements

TISM can be formed by following some steps, namely, defining the contextual relationships and interpretation of microvariable of a particular strategic crystal element, pairwise comparison of microvariables by a group of domain experts

(to obtain interpretive logic knowledge base of each paired relation), drawing up of the reachability matrix and doing level partition. The graphical representation of the interpretive relationships in the form of a Total Interpretive Structural Model (TISM) for telecom service business in India (Sushil 2013; Khare 2014; Khare et al. 2014) is, thereafter arrived at (Appendix). This is done by deploying a survey questionnaire which is developed using the theoretical backdrop of TISM. This questionnaire is distributed among senior telecom executives of various telecom operating companies in India and responses obtained. The interaction matrix giving significant relationship interpretations is arrived at based on significant responses. Several iteration steps on the relationship matrix lead to level partition and draw up the TISM of strategic crystal elements (Figs. 20.5, 20.6, 20.7, and 20.8 in Appendix). Authors have drawn TISM for other domains such as education (Prasad and Suri 2011), e-Governance (Nasim 2011) and performance management (Yadav and Sushil 2014) deploying similar methodology.

20.5 Empirical Validation of Hierarchical Relationships of Stategic Crystal Elements

As stated earlier, qualitative TISMs (Appendix) have been developed on the basis of a survey conducted among senior executives of Telecom sector. This had led to a qualitative relationship model, providing a hierarchy of variables along with the interpretation of cause and effect reasoning of the relationships. The TISM has been carried out for four sets of variables of respective strategic crystal, namely continuity forces, change forces, enterprise factors and customer factors. This exercise had categorized the variables of the respective strategic crystal elements into different levels depending on their driving power. Stepwise regression analysis has been conducted in the following sections to determine the relationships among the variables of a particular element of forces and factors. While the qualitative TISM has determined the cause and effect relationships along with the interpretation, the regression analysis will determine the predicting power of variables of these relationships.

20.5.1 Validated Model for Interrelationships Among Microvariables of Continuity Forces

The customer base was noted to be the most dependent of the continuity forces in the qualitative TISM. Taking customer base as the dependent variable and all other continuity forces as independent variables, stepwise regression analysis has been carried out. Based on this framework, the hierarchical relationship among the continuity factors has been determined and depicted in Fig. 20.1. The beta values of the predictor relationships have been stated along with directional relationship
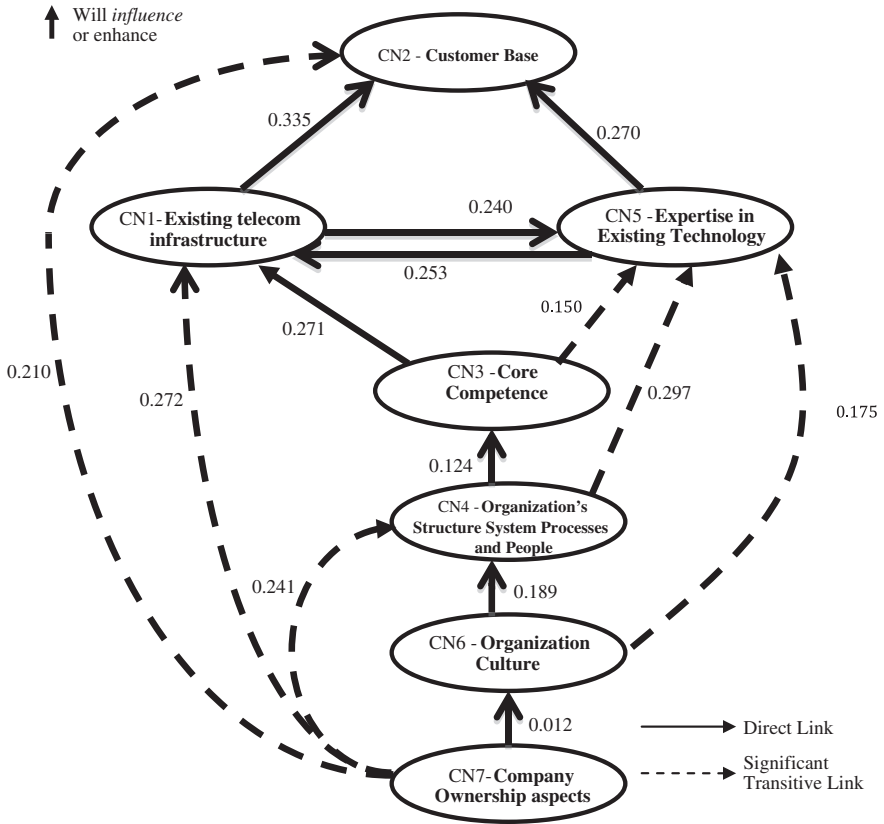
Fig. 20.1 Empirically validated hierarchical relationship model of continuity forces of telecom service sector

