

SERVICE INNOVATION IN BOTTOM OF THE PYRAMID MARKETS

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**A THESIS SUBMITTED
FOR THE DEGREE OF MASTER OF ENGINEERING
DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING
NATIONAL UNIVERSITY OF SINGAPORE
2011**

Acknowledgements

I would like to express sincere gratitude and appreciation to my supervisor, A/Prof. Tan Kay Chuan, for his consistent guidance and support throughout the whole research project. I cannot thank him enough for his unabated help especially in hard times during the course of my studies at NUS. I will always be grateful for both his unmatched patience and professional advice.

I also offer my utmost thanks to all the faculty members and administrative staff at ISE whose direct and indirect help has been an instrument in completion of my studies. Furthermore, I would like to thank all my friends in the Ergonomics laboratory who made my experience at NUS more enlightening and rich. In particular I would like to thank Ayon Chakrabarty and Zhou Qi for their valuable suggestions and help.

I have been fortunate to make friends with extremely good people in the last few years namely, Shamas-ur-Rehman Toor, Iftikhar Ahmed and Ayon. Without having to share my thoughts, grieves and laughs with them this experience would not have been as rewarding.

Last but indeed the most is the love of my family. I pay my deepest appreciation to my parents for their consistent love, affection and support. I owe all my successes to them and can never payback for their kindness and love towards me. Thanks also to my brother for being so selfless in his love for his younger brother. I will never forget how my family has been a wall of strength for me and have kept me going though the challenges of life.

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Summary

We are seeing a major macro-economic shift from goods to services both in developed countries and developing economies. The percentage contribution of service sector in GDP in the world economy is growing and is expected to continue to rise. About two third of the world's population earns less than \$2,000 each per year it is equivalent to about 4 billion people. This enormous market is also termed as the bottom of the pyramid (BOP) market. Although the vastness of the market is quite evident yet it remains largely untapped.

The fundamental purpose of this research work is to facilitate service innovation in BOP markets. Different factors have been identified based on extensive literature review that could help service innovation performance of organizations in BOP markets. The objective is to develop a framework for service innovation in the BOP markets and investigate validity of the framework through questionnaire survey involving organizations in different service sectors.

Based on data analysis of 43 serviced-based organizations all over the world, it has been found out that organizations focusing more on the identified factors in the framework are more successful in their final outcomes. In other words these factors can enhance the performance of service innovation in the BOP markets. The analysis also sheds light on some of the major reasons behind lack of success of innovation initiatives for example economic risks associated with the innovation initiatives, lack of staff and demand risks.

1. Introduction

1.1 Research Motivation

Any organization that wishes to survive/grow in today's competitive environment must be able to innovate. According to Steve Jobs (co-founder and CEO, Apple), "innovation distinguishes between a leader and a follower". If we see the market leaders around us it is quite evident that they have shown a consistent ability to successfully innovate. Thus innovation is central to the growth of an organization.

In the last decade a major macro-economic shift from goods to services has occurred both in developed countries and developing countries. According to CIA factbook, United States' service sector accounted for 79.2% of GDP and in UK service sector contributed to 76.2% of its GDP in 2008. The situation is not much different in other European countries, South East Asia and economies like India, Brazil and Russia where services are fast becoming a major player both in terms of GDP and employment. The percentage contribution of service sector in GDP in the world economy is expected to continuously rise.

American companies have generally responded more quickly than their European counterparts to this service dominated economic landscape. US has some of the world's most innovative service companies, which are developing innovative new service concepts, experimenting with new services business models, and redesigning their organizational structures to drive innovation.

Thus if developing countries want to grow and become developed ones, it is of utmost importance that organizations continue to come up with innovations in the service sector.

According to Prahalad (2005), “fully 65% of the world's population earns less than \$2,000 each per year - that's 4 billion people”. This enormous market is also termed as the bottom of the pyramid (BOP) market. Although the vastness of the market is quite evident yet it remains largely untapped. Companies believe that people with such low incomes have little or no money to spend on goods let alone on services as they barely fulfill their basic needs. However, it is a known fact that a number of service organizations have been successful in doing business in the BOP markets. The question is if some companies have been successful in tapping this huge market what is stopping others from following suite. However, political and economic climate in the developing countries, where most of the world’s poor reside, have changed over the period of time because of political reforms, openness to investment, low-cost wireless communication networks etc. All these changes are providing a great opportunity to the world to reach even the poorest and farthest of the cities and villages. Hence, enormous economic potential lies in the bottom of the pyramid markets. It is imperative for the organizations to come up with innovations in their products and services for them to be useful for the people lying at the BOP.

1.2 Scope of Work

The basic objective of this research work is to facilitate service innovations in the BOP markets.

The present study attends to the following issues

- Developing a framework for service innovation in the BOP markets.
- Investigating validity of the framework through questionnaire survey involving organizations in different service sectors.

1.3 Organization of Thesis

There are a total of 10 chapters and are organized as follows. Chapter 2 is a review on service. This chapter discusses literature on service definitions, service classification schemes and the differences between services and manufacturing. Chapter 3 gives brief review on innovation. In chapter 4 extensive literature review is done on service innovation, types of service innovation, service innovation process and service innovation patterns. Chapter 5 gives detailed background of previous research on service innovation in BOP markets along with specific relevant examples. Chapter 6 focuses on developing the framework for service innovations in BOP markets. In chapter 7, research methodology is discussed. Chapter 8 focuses on giving data descriptive while chapter 9 gives research findings. Finally, Chapter 10 gives conclusion on findings and implications for future research.

2. A Review on Service

2.1 Introduction

According to 2008 estimate, the service sector's contribution to World's economy was 64% (the figures are taken from CIA factbook) of GDP. The shift has taken place both in the developed and developing economies of the world. In case of US, 1987 was the year when both service and goods accounted for 50% of the GDP. After 1987 the contribution of service in US GDP has been increasing at a steady rate. In 2008, United States' service sector accounted for 79.2% of output in terms of GDP. In UK, service sector contributed to 76.2% of its GDP in 2008. The situation is similar in other European economies, South East Asia and developing economies like China (40.2%), India (53.7%), Brazil (66%) and Russia (54.8%), where services are fast becoming a major player both in terms of GDP and employment.

This major shift in the world economies towards services sector has resulted in various researchers contributing to the service literature. The service research from its beginning can be divided into stages, like an initial realization of the difference between goods and service, the development of conceptual frameworks, the empirical testing of these frameworks and the application of the tools and frameworks to improve service management (Johnston, 1999).

2.2 Definition

In the literature the word "service" has been widely used. Government statistics all over the world define services by industry type: anything not manufacturing or extraction (agriculture,

mining, fishing etc.) is service (Sampson and Froehle, 2006). Although this definition also forms the basis for service sector's contribution to GDP numbers shown above but it plays down the role of services when viewed as processes (Grönroos, 1988). If we define services as processes then it will also include all accounting, financial analysis, and so on done by General Motors, for example, which counts as a service (Metters and Marucheck 2007). According to Johns (1999), the richness and diversity of the word "service" can be understood from the fact that Collins Concise Dictionary lists 30 different definitions of service and he suspects that much of this richness maybe found in the use of "service" in management literature. Thus, given the variety of meanings researchers have been using the word "service" in different contexts.

One of the initial authors to define service was Shostack (1977), according to whom "services are rendered, they are experienced". According to Goldstein et al (2002), service unlike a manufactured product which consists of physical components, is composed of components which are mainly intangible such as ideas, processes and concepts. Parasuraman et al (1985) also explained that services were different from products because of their four distinguishing characteristics, i.e., intangibility, inseparability, heterogeneity and perishability. According to Voss et al (1992), the implication of these distinguishing characteristics is to make management of development of service a challenge. There are certain other approaches to define service, for example according to Edvardsson and Strandvik (2000) service is the customer's experience of a process which comprises of activities and resources. This is also known as "service encounter". Thus another challenge associated with service sector is the complex task of understanding and anticipating latent customer needs (Mathing et al, 2004). Some of the other authors (e.g. Lewis, 1989; Donthu, 1991) describe services as performances. Performance does not mean simple

execution but it has connotation of drama, face-to-face contact or eye catching skill (Johns, 1999). Thus a service is not a simple delivery but it is a combination of delivery plus performance.

2.3 Difference between Service and Manufacturing

Literature review in the previous section focuses on defining “service” and in the process differences between service and manufacturing are also highlighted. As discussed earlier, Parasuraman et al (1985) differentiates services from manufactured goods based on IHIP (Intangibility, Heterogeneity, Inseparability and Perishability) characteristics. Johns (1999) contrasts service and manufacturing paradigms; service paradigm focuses on customer relations and intends to meet market requirements through actions. Whereas, manufacturing paradigm focuses on inputs, products and processes and intends to meet market requirements through tangible output. According to Gummesson (1994), in today’s world customers buy an offering and its value is composed of many components, which may include both activities/services and things/manufactured products. Some of the other differences of service from manufacturing as mentioned in past literature include, more customer interaction (Chase, 1978), difficult to test in concept (Johns and Storey, 1998), importance of front line employees (Bowen, 1990), difficult to measure service quality (Grönroos, 1984) and labor intensity. However, most of the above mentioned differences emanate from the IHIP characteristics of services.

2.4 Service Quality

Some of the initial definition of service quality came from the manufacturing sector with themes like “zero defects” and “doing it right the first time”. However, the IHIP characteristics of services render these definitions insufficient to understand service quality. Service quality is the

measure of how well the service level delivered matches customer expectations. Deshmukh et al (2005), observed that the service quality outcome and measurement is dependent on type of service setting, situation, time, need etc. Parasuraman et al (1985) developed a conceptual model of service quality (SERVQUAL model) and in the process identified three distinctive service quality themes;

- Service quality is more difficult for the consumer to evaluate than goods quality.
- Service quality perceptions result from a comparison of consumer expectations with actual service performance.
- Quality evaluations are not made solely on the outcome of a service; they also involve evaluations of the process of service delivery.

Based on Parasuraman's work i.e., SERVQUAL model, Zeithaml et al (1988) developed an extended service quality model. Their model identified various internal organizational factors that affect the level of service quality delivered to customers. The factors are listed below along with the service quality gap they belong to:

Gap 1: Difference between customer expectation and management perception of consumer expectations.

Factors: market research, upward communication, number of management levels

Gap 2: Difference between management perception of consumer expectations and service quality specification.

Factors: management commitment, goal setting, standardize tasks related to service delivery, management perception of the feasibility to meet customer expectation

Gap 3: Difference between service quality specifications and the service quality delivered.

Factors: teamwork, employee-job fit, technology-job fit, perceived control, supervisory control systems, perceived conflict between expectations of customers and expectations of organization, clarity of goals and expectations

Gap 4: Difference between service delivery and what is communicated about the service to consumers.