arrows. The dependent variables at different hierarchical stages, the predictor independent variables and the final R-square prediction values have been presented in Table 20.1. It is revealing to note that this hierarchical interrelationship diagram closely resembles the qualitative TISM for continuity forces (Fig. 20.5 in Appendix).

20.5.1.1 Discussion on Validated Hierarchical Relationship Model of Continuity Forces

It is observed that the customer base, existing telecom infrastructure and company organization structure, system and processes are affected relatively more strongly by company ownership aspect compared to organization culture. Company's organization culture affects organization structure, system and processes of the company, which in turn affects company's core competence directly, and its

Table 20.1 Predictor variables hierarchy of continuity forces microvariables and TISM verification

Sr. No.	Dependent variable	Predictor variables	Final R square
1	CN2—Customer base	CN5, CN7, CN1	0.250
2	CN1—Existing telecom infrastructure	CN5, CN7, CN3	0.186
3	CN5—Expertise in existing technology	CN4, CN1, CN6, CN3	0.183
4	CN3—Core competence	CN4	0.226
5	CN4—Organization's structure system processes and people	CN7, CN6	0.095
6	CN6—Organization culture	CN7	0.000
7	CN7—Company ownership aspects		

expertise in existing technology in transitive manner. Expertise in existing technology and existing telecom infrastructure almost equally affect each other. Customer base is relatively affected more strongly by existing telecom infrastructure compared to expertise in existing technology. The companies need to pay attention to company ownership aspect, organization culture, its structure, system and processes and its core competence as these elements drive the customer base which is directly related to company revenues.

20.5.2 Validated Model for Interrelationships Among Microvariables of Change Forces

Similar to the continuity forces, stepwise regression analysis has been carried out for the change forces in this section. The e-Business process was noted to be the most dependent of the change forces in the qualitative TISM analysis. Therefore, stepwise regression analysis, taking e-Business processes as the dependent variable and all other change forces as independent variables has been carried out. This analysis led to the hierarchical relationship among the change forces (depicted in Fig. 20.2). The beta values of the predictor relationships have been stated along with directional relationship arrows. The dependent variables at different hierarchical stages, the predictor independent variables of that stage and the final R-square prediction values have been presented in Table 20.2. It has been observed that this interrelationship diagram resembles, to a marked extent, with the TISM for change forces as determined earlier (Fig. 20.6 in Appendix). It is important to note that 'e-Business processes' and 'Mergers and Acquisitions' do not seem to have a relationship path.
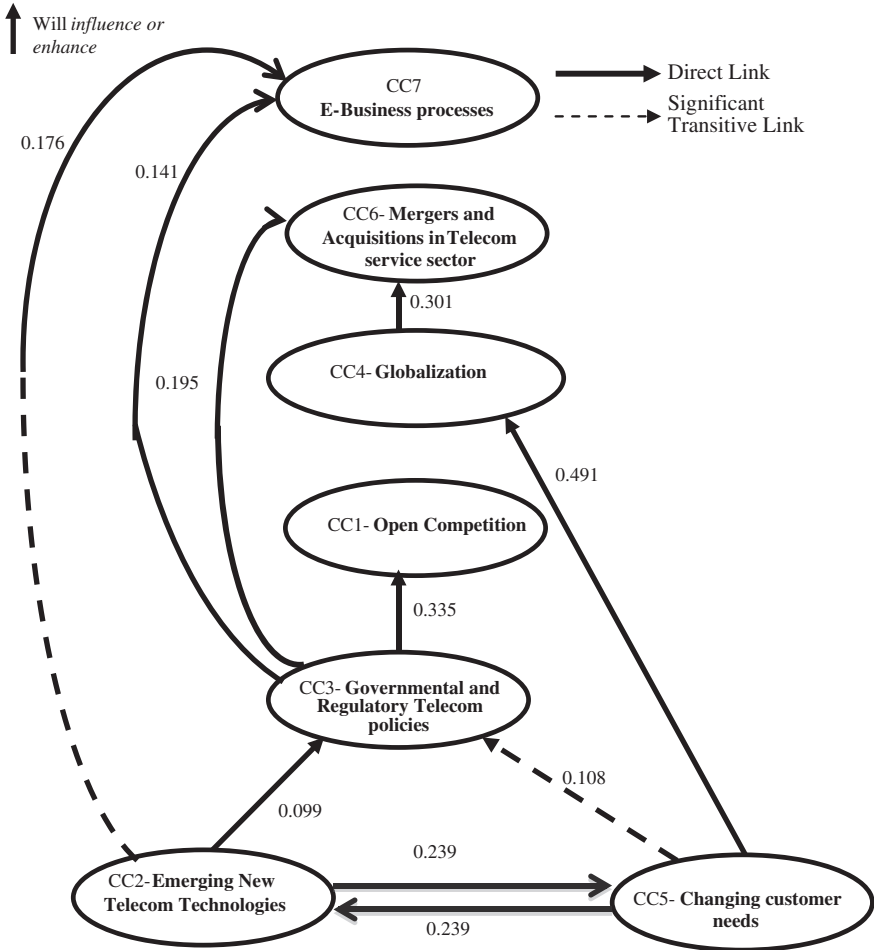
Fig. 20.2 Empirically validated hierarchical relationship model for change forces of telecom service sector

20.5.2.1 Discussion on Empirically Validated Hierarchical Relationship Model of Change Forces

It is observed that emerging new technologies and changing customer needs are two change forces, which are driving the other change forces. These change forces are also affecting each other equally. Governmental and regulatory telecom policies are affected more by changing customer needs compared to emerging new telecom technologies. The regulator, it seems, is influenced more by customer needs. Governmental and regulatory telecom policies also drive open competition quite strongly. e-Business processes; mergers and acquisitions and globalization are the

Table 20.2 Predictor variables hierarchy of change forces microvariables and TISM verification

Sr. No.	Dependent variable	Predictor variables	Final R square
1	CC7—e-Business processes	CC2, CC3	0.250
2	CC6—Mergers and acquisitions in telecom service sector	CC4, CC1	0.131
3	CC4—Globalization	CC5	0.241
4	CC1—Open competition	CC3	0.035
5	CC3—Governmental and regulatory telecom policies	CC5, CC2	0.027
6	CC2—Emerging new telecom technologies	CC5	0.057
7	CC5—Changing customer needs	CC2	0.057

most driven change forces. The company managements must be sensitive about the change forces which are at bottom half of TISM diagram, especially those which might be having high impact.

20.5.3 Validated Model for Interrelationships Among Microelements of Enterprise Factors

Similar to the stepwise regression analysis for the continuity and change forces, it has also been carried out in the context of the enterprise factors. The Compounded Annual Growth Rate (CAGR) has been observed to be the most dependent of the enterprise factors in the qualitative TISM analysis. Taking CAGR as the dependent variable and all other enterprise factors as independent variables, stepwise regression analysis has been conducted. Based on this procedure, the hierarchical relationship among the enterprise factors has been determined and depicted in Fig. 20.3. The beta values of the predictor relationships have been stated along with directional relationship arrows. The dependent variables at different hierarchical stages, the prediction independent variables of that stage and the final R-square prediction values have been shown in Table 20.3. Like other findings, this interrelationship diagram, by and large, resembles with the qualitative TISM for enterprise factors as determined earlier (Fig. 20.7 in Appendix). The analysis has been helpful in identifying the transitive relationships among the hierarchical factors.