Factors: horizontal communication, propensity to over promise

Gap 5: Difference between consumer expectations and perceptions.

Factors: This work was done by Parasuraman et al (1988). The participating firms were evaluated by the authors on the following five dimensions: tangibles, reliability, responsiveness, assurance, and empathy.

Thus there are a number of factors that affect the quality of service in an organization. Most of these factors are quite related to each other. Thus, the flattening of one area can affect other areas, and the quality of service of the organization as a whole. Most of the factors like goal setting, team work management commitment, vertical/horizontal communication, etc, are facilitated by the top management. Thus we cannot deny the importance of leadership for the desired level of service quality.

2.5 Service Typologies

There have been number of research articles in the area of service typologies. Starting from Judd (1964), who categorized services as rented goods, owned goods and non- goods services, number of researchers have come up with different typologies. Some of the most comprehensive works were done by Lovelock (1983), Mersha (1990), Dotchin and Oakland (1994), Cook et al (1999)

and Liu et al (2008) by reviewing the service typology literature in chronological sequence (see Table 2.1).

Table 2.1: Summary of Selected Schemes for Service Typologies

{Liu et al 2008; Cook et al, 1999; Dotchin and Oakland, 1994(a); Mersha 1990}

Judd	1964	Rented; Owned and Non – goods services
Kotler	1972	Goods entering product completely; goods entering product partially; business services not entering goods
Rathmell	1974	Type of seller; type of buyer; Buying motives; Buying practice; degree of regulation
Shostack	1977	Tangible/ intangible service element domination
Sasser et al	1978	Percentage of tangible goods versus intangible benefits contained in each service bundle
Hill	1977	Action of services on people/goods; permanence; reversibility; physical/mental; individual/collective
Thomas	1978	Technology used in service production: Equipment-based/people-based delivery
Chase	1978	Extent of customer contact required in service delivery: High/low customer contact
Mills and Margulies	1980	Personal interface between the customer and service organization: maintenance; task and personal interactive
Kotler	1980	People/equipment; customer presence; satisfaction of personal/business needs; public/private/profit/non-profit
Lovelock	1980	Basic demand characteristics; service content and benefits; service delivery procedures
Fitzman and Sulliman	1982	People changing; people processing; facilitating services

Table 2.1: Summary of Selected Schemes for Service Typologies

Maister and Lovelock	1982	Degree of customer contact; degree of customization
Lovelock	1983	Nature of service; relationships; potential for customization and employee discretion; demand pattern; service delivery method
Johnston & Morris	1985	Product/process basis
Goodwin	1986	Power; commitment
Mills	1986	Environmentally based; maintenance/task/personal interactive
Schmenner	1986	Degree of interaction; customization; labour intensity
Larson and Bowen	1989	Diversity of demand; customer participation
Johnston et al	1989	Frequency of transaction
Mersha	1990	Passive contact; active contact
Wemmerlov	1990	Nature of customer/service system interaction; degree of routinization of service process; serviced objects in service process
Voss et al	1992	Professional services; service shop; mass services
Kotler & Armstrong	1994	Type of service firm: intangibility, inseparability, variability, perishability
Kellogg & Chase	1995	Empirically assessed model of customer contact based on: communication time, intimacy and information richness
Lovelock & Yip	1996	People processing services, possession processing services, information-based services
Stell and Donoho	1996	Product type vs risk, involvement and purchase effort
Collier and Meyer	1998	Number of pathways built into service system design management customers' service encounter activity sequence in repeatability
Coulter and Ligas	2004	Customer and provider relationship (professional, causality, personally acquainted, personal friend)
Schemenner	2004	Degree of variation and customization; relative throughput time
Liu and Wang	2008	Classification Model with place, provider, process and customer

The primary intent of coming up with service typologies is to provide stakeholders with strategic insights for the management and growth of service systems and organizations (Cook et al, 1999). Sampson and Frohele (2006) observed that service typologies have been proposed as a means for generating strategic insights for the management. For strategic insights study of service typology would lead to ways of analyzing services that highlight the characteristics they have in common (Lovelock, 1983). This would provide researchers a basis for developing sound theories for the design, improvement and innovations in the service sector.

2.6 Conclusion

Services have emerged as one of the most integral part of modern society. The service sector has grown to become a dominant driver of economic well being (Dabholkar et al, 1996). The literature review shows that although researchers have defined service in a variety of different ways but most of them agree on IHIP characteristics as the distinguishing feature of service as compared to manufacturing. There also exist different service typology schemes in literature highlighting the differences and similarities among different services.

Thus any attempt in studying service innovation area has to consider both the uniqueness of service as compared to manufacturing and the diversity of service area. In the past researchers have tried to apply manufacturing theories to service sector but have met with considerable criticism in the service operations literature (Silvestro et al, 1992).

3. A Review on Innovation

3.1 Definition

Innovation can be viewed and defined in a variety of ways. The American Heritage Dictionary defines innovation as “the act of introducing something new”. According to Department of Trade and Industry (UK), successful exploitation of new ideas is known as Innovation. However, Merriam-Webster online dictionary describes innovation as a new idea, device or method.

Researchers also have defined innovation in a variety of different ways. For example Myers and Marquis (1969) define innovation as, “It is not a single action but a total process of inter-related sub-processes. It is not just the conception of a new idea, nor the invention of a new device, nor the development of new market. The process is all these things acting in an integrated fashion”. However, most of the subsequent researchers have distinguished innovation from invention. They argue invention is an idea made manifest, and innovation is an idea applied successfully (Mckeown, 2008).

Innovation does not have to be new to the world necessarily. The basic innovation maybe the return to a method or a practice that is old in the sense that it has been used before but with new components (Heywood, 1965). Thus successful introduction of a product, process or service new to the firm and not only new to world or market place is termed as innovation (Hobday, 2005). Rowe and Boise (1974) define innovation as the “successful utilization of processes, programs,

or products that are new to an organization and which are introduced as a result of decisions made within that organization”.

3.2 Why Innovate?

Any organization that wishes to establish and maintain a competitive position in today’s environment must be able to innovate. In their study of the economics of innovation, Freeman et al (1982) emphasize the above point by writing that “not to innovate is to die”. Innovation signifies not only the prospect of growth and survival but also the opportunity to significantly influence direction of the industry (Davila, et al 2006). For example Apple Computers astonished the industry by launching iTunes and iPod with a strategy of combining known technology with innovative business model in the process they became industry leaders. If we see the market leaders around us it is quite evident that they have shown a consistent ability to successfully innovate. Table 2.1 shows examples of some of the highly successful innovative companies.

Table 3.1: Market Leaders in 2004 (Trot, 2005)

Industry	Market Leaders	Innovative New Products
Aerospace	Airbus, Boeing	Passenger aircraft
Pharmaceuticals	Pfizer, GlaxoSmithKline	Impotence, Ulcer treatment drug
Motor cars	Toyota, DaimlerChrysler, Ford	Car design and associated product developments
Computers and software development	Intel, IBM Microsoft, SAP	Computer chip technology, computer hardware improvements and software development

Above is the micro-level perspective of innovation. Authors over the years have studied innovation from the perspective of both micro and macro level. According to Sundbo (1998) “innovation is a phenomenon that takes place at the micro-level, in the individual companies-just as norms are created in the primary groups. But societally, at the macro level, the various micro activities form a part of a greater structural context and are supplemented by the new macro-type elements”.

3.3 Conclusion

As discussed earlier, according to Davila et al (2006), innovation signifies not only the prospect of growth and survival but also the opportunity to significantly influence direction of the industry for any organization. According to UK Innovation Report (2003), “dramatic moments in the history of industrial change have always been characterised by the successful exploitation of new ideas and the achievements of innovators. Innovation has driven economic progress, from the invention of the spinning jenny that transformed the textile industry during the 18th century, to the harnessing of electricity and the development of mass production. More recently, the internet and mobile technology have revolutionised business performance and the economic potential of nations”.

Technology and Science advancements are changing our world very rapidly. Developments in Information and Communications Technologies (ICT), biotechnology and nanotechnology are instrumental in new innovations every now and then, and generating many options for organizations to achieve advantage from competitors.

Global Communications, the 265 days a year and 24 hours a day media of the 21st Century, results in consumer needs and requirements changing at a rapid rate, resulting in new trends, ideas and services spread all over the world immediately.

Under the circumstances most of the market leading organizations have been able to consistently innovate in a variety of different fields. We know that the United States, European Union and Japan's fifty percent of growth is in the industries that were not known about a couple of decades ago (Jagersma, 2003). This clearly indicates that innovation should become a foremost concern for the countries in the rest of the world as well, especially developing nations if they want to grow and develop at a fast pace.

4. A Review on Service Innovation

4.1 Service Innovation

In the recent past the importance of innovation and the increasingly prominent role being played by service activities in productive systems have made innovation in the service sector an issue of vital significance (Gallouj and Weinstein, 1997).

History of research on service innovation has been studied by various authors in the last decade (Salter and Tether, 2006; Gallaher et al, 2006 and Miles, 2002). Almost all the researchers have observed a pattern whereby old theories fade away, new ones crop up and old ones are revived in a new form (Sundbo, 1997). Until 1980s very little research was carried out even in the service sector let alone in the area of service innovation. Partly the reason can be attributed to the notion proposed by Adam Smith that it is the material strength that matters. Most of the research on innovation was focused on manufacturing, specifically on the source of new technologies. Innovation activity in the manufacturing was understood using R&D statistics and patents to support focus on new technologies (Salter and Tether, 2006). Since service sector was not associated with producing new technologies hence the area was totally ignored.

However, analysis of innovation in services is not as easy as in the manufacturing sector because of two reasons. One reason is that most of the innovation theory has been developed on the basis of technological innovation in the manufacturing sector. The second reason is the unique IHIP characteristics of services identified in the literature i.e., intangibility, heterogeneity,

inseparability and perishability (Parasuraman et al, 1985; Easingwood, 1986; Voss et al, 1992; Chan et al, 1998; Hipp and Grupp, 2005). In the following section the implications of IHIP characteristics for innovation in services are discussed in detail.

4.2 Service Characteristics

4.2.1 Intangibility

Intangibility implies that services cannot be touched or seen like goods (Rushton and Carson, 1986). According to John and Storey (1998), “services are primarily intangible even though efforts maybe made to make them more tangible for example by supporting financial service products with attractive looking plastic cards”. Thus services are experiences, and unlike products, cannot be easily assessed before purchase. Consequently, a service innovation is more likely to be successful where there is tangible evidence as a surrogate for quality (Gima et al, 1996). This implies greater hindrance in sustaining service innovation advantage because of ease of replication, lack of strong patent protection and low upfront costs (Shostack, 1984).