20.5.3.1 Discussion on Empirically Validated Hierarchical Relationship Model of Enterprise Factors

It is observed that productivity per employee is the most important enterprise factor and it influences all other enterprise factors. However, it affects network rollout speed more strongly compared to other enterprise factors. The companies need to
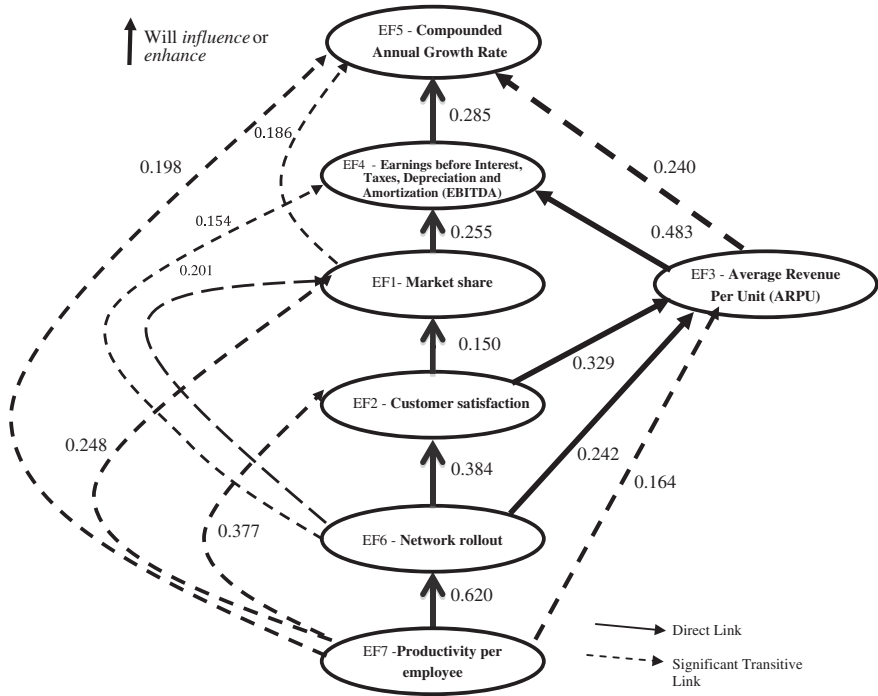
Fig. 20.3 Empirically validated hierarchical relationship model for enterprise factors of telecom service sector

Table 20.3 Predictor variables hierarchy of enterprise factor microvariables and TISM verification

Sr. No.	Dependent variable	Predictor variables	Final R square
1	EF5—Compounded annual growth rate (CAGR)	EF4, EF1, EF7, EF3	0.593
2	EF4—Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA)	EF3, EF1, EF6	0.606
3	EF1—Market share	EF7, EF2, EF6	0.373
4	EF3—Average revenue per unit (ARPU)	EF2, EF6, EF7	0.408
5	EF2—Customer satisfaction	EF6, EF7	0.469
6	EF6—Network rollout speed	EF7	0.384
7	EF7—Productivity per employee		

really study as to what motivates employees to work hard and be highly productive. Network rollout speed is the second most important enterprise factor which leads to higher customer satisfaction. It is also observed that network rollout speed and customer satisfaction influence average revenue per unit (ARPU) leading to higher overall revenue. From the TISM diagram, it is also seen that compounded annual growth rate and EBITDA are the most dependent enterprise factors. The important enterprize factors which emerge from the above validated relationship diagram are productivity per employee, network rollout speed, and customer satisfaction.

20.5.4 Validated Model for Interrelationships Among Microelements of Customer Factors

Stepwise regression analysis related to the customer factors constitutes the subject matter of this section. The Product Price and the Brand Image were noted to be the most dependent of the customer factors at the same level in the TISM analysis. Taking first, the Product Price as the dependent variable and all other customer factors including Brand Image as independent variables, stepwise regression analysis has been conducted. Thereafter, in stepwise regression analysis, the Brand Image was taken as the dependent variable and all other customer factors including Product Price as independent variables. Based on the results, the hierarchical relationships among the customer factors have been determined and depicted in Fig. 20.4. The beta values of the predictor relationships have been provided along with directional relationship arrows. The dependent variables at different hierarchical stages, the predictor independent variables of that stage and the final R-square prediction values have been shown in Table 20.4. It is a matter of satisfaction to note that this interrelationship diagram resembles quite closely with the TISM for customer factors as determined earlier (Fig. 20.8 in Appendix).

20.5.4.1 Discussion on Empirically Validated Hierarchical Relationship Model of Customer Factors

From the TISM of customer factors, it is seen that the company's ability to bring out innovative products and rate plans is the most influential customer factor affecting quality of telecom service directly and its brand image transitively. The quality of telecom service is another customer factor, which is second most important factor after the company's ability to bring out innovative products, and rate plans. Company's brand image and its product price affect one another almost in equal manner. These two customer factors are most dependent customer factors and are directly influenced by quality of telecom service.

20.6 Overall Findings and Interpretations

Validated hierarchical relationship models have been brought out as a result of this exercise. The cause and effect interpretations provided by qualitative TISM are further enhanced by the validated model. Thus, this exercise provides key insights into not only how the microvariables are related to each other and why one leads to another, but also which variables have relatively higher predictive power. The findings of this chapter are summarized as follows:
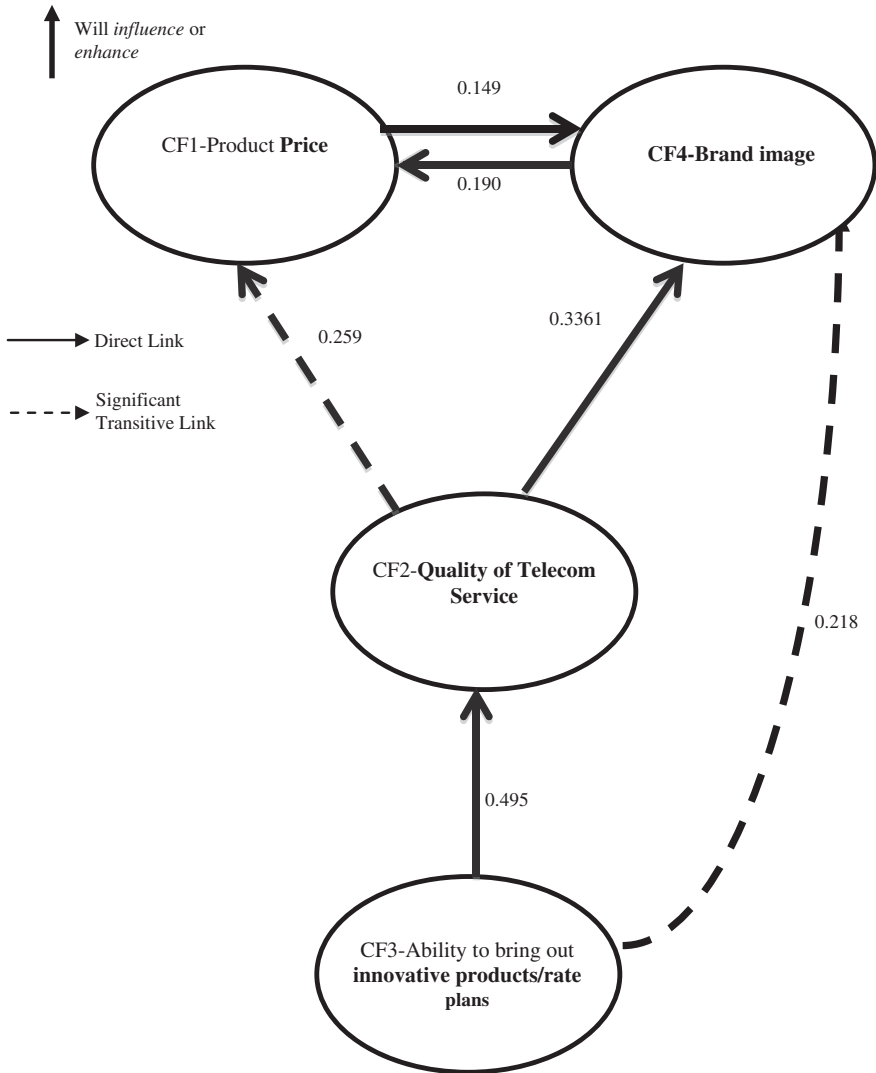
Fig. 20.4 Empirically validated hierarchical relationship model for customer factors of telecom service sector

Table 20.4 Predictor variables hierarchy of customer factor microvariables and TISM verification

Sr. No.	Dependent variable	Predictor variables	Final R square
1	CF1—Product price	CF2, CF4	0.152
2	CF4—Brand image	CF2, CF3, CF1	0.305
3	CF2—Quality of telecom service	CF3	0.246
4	CF3—Ability to bring out innovative products/rate plans		

  i. Company ownership aspect affects customer base, existing telecom infrastructure and company organization structure, system and processes relatively more strongly compared to organization culture.