4.2.2 Inseparability

Inseparability means concurrent production and consumption of services thus services cannot be inspected like product flows before consumption. This brings customers into direct contact with service delivery system. Consequently, a critical determinant of service quality is the ability of the customer to perform specific roles in the service encounter (Gima et al, 1996). For example, customization of a service is dependent on the expertise of contact personnel and also on the ability of the customer to identify and communicate specific needs. Inseparability also means better chance for contact personnel to grasp customer needs because of direct contact. This should help service firms to innovate according to customer needs.

4.2.3 Heterogeneity

Heterogeneity means variability in the quality of services delivered because of the human factor (Chan et al, 1998). Although service variability offers opportunities for firms to innovate and produce customized services but it may also lead to higher perceptions of unreliability, purchase risk, and slower adoption (Shostack, 1984). Customers of services risk buying an experience that they cannot fully appraise before purchase (Johne and Storey, 1998). Thus service quality depends on the performance of the service provider (Goronoroos, 1982).

4.2.4 Perishability

Perishability implies that services, unlike products, cannot be stored leading to potential problems of capacity planning. This implies a greater need for teamwork among different functions in the service organization to ensure consistency in supply-demand (Lovelock, 1983).

4.3 Types of Service Innovations

4.3.1 Radical/Incremental Innovations

There are different ways of categorizing service innovations. In general, service innovations have been classified on a continuum of a totally new innovation or an improvement/added value to an existing one. The pioneer work in this field was done by Lovelock (1984), who observed different categories of service ranging from major innovativeness right through to style changes. Chan et al (1998) have categorized service innovations as incremental (small improvement on present process), distinctive (significant improvement over present processes/procedures, and breakthrough (significant improvements based on new technologies or approaches).

However, broadly service innovations can be classified into two categories named as radical or incremental innovations (Johnson et al, 2000; Albury, 2005). According to Albury, incremental innovations are relatively small changes and variations to existing services or processes whereas radical innovations are developments of new services or fundamentally new ways of organizing a delivery service. Johnson et al (2000) further classifies radical and incremental innovation with each having different sub-categories, shown in Table 4.1.

Table 4.1: Classification of Service Innovation (Johnson et al, 2000)

Service Innovation Category	Description
<i>Radical innovation</i>	
Major innovation	New services for the market as yet un-identified, innovations usually driven by information and computer based technologies
Start-up business	New services in a market that is already served by existing services
New services for the market currently served	New services to existing customers of an organization
<i>Incremental innovation</i>	
Service lines extensions	Augmentations of existing service line such as adding new menu items, new routes and new courses
Service improvements	Changes in features of services that currently are being offered
Style changes	Modest forms of visible changes that have an impact on customer perceptions, emotions, and attitudes with style changes that do not change the service fundamentally, only its appearance
Technology driven innovations	Incorporation of technology into the service delivery system, allowing more customization and differentiation

4.3.2 Product/Process Innovation

Another way of categorizing service innovation is whether it is a new service or a problem solving idea. According to Chan et al (1998), product innovation is development of new products, services and concepts that are critical to a corporation's growth and financial performance whereas process innovation enhances the corporation's competitive capabilities by bringing any problem solving idea into use. In a similar way Bessant (2005) defines product innovation "to renew what a corporation is offering" while process innovation "to renew the ways in which it creates and deliver that offering". Thus,

Service Innovation is the evolvement of a new service or concept

Process innovation involves service delivery process and changes in organization's strategies with the hope of coming up with better bottom line results.

4.3.3 Other ways of Categorizing Service Innovations

There have been various other efforts to categorize service innovations. Avlontis et al, (2001) came up with six categorizations of financial services to capture various levels of service innovativeness. According to Avlontis, the categories are;

1. New-to-the-market service including new-to-the-world services
2. New-to-the-company service, service that are new to the firm but not new to the market
3. New delivery process consisting of lines new to a firm, but not new to the world
4. Service modifications, major improvement or modifications of an existing service
5. Service line extension that is additions to a firm's existing lines
6. Service repositioning, i.e. repositioning of an existing service.

In another study, Gadrey et al (1995) have come up with four types of financial service innovations i.e., innovations in service products, architectural innovations, modifications of

service products, innovations in processes and organization for existing service. Debackere et al (1998) has categorized service innovation in the following way; breakthrough projects, platform projects and derivative projects. Table 4.2 shows a modification of the comparison of the major service innovation categories done by Alam (2006).

Table 4.2: Classifications of Service Innovations (Alam, 2006)

Alvontis et al (2001)	Gadrey et al (1995)	Debackere et al (1998)
New to the market service	Innovations in service products	Breakthrough projects (fundamental changes to existing products)
New to the company service	Architectural innovations (bundling- unbundling of existing service products)	Platform projects (new product lines)
New delivery process	Modifications of service products	Derivative projects (Incremental changes)
Service modifications	Innovation in processes and organization for existing service	
Service line extensions		
Service repositionings		

Industry has been using its own ways of classifying service innovations. For example Doblin, Inc (a Chicago based company), came up with two broad innovation types i.e., ‘inside-out’ category and ‘outside-in’ category. The ‘inside-out’ category has two sub elements –Process and Offering. The ‘outside-in’ category includes- Delivery/Marketing and Alliances/Business Model.

The above literature shows that categorizing service innovations is a matter of judgment.

4.4 Innovation Patterns and Service Sectors

In this section a review of literature on innovation patterns in different service sectors is done. The first part is the review of the some of the early literature that focuses on understanding innovation patterns in services using tools, models and techniques developed for innovation in manufacturing (Gallaher et al, 2006).

4.4.1 Innovation Patterns in Service Sector from the Lens of Manufacturing Sector

One of the pioneer works on studying innovation pattern in services was done by Barras (1986) using financial sector as his unit of analysis. He introduced the theory of reverse product cycle (RPC) whereby innovation in services first focuses on processes (i.e., using IT to improve efficiency) before shifting to products (because of learning and thus ability to customize). The RPC model received little criticism from researchers for a long time. However, recently it has come under severe criticism because it assumes that all different types of service sectors follow the same innovation pattern (Uchupalanan, 2000). Another notable effort to integrate the service sector into models of innovation was Pavitt's (1984) famous paper on "sectoral patterns of technological change". Pavitt divided a national economy into three sectors- supplier based, production intensive, and science based. He categorized all services as the supplier-dominated category. Another pioneer work aimed at classifying service sectors according to their innovation pattern was done by Miozzo and Soete (2001). Using theoretical hypothesis they elaborated on Pavitt's model. They established three groups of services in terms of innovations: supplier dominated, scale intensive and science based (shown in Table 4.3).

Table 4.3: *Service Sectors and Innovation (Miozzo and Soete, 2001)*

	Sector	Examples	Technological Innovation Source
1	Supplier Dominated	<u>Personal Services:</u> Restaurants, Laundry, Beauty, Barber <u>Public and Social Services:</u> Health, Education, Public Administration	Most innovations come from suppliers of equipment, information and materials
2a	Scale Intensive Physical Networks	Transport, Wholesale, Distribution	Modern information and communication technology
2b	Information Networks	Finance, Insurance, Communications	Modern information and communication technology
3	Specialized suppliers/Science based	Software, Specialized Business Services	Innovative activities of the businesses itself in close cooperation with client

Another similar kind of work has been done by Evangelista and Sirilli (1998) who categorized service firms into four sectors based on innovation behavior supported on a wider empirical base (a specialized Italian survey of services), as shown in Table 4.4;

Table 4.4: *Service Sectors and Innovation (Evangelista and Sirilli, 1998)*

	Sector	Technological Innovation Source
1	Technology users	Technologies bought from external sectors manufacturing/IT
2	Interactive services	Close interaction with clients
3	Science and technology based services	Internal innovation in cooperation with research institutes and universities
4	Technology consultancy services	Innovation source: internal innovation activities in cooperation with clients

Thus as the sources of innovation are different among different service sectors therefore we should anticipate a variety of innovation patterns as indicated by the tables above. Among these the RPC model maybe only one of several empirically identifiable configurations as proved by Uchupalanan (2000) in his work on IT innovations in banking services.

4.4.2 Innovation Patterns in the Service Sector

All the literature mentioned above focuses on technological innovations, thus probably giving only part of the whole picture as far as innovation patterns in the service sector are concerned. Researchers have criticized the focus on technological innovations by most innovation researchers who turned their attention to service sector (Gallouj, 2000). Thus another line of research began to develop which argues that service sector is different from manufacturing and therefore it is inappropriate to study innovation in services by adapting empirical tools and frameworks developed based on technology-based manufacturing firms.

Research started focusing on taking a broader perspective of innovation patterns in service sector (Gallouj and Weinstein, 1997; Sundbo et al, 2000). In their research, Sundbo and Gallouj(2000) have come up with several distinctive innovation patterns in services stating each firm or industry may follow different patterns for different innovations (see Table 4.5);

Table 4.5: Service Innovation Patterns (Sundbo et al, 2000)

	Innovation pattern	Examples
1	The classic R & D pattern	Large scale data processing, building maintenance firms etc
2	The service –professional pattern	Mid-sized professional services: Consultancy and engineering firms
3	The organized strategic innovation pattern	Large firms not having organized R&D departments: innovation is a widely diffused task carried out by ad-hoc teams
4	The entrepreneurial pattern	New technology based small service firms (improving initial radical innovation): IT service and bio-technology firms
5	The artisanal pattern	Small firms involved in operational services (innovations are supplier driven or incremental in nature): hotels, laundry, security
6	Network pattern	Professional organizations established by group of service firms: tourism, financial services

Hipp and Grupp (2000) studied innovation patterns using survey instrument in private service firms in Germany encompassing both organizational and technological innovations. The survey asked about organizational, product (service) and process innovations. Hipp and Grupp observed that patterns of innovative activities were related to variables like firm size, service sector and service orientation (whether the services were standardized or customized). In another such study Den Hertog (2003) observed that innovations may focus on four diverse elements of service production and delivery as shown in Figure 4.1.

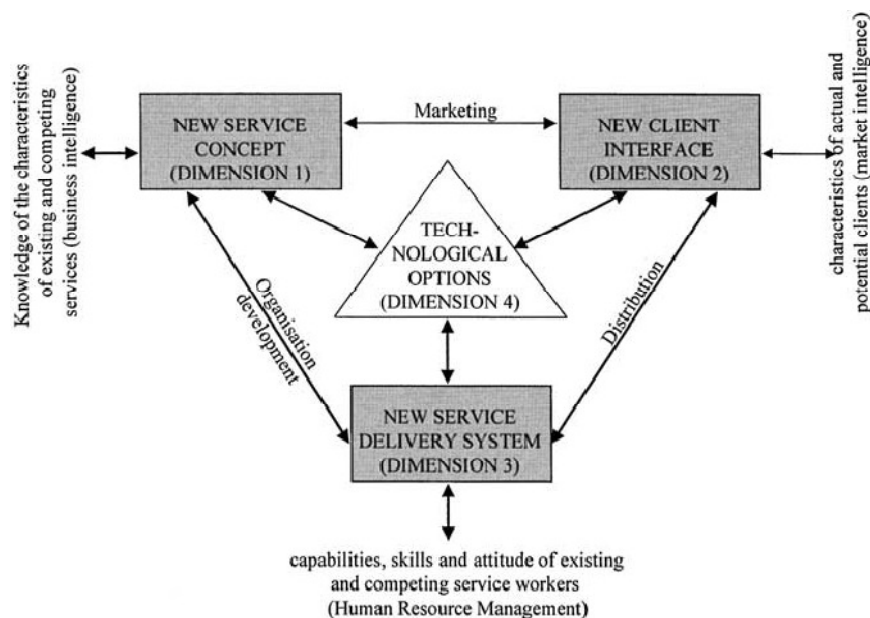


Figure 4.1: A 4 Dimensional Model of Service Innovation (from Hertog, 2003)

The four dimensions are explained below;

- 1- Service concept: innovations influenced by characteristics of existing and competing services.
- 2- Client interface: innovations influenced by current and potential clients

- 3- Service delivery system: innovations influenced by capabilities attitudes and skills of service workers
- 4- Technological options: innovations influenced by technology

In addition to the four dimensions of innovation, the figure shows linkages between them. The linkages are equally important in realizing the innovations. These links represent marketing and distributional activities, and the implementation of organizational reforms. These activities are carried out by the organizations' employees or are sourced from specialized firms. According to Hertog, "A central variable in our study of innovation patterns is the way in which the supplier of inputs (equipment, capital, human resources and so on), the client firm (intermediate user), and the final consumer (end user) interact". Based on his analysis, Hertog illustrated five different kinds of innovation patterns in services i.e., supplier dominated, client dominated, innovation within services, innovation through services, and paradigmatic innovations.

The literature on innovation patterns in service shows that research in the area has moved from a view where services were not important, and away from one-size-fit-all RPC explanation of service innovation, and are starting to appreciate how service innovation relates to the location of services in knowledge driven economy (Miles, 2002).

4.5 Conclusion

In the last decade or so literature in the service innovation area has moved away from the shadow of manufacturing sector literature. Scientists have realized the importance of service sector as a standalone area for research with many unique characteristics as compared to the manufacturing sector. The importance of research in service area has also increased because of the fact that

some of the major world economies have been shifting from predominantly manufacturing oriented to being service oriented in terms of GDP contribution. Thus any study of innovation must take note of the uniqueness of services from manufacturing. As a result in the next sections of this research, focus is to study the research done in the service sector of the bottom of the pyramid markets to explore the uniqueness of this area and find any Gaps to carry out detailed analysis.

5. A Review on Bottom of the Pyramid Market

5.1 Introduction

The United Nations established its global commitment with ‘Millennium Declaration’, the foremost goal of which is to eliminate poverty and hunger. The world bank measures consumption poverty using data drawn from household surveys and estimated that in 2005 there were 2.6 billion people consuming less than \$2 a day (see Figure 5.1).

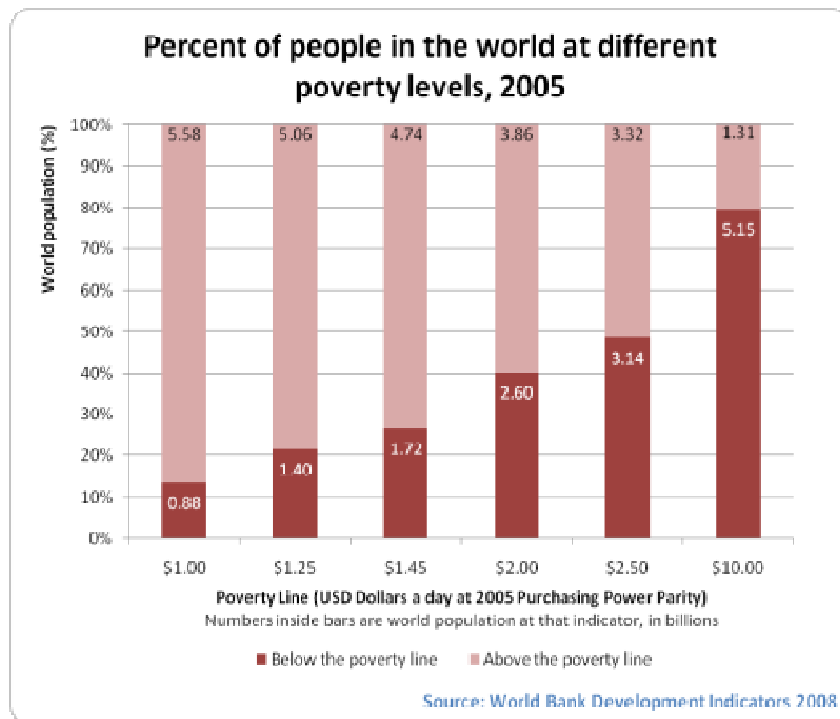


Figure 5.1: People in the World at Different Poverty Levels (World Bank website)

According to another estimate the number of people in the world who earn less than US\$2,000 per annum is around 4 billion, this market is aptly termed as Bottom of the Pyramid (BOP) by Prahalad and Hammond (2002). At the peak of the pyramid (economic) are 75-100 million wealthy tier 1 consumers (see Figure 5.2, Prahalad and Hammond, 2002). This group is composed of middle to upper income people in developed countries and few very rich from the developing world. In the middle are, tier 2 and 3 poor customers in the developed countries and the middle class of the developing ones. The tier 4 is the last almost 4 billion of the world's population lying at the bottom of the pyramid whose annual income is less than 2,000 US\$ based on purchasing power parity.

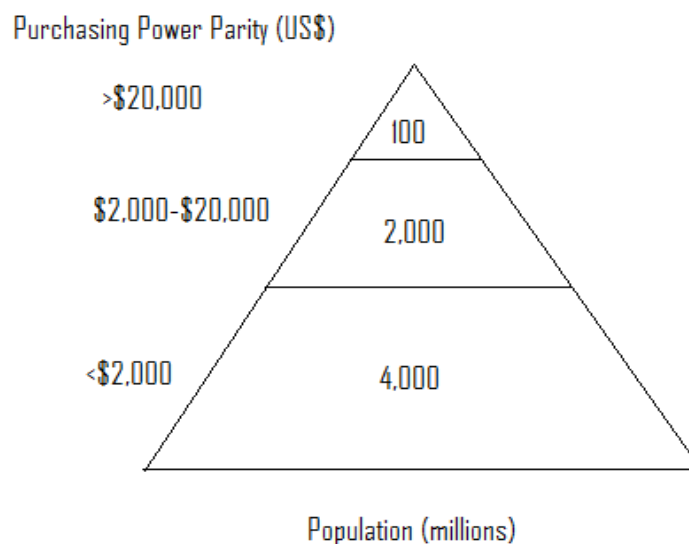


Figure 5.2: The World Economic Pyramid (from Prahalad and Hammond, 2002)

Thus with almost two third of the world's population lying at the base of the economics pyramid, the opportunities associated with low income markets are becoming gradually more obvious to both researchers and organizations (London and Hart, 2004). In most of the cases, these low income markets are serviced by large/hidden informal economies that are not recorded in official

GNP figures. According to de Soto (2000), “Informal sector includes more than US\$9 trillion in hidden (unregistered) assets, an amount nearly equivalent to the total value of all the companies listed on the 20 most developed countries’ main stock exchanges”. This informal economic system includes small enterprises, barter exchanges, sustainable livelihoods activities, and unregistered assets (Chamber, 1997). However, most of the consumers at the BOP are poorly serviced by low quality vendors or exploited by predatory suppliers and intermediaries, suggesting the possibility of both profits and consumer surplus (Prahalad and Hammond, 2002). Undeniably, serving the markets at the BOP with almost 4 billion people is both a tremendous opportunity and a unique challenge (London and Hart, 2004).

The question is why vast majority of corporations have not seized this opportunity at the bottom of the economic pyramid. There are many explanations including corruption, under developed infrastructure, poor distribution channels, illiteracy etc, hence most of the organizations have totally ignored the BOP markets and have instead gone for low hanging fruits at the middle and upper classes (Anderson and Billou, 2007). However, there are certain organizations who have taken the difficulties associated with BOP markets as challenges and in the process have developed innovative propositions. Literature in the area identifies four main challenges associated with BOP markets: affordability, availability, acceptability and awareness (Anderson and Billou, 2007).

The hypothesis that innovation will bring about improvements in performance such as reducing costs or improving quality or flexibility have been studied in the literature (Klomp and Van Leeuwen, 2001). The expected outcome of the innovation process is higher competitiveness and

improvement in performance (Sintes et al, 2007). Hence, given the stringent challenges associated with BOP markets organizations have to be innovative to both reduce costs to make it affordable for the consumers, and at the same time improve the performance of the whole system to be able to compete against the local informal business sector.

In the following section literature review is done and examples are given to show response of successful organizations to unique challenges of BOP market.

5.2 Service Innovation in BOP Market

Anderson and Billou (2007) tried to explain innovation at the bottom of the pyramid by what they termed as “4 A” approach. The authors argue, using case studies that at the heart of the successful innovations in the BOP markets is an approach that focuses on delivering; availability, affordability, acceptability and awareness. BOP market is not a low hanging fruit. It is a market with potential and achieving that potential will require effort and innovation (Seelos and Mair, 2007). The successful service organizations in the BOP market have been innovating in their business model, offering, processes and marketing. According to Prahalad and Hart (2002), innovation in one area leverages innovation in others.

In the following paragraphs using extensive literature review, factors resulting in successful service innovations in the BOP market have been discussed in detail and an attempt is made to categorize these innovation factors into four broad categories along the whole value chain of a company i.e., business model, processes, offerings and marketing.

5.2.1 Business Model

An organization's business model explains how it intends to make money and what kind of alliances it will make for the mutual benefits. Serving the BOP sector profitably requires a different business model (Chesbrough et al, 2006). According to Prahalad and Hammond (2002), doing business with world's 4 billion people will require innovation not only in technology but also in the business models.