  ii. Existing telecom infrastructure necessitates the companies to have expertise in existing technology. Expertise in existing technology leads companies to continue with the existing telecom infrastructure.

 iii. Company ownership aspect, existing telecom infrastructure and company organization structure, system and processes are most important predictors of customer base.

 iv. Emerging new technologies and changing customer needs are predictors of each other in almost equal measure.

  v. Governmental and regulatory telecom policies have fairly big influence on open competition in the sector.

 vi. Productivity per employee is the most important predictor of almost all other enterprise factors.

 vii. Network rollout speed is the second most important predictor of enterprise factors such as customer satisfaction and average revenue per unit (ARPU) which all lead to higher overall revenue.

viii. 'Innovative Product/Rate Plan' predicts in a significant manner the 'Quality of Service', which in turn predicts both 'Product Price' and the 'Brand Image.

 ix. 'Product Price' and 'Brand Image' predict each other.

20.7 Conclusion

TISM serves as an important tool to understand the relative strength of elements of strategic crystal in a hierarchy. The qualitative TISM gives the hierarchic relationship along with interpretations of the relationships. The empirical validation gives the magnitude of relationship quotient in the form of beta factor. Since the qualitative TISM resembles the validated relationship models, the resulting validated model with interpretations help in drawing up strategic recommendations for the sector.

Appendix

See Figs. 20.5, 20.6, 20.7, and 20.8.
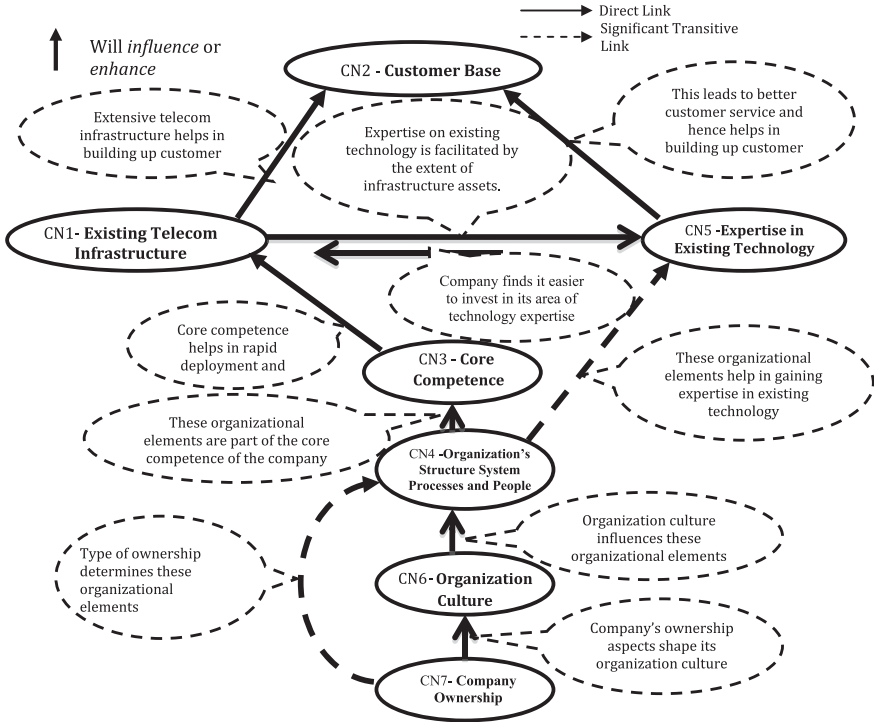
Fig. 20.5   Total interpretive structural modelling (TISM) for *continuity forces* of telecom service sector