5.2.1.1 Establish Alliances

In pursuing low-income markets organizations must make adjustments for an environment where social contacts dominate (de Soto, 2000). Organizations facing challenging environments usually need to turn to partner organizations for missing resources and expertise (Eisenhardt et al, 1996). At the base of the pyramid organizations must develop relationships that enable them to understand the social context of an environment that is local, diverse, dynamic, complex and unpredictable (Hart and Sharma, 2004; Dawar and Chattopadhyay, 2002). Through their knowledge about the needs of people, under the conditions of poverty, and the culture of the poor the partner organizations can help result in development and increased opportunities (Gardetti, 2005). Cooperation with local businesses, government agencies, NGO's and cooperatives can increase the likelihood of success in BOP markets (Nielson et al, 2008). Those organizations have been able to innovate in BOP markets that established alliances with non-traditional partners. These partners include non-profit organizations (NGOs), community groups and even village level governments (London and Hart, 2004). Prahalad and Hammond (2002), extend the list of non-traditional partners to include local entrepreneurs, business consortia and women. The local nontraditional partners can provide awareness on the actual needs/desires of the base of

pyramid customers and also help educate consumers on appropriate use and benefits of the services. The non-traditional partners help by providing information on the local culture, local legitimacy and access to needed resources (Rondinelli and London, 2003).

- *Example (Prahalad, 2005):* ICICI bank's (India), by establishing local alliances, came up with innovative indirect channels partnership model. ICICI bank, the second largest banking institution in India moved to retail side of banking in 1997. The indirect channels partnership model utilizes the current infrastructure and relationship that micro-finance institutions (MFIs) and non-governmental organizations (NGOs) have in place to provide banking facilities to rural India. Basically, using these alliances ICICI was able to innovate and could access market through multiple channels already in place instead of going for traditional approach of building branches as the primary source of access to consumers. For example ICICI formed partnership with rural marketers like ITC and EID Parry to access farmers through their rural kiosk networks. In return the partner organizations get the backing of a large bank to help expand their Kiosk network thus building more capacity into the system. ICICI have now around 9.8 million customer accounts.

5.2.2 Offering

Offering relates to the kind of services the organization provides and how it intends to provide value to customer and consumers. The literature shows that while coming up with service offerings for the BOP market, following factors are important. They include:

5.2.2.1 Focus on Price Quality Relationship

The literature and examples from the industry show that one of the most important factors for coming up with innovative service offerings for BOP markets is new understanding of price quality relationship of the offering (Prahalad, 2005; Prahalad and Hart, 2002). According to Prahalad and Hammond (2002), serving BOP market requires a combination of low cost, good quality, sustainability and profitability. Hence given that consumers have low disposable income, the prices have to be reduced dramatically for the offerings to be viable for the BOP market while keeping an acceptable level of quality. There are eight dimensions of quality mentioned in the literature i.e., performance, reliability, conformance, durability, serviceability, aesthetics and perceived quality (Garvin, 1987). Some of the additions into this can be availability, timeliness and convenience. According to Karnani (2007), “The customer takes into account all these dimensions and arrives at a subjective judgment of the overall quality of service and is by definition willing to pay a higher price for a service with higher quality- this is called cost-quality trade-off.

- *Example:* Shared access model follows the cost-quality trade-off discussed above and has been used as a business model for the BOP market to share or rent services. Shared access model refers to scenarios where a single computer is used by more than one person. Shared access computers provide service to multiple independent users in places such village kiosks, village knowledge centers etc. ITC e-Chopals in India are basically information centers linked to internet. These information centers connected the subsistence farmers with large firms, current agricultural research and global markets using shared access model (Prahalad, 2005).

5.2.2.2 Customized Solutions

The importance of customized solutions catering to the needs of BOP markets cannot be emphasized enough (Prahalad, 2005). According to Matthing et al (2004), by adopting a pro-active approach service firms can facilitate learning and reduce the risk of failure of service innovation. Organizations can develop a native capability by learning about the needs, lifestyles, and cultures of the people at the BOP and by incorporating their needs (Hart, 2005; London and Hart, 2004).

- *Example:* Electra a retailer in Mexico caters to BOP customers and has initiated fingerprint recognition as a basis for operating the ATMs in its network of stores as a result the customers do not have to remember their pin codes.
- *Example (Sivapragasam et al, 2011):* Philippines and Thailand have working mobile money transfer services in place whereby according to a study 40 to 60 % (sample) of migrant workers use mobile technology to transfer money to their families back home.
- *mKRISHI:* An agro advisory innovation produced by Tata Consultancy services. It is used by farmers to send farming questions through mobile in their regional language to specialists and get their advise. It also helps un-educated farmers, with the facility to send queries and receive advice as ‘voice SMS.’ Thus mKrishi helps reduce the gap between farmers and their potential partners such as agriculture specialists, markets, government officials, banks so on and so forth.

5.2.3 Process

The processes relate to how the organization creates and adds value to its offerings.

5.2.3.1 Simplification of Work Design

The skill and education levels in the BOP market are much lower as compared to the developed markets. Thus focusing on de-skilling of the service offering will result in better service innovation performance in the BOP markets (Prahalad, 2005).

- *Example (Prahalad, 2005):* Voxiva, a start-up in Peru came up with an innovative disease diagnostic system to monitor disease patterns. Health workers in remote areas can contact health officials in Lima (Peru) using landlines or internet using a PC. The health workers in far-flung area are given a card with pictures of the progress of the disease e.g. small pox (symptoms of small pox over a period of time were captured in photographs). The untrained health workers could compare the lesion on the patient to the pictures and decide on the severity of the disease. A simple telephone call to the health authorities in Lima is then made. The location and severity of the case (mentioning the number of the picture on the card) is then communicated to them. The card is a way of capturing the expert knowledge and identifying the stages of severity. The simplified diagnostic process does not require the field health officials to be highly trained or have access to expansive communication networks. Voxiva de-skilled the diagnostic and surveillance in two ways; Minimizing the need of an expansive technology for communication and diagnostics of the problem requiring low skill levels.

5.2.3.2 Process Design must Complement Local Infrastructure

The closer the innovation efforts are to the end user, the more likely they are to respond to user needs (MacCormack and Herman, 1999; von Hippel, 2001). The process design of the service must overcome the problems associated with lack of infrastructure in most BOP markets. According to Bender et al (2000), without effective process innovation, an organization will stagnate and lose its competitive edge. The important factor for innovation is to redefine the process in such a way that it would complement the local infrastructure (Prahalad, 2005).

- *Example (Prahalad, 2005):* Amul, the largest dairy in India has a decentralized milk collection system, yet they have been able to come up with an innovative process by which collection is both efficient and dependable. Amul has established collection centers in the villages where the villagers fetch their buffalo twice a day. The milk is measured for volume and fat content and the villager is paid every day. This milk is then transferred to a centralized and technologically advanced processing facility in refrigerated vans. In this way Amul complements the local village infrastructure and connects the farmers to national and global dairy markets. Table 5.1 shows Amul India's process (from Prahalad, 2005).

Table 5.1: *Process at Amul India (Prahalad, 2005)*

Origination	Collection of milk from individual farms from over 50,000 villages. Guarantees quality by inspection at point of origination
Transport to central facilities	Milk transported to processing facilities by refrigerated vans
Processing facility	High tech processing facilities convert raw milk for consumption
Post processing	Marketing of products

5.2.4 Market

This is related to how the organization gets to the market and how it communicates its offerings.

5.2.4.1 Service Size to Match Income Pattern

BOP consumers have low disposable incomes and service offerings would need to match the cash flows of customers who frequently meet their income on a daily rather than weekly or monthly basis (Anderson and Billou, 2007). According to Andrea et al (2004), low income consumers prefer offerings in small sizes because of their income and space constraints.

- *Example (Anderson and Billou, 2007):* SMART communications came up with an innovative pre-paid pricing plan for its customers in Philippines that offered air-time in sachet like packages, with prices that were broken into much smaller denominations than offered before (US\$0.54). The new pricing package was an enormous sensation and within ten months these low denomination packages were generating 3 million daily top-ups with revenues of US\$ 2 million a day.
- *Example (Rao and Sangeet, 2011):* According to their survey in Kerala and Andhara states in India majority of the BOP customers interviewed were found using prepaid service (85.71%), rather than postpaid service. Most of the Airtel prepaid customers used Airtel Lifetime Scheme as the top-up which starts from as low as USD 1.127 was found to be most attractive feature of the service for the customer. Although, the outgoing call rates are actually a bit high in this scheme as compared to other schemes. However, the BOP consumers rarely make outgoing calls, they primarily use mobile for receiving customer calls. The Airtel service was preferred by the consumers because they offered

'Group Service', i.e. the calls were free to a group of predetermined Airtel mobile numbers, highly economical for doing business.

5.2.4.2 Education of the Consumer

Awareness is one of the four factors which are at the heart of successful product or service innovations in the BOP market (Anderson and Billou, 2007). Large numbers of consumers in the BOP market have no access to conventional communications media e.g., in India only 41% of the rural households have access to TV making awareness another challenge for organizations operating in BOP markets. Innovation in BOP markets requires significant investments in educating the customer on the appropriate use and the benefits of specific services (Prahalad, 2005).

- *Example:* Aravind Eye Hospital in India regularly conducts well publicized eye camps in the remote regions of the country to make people aware the importance of eye health care and access patients who need surgery.

5.2.5 Top Management Commitment

All the service innovation factors for the BOP markets discussed above require strong top management commitment to innovation initiatives maybe it be Aravind Eye Hospital. In order to successfully innovate, Dr V. and other top management at the Aravind Eye Hospital have adopted the management style of leading by doing (Rangan, 1994). Upper management commitment helps in supporting service innovation process in an organization (De Jong and Vermeulen, 2003; Heracleous et al, 2005, Price et al, 2001, Osborne and Flynn, 1997). Top management in any organization is responsible for ensuring that resources are in place to support

innovation initiatives. De Jong and Vermeulen (2003) points out that money is the major source of driving innovation. Any service innovation initiative requires upper management support to ensure sufficient resource allocation and to keep things on track. For successful service innovation, an organization needs to muster up all its capabilities or resources to sustain competitive edge.

According to Walker (2003), responsible management is aware of issues both inside and outside the organization and thus recognizes the need for innovation. By setting personal examples management shows strong commitment to innovation cause (Day, 1999a). Thus, the importance of adequate time and resources for any innovation initiative cannot be emphasized enough

5.3 Conclusion

Considering the cultural and economic differences between the developed and developing countries, the conclusions from previous research in developed countries cannot be generalized to developing countries (Sofie Van, et al 2008). This study contributes to filling the void of lack of research on service innovation in the BOP market. Most of the literature dealing with bottom of the pyramid market to date- has focused on the contributions that business can make to ameliorate the plight of the poorest of the poor (Wood et al, 2008). Apart from a few researchers not many have touched on the innovation in services area. However, in the last few years some research on service innovations at the BOP have started getting published in the literature.

The literature analysis indicates that there is a great opportunity for further work in the field of service innovation in the BOP market. The following chapters will focus on developing a

framework to overcome the limited work in understanding service innovation field in the bottom of the economic pyramid.

6. Development of Framework

6.1 Research Objective

The literature on the bottom of the pyramid (BOP) market mainly talks about its enormous untapped potential. BOP markets are not low ‘hanging-fruits’ and hence it is difficult to be successful there. The researchers argue that BOP market is unique to the market in the developed countries because of reasons including corruption, under developed infrastructure, poor distribution channels, illiteracy etc.

Though most of the literature discusses about these challenges associated with BOP markets but it does not go into the details of how to overcome them. In addition the literature still lacks in terms of providing a framework for service innovation in the BOP markets. The focus of this research is to go into the critical details about these challenges and try to overcome them with an approach so as to facilitate wider success of service innovation in the BOP markets. The major objective of this research is to develop a framework for service innovation in the BOP markets.

6.2 Research Questions

As discussed in earlier chapters, much of the literature either focuses either on service innovation or on the BOP markets. Some of the observations made from the literature review are;

- Service innovation area is well established and well published
- Most of the research in the BOP markets is focused on highlighting the commercial viability and uniqueness of BOP markets

- Literature identifies four innovation challenges associated with BOP markets: affordability, availability, acceptability and awareness
- Literature review shows that service organizations who have been able to consistently come up with service innovations tend to focus on certain factors to counter the above challenges

There are various unanswered questions as far as the research on the service innovation in BOP markets is concerned. Answer to those questions will help in developing a framework for service innovation in BOP markets. The questions are

Q.1. What is the current status of innovation in the service organizations in BOP markets?

Q.2. How the proposed framework may facilitate or inhibit service innovation in the BOP markets?

The focus of this research work is to answer these questions. A theoretical framework specific to service innovation in the BOP markets is developed and will be validated through questionnaire survey involving different types of service sectors.

6.3 Case: LRBT Eye Hospital, Lahore

6.3.1 Case Background

This case is about LRBT Hospital, Lahore (Pakistan) that was established in 1987. It is considered to be a center of excellence in eye care in the country. The hospital was given the status of a post-graduate training center in eye in 1996.

The hospital has facilities to provide wide ranging eye surgeries for the patients including cataracts (opacity or cloudiness in the natural lens of the eye). On average the total number of cataract surgeries performed at the hospital are 10,204 per annum. This is roughly 5 % of the total number of cataract surgeries done in Pakistan. They have 33 doctors that is; $10,204/33 = 309$ cataract operations per doctor are performed at the hospital whereas the national average is about 70 cataracts per doctor. This shows that the hospital is 4 times more productive in terms of surgeries per doctor. The hospital has come up with various innovations to achieve this phenomenal productivity while maintaining excellent quality standards.

6.3.2 Strengths of the LRBT Hospital

Since its inception the hospital has been able to come up with various innovations. In this section the reasons behind these successes are deliberated in the light of the literature review done in the previous chapter.

6.3.2.1 Business Model

Establish Alliances: LRBT hospital established alliance with University of Engineering and Technology, Lahore and a local NGO to establish IT kiosks in the villages and towns near the city. The IT kiosks have web cameras that allow patients to take pictures of their eyes and send them as via email along with the voice description of the problem to the doctors in the hospital. The doctors, designated to take care of these emails, using the photograph and the description give necessary recommendation to the patient.

6.3.2.1 Offering

Focus on Price Quality Relationship: The doctor to patient ratio at the hospital is extremely low as compared to a hospital in any developed country. In order to reduce costs per patient (US\$3 per patient) and yet provide quality treatment to maximum number of incoming patients, the hospital surgery room is designed to work as a “focused factory”. It is made sure that doctors only focus on conducting surgeries while patient preparation is the sole responsibility of trained paramedical staff unlike many other hospitals. Inside the operation theatre the patient flow configuration is focused on efficiency. The steps involved were,

- 1- Patients waiting to be readied in the waiting room
- 2- Patients getting readied in the waiting room
- 3- Patients being operated upon

As soon as patients inside the operation theater are operated, the next lot of 5 patients (ready for surgery) is brought in the operation theater for surgery. While those waiting to be readied are prepared for surgery by nurses and the next lot of patients is brought to the waiting room to wait for their turn to be prepared for surgery. As a result of these steps and skill of the doctors, upto 80 quality surgeries are performed daily at LRBT hospital with the cost of only US\$3 per patient (see Figure 6.1 for the layout of the operation theater).

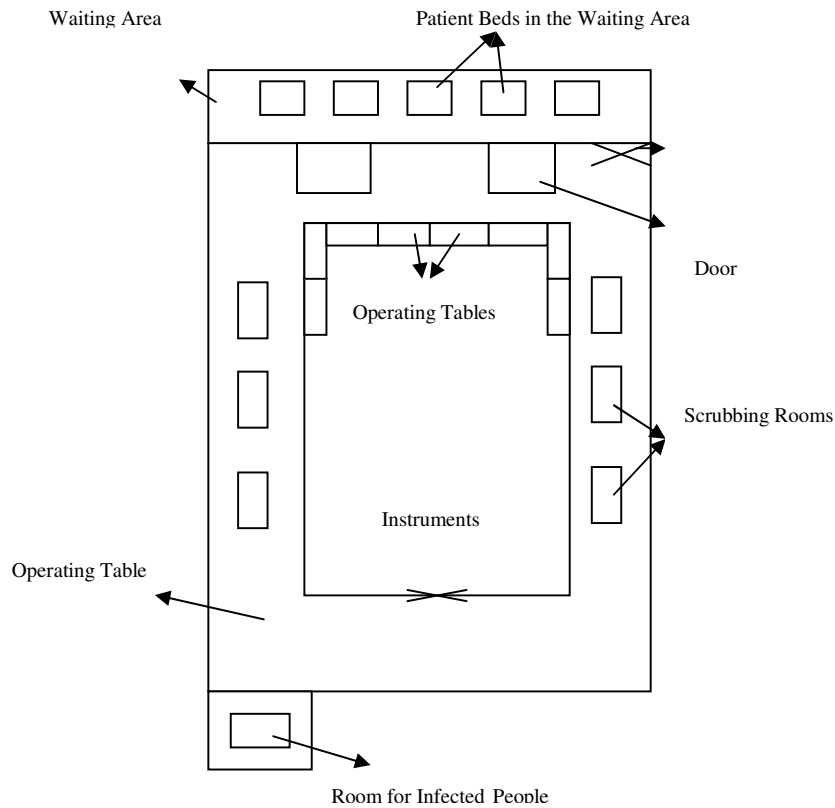


Figure 6.1: Layout of the Operation Theater (Asad and Rana, 2006)

6.3.3.2 Process

Simplified Work Design: Most of the hospital patients are old and uneducated. The hospital management has got the entry doors to different hospital sections painted in different colors to facilitate their movement inside the hospital thus making sure that the staff can focus on its core job. In this way unnecessary time wastage and mistakes are avoided. The doors had different numbers as well.

6.3.3.3 Marketing

Education of the Consumer: The hospital management conducts well publicized eye camps in the remote regions of the country. These eye camps have two major purposes to make people

realize about the importance of eye care and secondly to access the patients who are in the need of surgery.

6.4 Conclusions

The above case highlights the important factors considered by a service organization (hospital) to come up with innovations in the BOP market. However, the case has limitation as the analysis is based on a teaching case study (Asad and Rana, 2006) focusing on the operational strength of the LRBT hospital. Overall this case study helped in providing a direction for future development of the framework.

6.5 Proposed Framework

The major focus of this research is to facilitate service innovations in the BOP markets. The proposed framework is developed on the basis of extensive literature review (see Figure 6.3). Given management commitment the framework incorporates different factors that organizations should consider to come up with service innovations in their business model, service offering, processes and marketing.

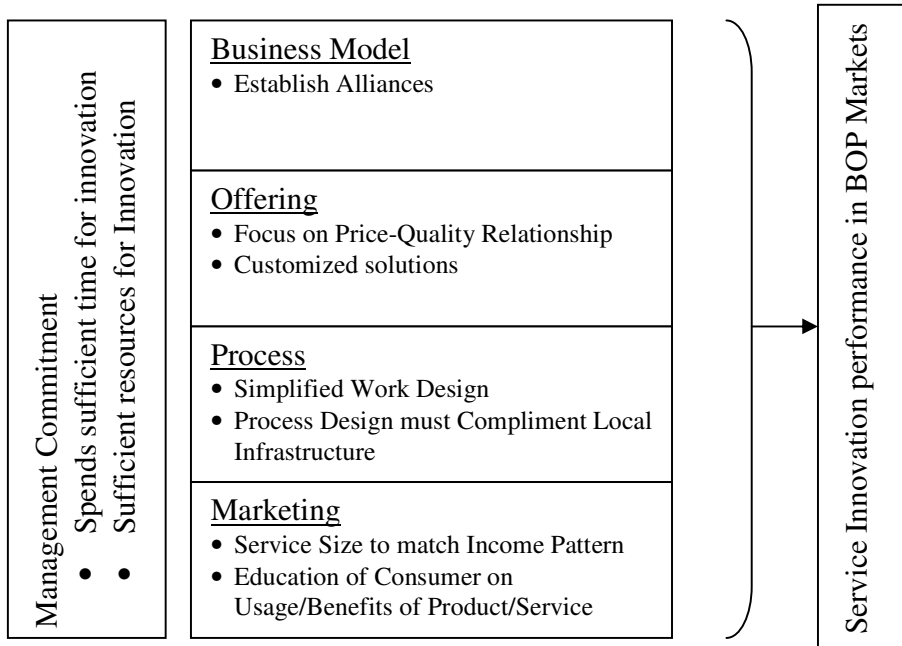


Figure 6.2: Framework - Service Innovation Performance in the BOP Market

The proposed framework is developed tentatively, as it includes factors facilitating service innovation performance based on literature review.

7. Methodology of the Research

7.1 Introduction

Primarily, this chapter explains the methodology used to accomplish the research objectives. This research mainly focuses on “service innovation in BOP markets” and the key output of this research is to develop a “framework of service innovation in the BOP markets”.

In this chapter, first the question of choosing right research methodology is discussed followed by a critique on quantitative and qualitative research methods. This is followed by an explanation of the research methodology chosen for this research. Next the structure of the questionnaire, questionnaire design, data collection procedure and targeted population are elaborated. Finally all the measures used in this questionnaire will be described.

7.2 Choosing a Research Method

A thorough examination of possible methods and methodologies available for examination of the research question is imperative for a quality research (Blismas and Dainty, 2003). Goulding (2002) acknowledges that choosing a research methodology is not an easy task. It is time-consuming, laborious and difficult. However, it is personal and reflective process. It also requires evaluation of oneself in terms of convictions, beliefs and interests. Goulding (2002) views research as a part of an integrated process involving researchers, their beliefs and experiences, the cooperation of various stake holders of the research, and suitability and implementation of a

chosen methodology which results in an answer that is a single perspective and not an absolute explanation of the problem.