Fig. 20.6 Total interpretive structural modelling (TISM) for *change forces* of telecom service sector
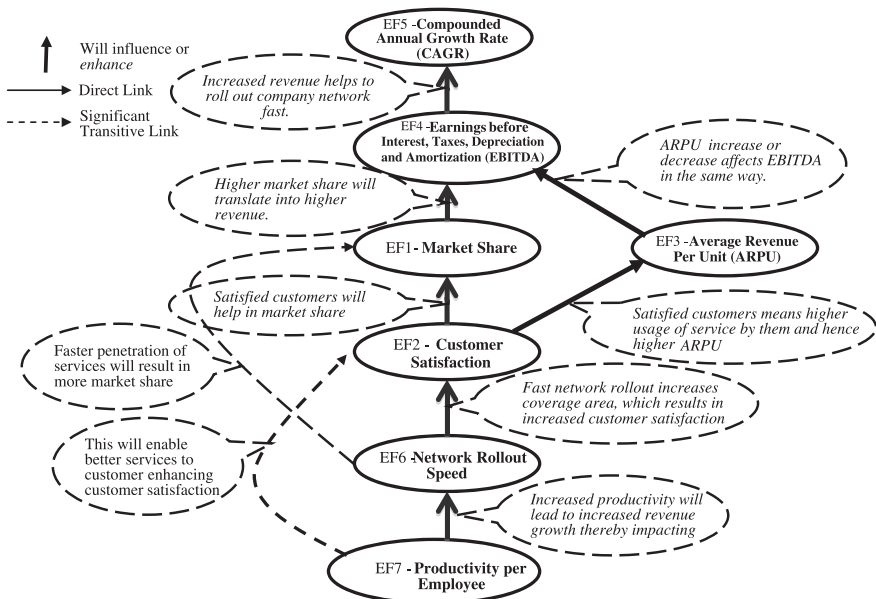
Fig. 20.7 Total interpretive structural modelling (TISM) for strategic *enterprise factors* of telecom service sector
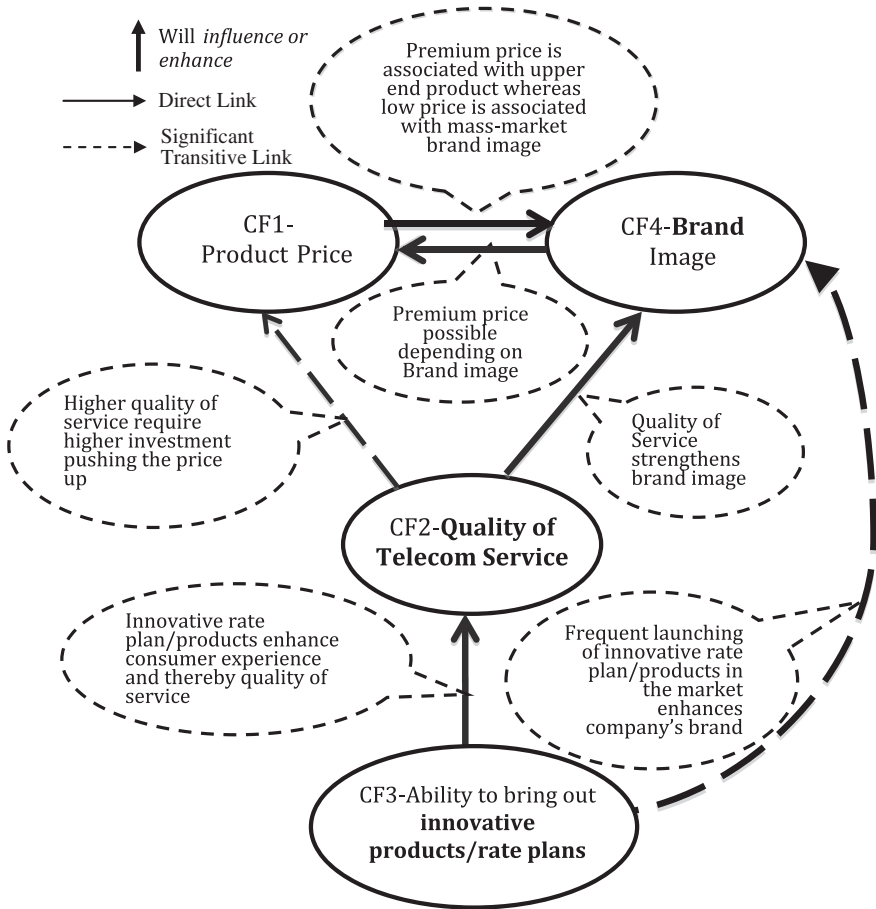
Fig. 20.8 Total Interpretive structural modelling (TISM) for strategic *customer factors* of telecom service sector

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