To choose a research methodology, Bryman (2007) elaborates the importance of the research question. He explains that the research question is a crucial early step that provides a point of departure for finding the solution to a particular problem. Research question helps to link the researcher's knowledge of domain to the kinds of data that will be collected to sort the solution.

Bryman (2007) explains that the nature of the research question guides decisions about research design and methods that are supposed to be made in order to answer research questions. He notes that the textbook account of the research process usually guides the researchers to define the research question and then choose the research methods that suit the research question. However, in reality, Bryman (2007) think that it does not always happen this way. Findings of Bryman's (2007) interviews with researchers reveal that other reasons such as disciplinary requirements—what should pass as acceptable knowledge, policy issues—expectations concerning the kind of knowledge they require or policy, and funding expectations of funding bodies also play a role in choosing the research methodology.

Yet another possibility is personal skills of the researcher to conduct a particular kind of research. However, it is essential that the researcher substantiate the method chosen and provide a justification for the choice made for a particular research methodology (Blismas and Dainty, 2003). Moreover, there are a number of issues which play an important role in the choice of research methodology. Buchanan and Bryman (2007) highlight many of such issues such as:

aims of research, epistemological concerns, and norms of practice, are thus also influenced by organizational, historical, political, ethical, evidential, and personal factors. Trauth (2001) also asserts that the factors that influence the choice of research methods include: the nature of research problem, researcher's theoretical lens, and the degree of uncertainty surrounding the phenomenon.

7.3 Research Methodology

Quantitative research methods are characterized by the assumption that human behavior can be explained by social facts. Such methods employ the deductive logic of the natural sciences (Horna, 1994). Quantitative methods focus on objectivity and attempt to capture the reality. On the other hand, Jones (1997) observes that the qualitative methodologies are strong in those areas that have been identified as potential weaknesses within the quantitative approach. However, qualitative research is not without shortcomings. There have been serious criticisms on qualitative approach as a research methodology. For example, it has been criticized as exploratory, filled with conjecture, unscientific, and a distortion of the canons of 'good' science (Goulding, 2002). Table 7.1 shows how quantitative research differs or is similar to the qualitative approach.

Table 7.1: Characteristics of Qualitative and Quantitative Methods (Masters et al,2006)

Characteristics	Qualitative Research	Quantitative Research
Goal/purpose	Understanding/meaning from the participation	Explanation/prediction from data
Theory	Generation	Testing
Sample	Participants	Subjects
Researcher/sample relationship	Direct involvement	External involvement
Instrument	Research is “tool”	Established, pre-tested tool
Findings	Narrative/inclusive for depth	Data/exclusive
Analysis	Meaning from findings	Numerical interpretation and Significance
Significance	Applicable only to the sample	May be generalizable to the Population

According to Meredith (1998), there are pros and cons of each of these approaches. The benefits of survey include precision, reliability, standard procedures and testability where as the disadvantages include sampling difficulties, trivial data, model-limited, low explained variance, variable restrictions and thin results. On the other hand the pros of case study method include relevance, understanding and exploratory depth and cons are time, assess, triangulation, lack of controls and unfamiliarity of procedures.

Both quantitative (for example questionnaire survey) and qualitative (such as case study) have been employed by previous researchers. The proposed framework and its constructs are mainly developed from a comprehensive literature review of service innovation and BOP markets. In the light of the above discussion and time constraints the most suitable research methodology is a

quantitative data collection. Thus, questionnaire survey has been selected as the research methodology.

7.4 Questionnaire Design

7.4.1 Structure

The aim of the questionnaire is to examine the impact of the discussed framework on service organizations in the bottom of the pyramid markets. The questionnaire survey consists of essentially 5 sections (refer to Appendix A). Section A is designed to obtain general information from the respondents i.e., the area of the service organization (hospitality, banking, consultancy, etc.). In the first section the respondents were probed whether the organization was involved in innovation activities. Another question was added to ascertain whether the organizations were operating in the low income markets (i.e., BOP markets with income less than 2000 US\$ per annum). If the answer was “yes” to both the questions respondents were asked to proceed with the survey, otherwise they were thanked for their cooperation and asked to fill Section E (optional) with information like name, position, organization name, contact address etc. In order to encourage participation in the survey and to share the results with the respondents they could tick a small box and ask for the summary results. Section B of the survey is to establish the service innovation performance of the organizations using a multi dimensional measure. The measure includes ten different performance measures ranging from sales, market share, profitability etc which are financial in nature to measures such as attracting new customers, customer loyalty etc which are customer centric in nature. The success of innovation activities was asked to be judged on a 1 – 5 Likert scale on a continuum of “totally unsuccessful” to “totally “successful” for each of the ten performance measures used for the study. In sections C, where applicable the

respondents are asked to investigate how frequently various innovation activities like establishing alliances, improving quality, reducing costs, simplifying delivery process were used by the organizations etc on a 1 (Never) to 5 (frequently) . This section consisted of various attitudinal statements related to the developed framework discussed in the earlier chapters. In section D an attempt is made to explore the reasons behind lack of success of innovation initiatives in the organizations using two different closed ended questions.

In order to brief the respondents about the rationale of the study and to emphasize its significance, an invitation letter with a short explanation of the objectives of the study was added.

7.4.2 Content, Wording and Layout

In the eyes of the researchers closed ended questions are deemed to get a higher response rate (de Vaus, 1999). Studies have shown that for research focusing on a specific issue rather than general feelings close-ended questions are more suited. This in order to make the questionnaire more useful, simple and less time consuming for the respondents, all the questions in the survey were of close-ended nature.

The questionnaire content, wordings and layout were designed as per the suggested guidelines (de Vaus, 1999). The content was chosen to investigate the common activities undertaken by the organizations while coming up with improved or new service in the BOP markets. In order to enhance the accuracy and consistency of the data, respondents were not asked any individual information as the personal information was kept voluntary. The wording of the questionnaire was kept simple and succinct in order to reduce the chances of confusion. Also efforts were

made to avoid leading questions. The layout of the questionnaire was designed to facilitate participation and thus help raise sample size.

7.5 Measures

The focus of the research is to find the success measures for new/improved services in the BOP markets. There are four independent variables and one dependent variable.

7.5.1 Dependent Variable

7.5.1.1 Service Innovation Performance

For this study the respondents were requested to score the service innovation performance on a multi dimensional measure. This measure incorporated the metrics ranging from sales, profitability, market share etc (financial) to customers, customer loyalty etc (customer centric). Extensive literature review of similar studies conducted in service areas was done to come up with the performance dimensions (Cooper and Klienschmidt, 1994; Brentani, 2000 and Ottenbacher and Gnoth, 2005). Following were the ten performance measures chosen; exceeding the total sales objectives, exceeding the market share objectives, being profitable for the company, having a strong long-term performance, improving the loyalty of the existing customers, having positive impact on company's image, enhancing the profitability of other services/products of the company, having positive impact for company to open up new markets, having significant impact for the company in attracting new customers, giving the company important competitive advantage. As previously discussed, the success of innovation activities was asked to be judged on a 1 – 5 Likert scale on a continuum of “totally unsuccessful” to “totally “successful” for each of the ten performance measure used for the study. The overall

service innovation performance will be calculated based on the aggregate mean score of the ten chosen performance indicators.

7.5.2 Independent Variables

As shown from sections on framework development, for this study the independent variables are the different factors that organizations need to take care of along the whole value chain (business model, processes, offerings and marketing) that may affect the service innovation performance in the BOP markets.

7.5.2.1 Business Model: Business model clarifies how the organization aims to make money and what kind of alliances it will make for the mutual benefits. According to Chesbrough et al (2006), serving the BOP sector profitably requires a different business model. Hart and Sharma (2004) and Dawar and Chattopadhyay (2002) suggested that the base of the pyramid organizations must establish associations that would allow them to appreciate the social context of a setting that is local, diverse, dynamic, complex and unpredictable. According to Nielson et al (2008), collaboration with local businesses, government agencies, NGO's and cooperatives can enhance the likelihood of success in BOP markets. Accordingly, the alliances aspect was introduced using Questions 1 and 2 in section B.

7.5.2.2 Offering: Offering relates to the core competency of the organization and how it aims to provide value to its customers. While coming up with service offerings for the BOP market the important factors are price quality/performance relationship, deskillling of word design and customized solutions. Series of statements in Questions 3 and 4 were used to help analyze the relationship between these factors and service innovation performance in the BOP markets.

7.5.2.3 Process: As discussed in earlier chapters, processes relate to how the organization generates and adds value to its offerings. The first important factor identified through literature is de-skilling of work design (Question 3). The second factor is that process design of the service must prevail over the problems associated with lack of infrastructure in most BOP markets. According to Prahalad (2005), the processes must be such that it would complement the local infrastructure for better service innovation performance in the BOP markets (Questions 5a and 5b).

7.5.2.4 Market: Market is related to how the organization gets its offerings to the market and how it makes sure that the offerings are communicated to the potential customers. The two important factors are “service size to match income pattern” and “education of the customer”. Questions 6, 7a, 7b and 7c are used to help investigate the relationship between the mentioned factors and service innovation performance in the BOP markets.

7.5.2.5 Management Commitment: The fifth factor investigated is the level of management commitment to innovation initiatives and service innovation performance in the BOP markets. Series of statements in Question 8 were used to examine the issue.

7.6 Targeted Population

The targeted population was selected from two main databases i.e., ORBIS (un-listed companies) and OSIRIS (listed companies) using NUS library resources. These sources included general information about the companies such as their addresses, contact information, nature of their businesses and yearly organizational reports. The sample was selected from companies in the

operating in the following areas i.e., transport, utilities, consultancy, banking, insurance, hospitality, healthcare, employment agencies, IT etc. A total of 14,272 service based companies were selected from OSIRIS and ORBIS databases. For the purpose of the study we focused on getting responses from the service quality managers, operations managers, and staffs that are directly involved in the service innovation process.

7.7 Survey Implementation

Using the data from the targeted sample, the purpose of the study is to investigate the factors that can impact the success of service innovation in the bottom of the pyramid markets. After the selection of the email list, the survey was sent to each of the potential respondents with an invitation explaining the objectives of the research study. There were no incentives for the respondents to fill in the survey. However, they could ask for summary results if they were desired.

7.8 Discussion

Parahalad (2005), through his work, succeeded in planting the perception that customers in low income markets could be profitable. Many organizational success stories related to BOP markets have been reported in the literature (Pralhalad, 2005; Anderson and Billou, 2007; Pitta et al, 2008; Wood et al, 2008; London and Hart, 2004). Also there is enough evidence in the literature to conclude that innovations result in competitive advantage for an organization over its rivals and thus making it very successful in the market place (Levesque et al, 2007). The literature shows that some of the service organizations operating in BOP markets have been able to consistently innovate.

Given the cultural and economic disparity between developed and developing countries, the results from earlier research on service innovation in developed countries cannot be generalized to developing countries (Sofie Van and Hens, 2008). The literature still lacks a unified theory on the phenomenon of service innovations in the BOP markets. Hence, the focus of present research is to identify factors that help improve service innovation performance in the BOP markets.

The initial case study helped to form the foundation for the proposed framework. The analysis and results from the questionnaire survey will help in improving and validating the framework.

8. Results and Discussion

8.1 Introduction

This chapter spotlights on the preliminary results and findings of the survey. As mentioned in the methodology chapter, the survey is done in organizations all over the world. The descriptive of the data is presented including a preliminary analysis of data such as response rate, industry classification, respondents' position, company size etc.

In the next chapter, the main objectives of the study will be explored by using a statistical approach to discover the factors affecting service innovation performance in the BOP markets.

8.2 Preliminary Analysis

In this section preliminary information on the data is provided using descriptive statistics methods with information like response rate, industry classification and respondents' position.

8.3 Number of Responses

Out of a total of 14,252 companies on the mailing list, there were a total of 416 returned surveys. A total of 6,005 surveys were undelivered because of change in their email addresses. Twenty five companies refused to participate in the study due to their prevalent policies.

The overall response rate out of total delivered surveys (8,247) was 5% which is acceptable for these kinds of surveys that utilize external mailing lists. Out of a total of 416 surveys returned, the completed surveys were 43, the rest of the organizations were either not operating in BOP markets or not involved innovation activities. Thus, the usable number of completed

questionnaires dropped to 43. The basic information on survey summarized in the form of Table 8.1 below.

Table 8.1: Summary of Questionnaire Distribution

Status	Number	Response rate (out of total delivered surveys)
Total Sent	14252	-
Undelivered	6005	-
Total Delivered	8247	-
Refused invitation	25	0.30%
Retuned (All)	416	5%
Returned (incomplete/not operating in BOP/ no innovation)	373	4.52%
Returned (usable)	43	0.52%

The lower response rate is attributed to the practical limitation of our mailing list. One limitation in the mailing list was the incapability of indicating the service organizations which were known to have implemented service innovation. Another limitation was the inaccuracy of the list due to the fact that many people had left those organizations and thus email ids were invalid. Though the database used was updated, none of that nevertheless a lot of respondent's e-mail addresses had changed. Given, the low response rate for web-based surveys, we feel our response rate is acceptable (Ettlie and Kubarek, 2008).

8.4 Job Title of Respondents

As described in the methodology section we used the company email addresses given on the ORBIS and OSIRIS databases to contact the organizations for inviting them to fill in the survey. Keeping in mind the objectives of our study, we had requested in the survey invitation email; "Our target sample is service quality managers, operations managers, and staffs that are directly

involved in the service innovation process”. A brief profile of the respondents is provided in Table 8.2.

Table 8.2: Job Titles of the Respondents

Job Title	Frequency	Percentage
Director/CEO/Chairman	5	11.63
Managers	8	18.60
Executive/Superintendent	2	4.65
Others	9	20.93
Not Specified	19	44.19

8.5 Service Area Classification

In order to generalize the results of the study, the survey instrument was sent to different kinds of service organizations for example healthcare, banking, insurance, leisure etc. Table 8.3 and Figure 8.1 provide a profile of the industries from which usable responses were received.

Table 8.3: Service Area Classification of the Respondent Organizations

Service Area	Frequency
Banking/Finance	4
Hospitality/Hotel	4
Information Technology	3
Transport	3
Consultancy	2
Healthcare	7
Utilities	2
Insurance	2
Telecommunication	1
Education	4
Others	11
Total	43

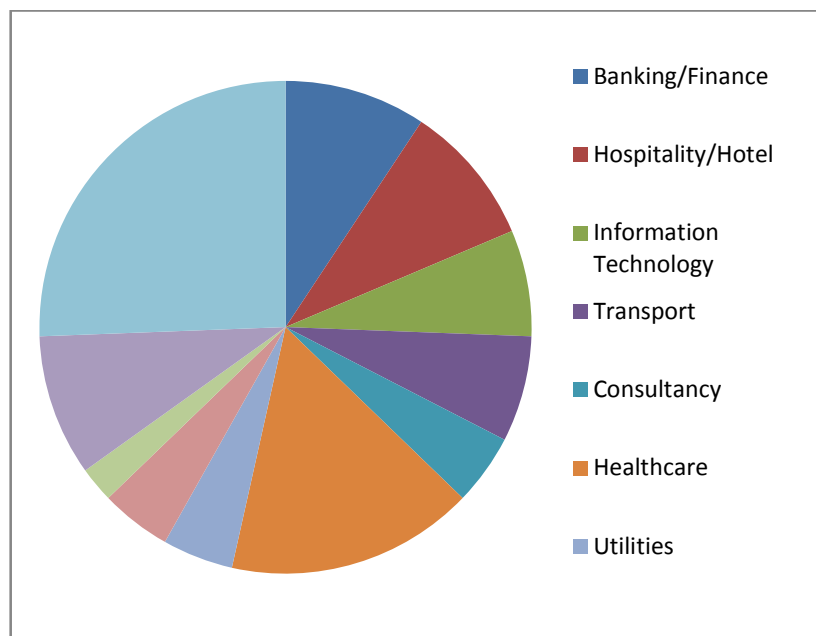


Figure 8.1: Service Area Classification

8.6 Company Size

In this section company size in terms of number of employees in the company is provided using a bar chart. We can see from Figure 8.2 that about 21% of the organizations are small/micro in size with less than 50 employees. About 52 % of the organization fall in the category of medium sized companies with 51 to 1000 employees. The rest of the organizations (26%) are large in size with more than 1000 employees.

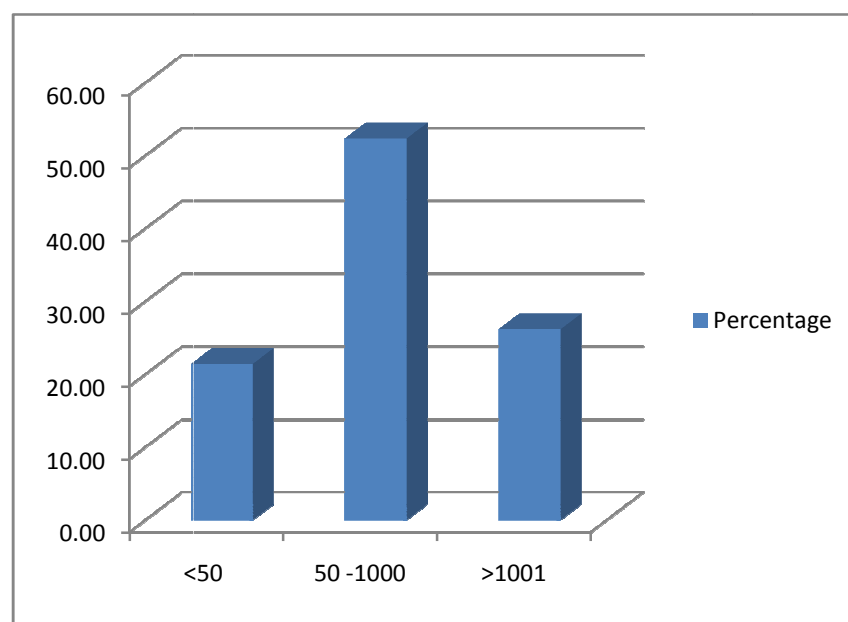


Figure 8.2: Company Size by Number of Employees

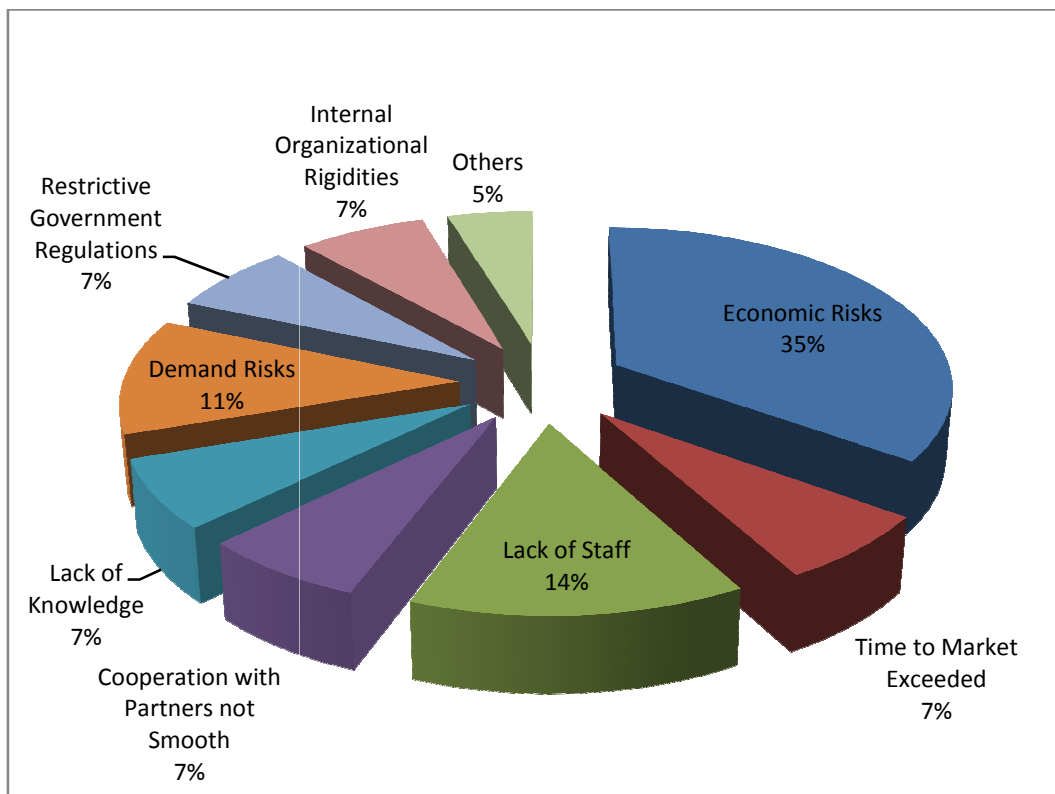
8.7 Innovation and Lack of Success

In this section the reasons behind lack of success of innovation initiatives is explored. In about 51% of the organizations, innovation initiatives got cancelled, delayed or stopped prematurely in the last 3 years. Table 8.4 shows the results;

Table 8.4: Cancellation of Innovation Initiatives

Cancellation, Delay or Stoppage of Innovation Initiatives in last 3 years	Number of Organizations
Yes	18
No	16

Figure 8.3 shows the reasons given by the organizations for cancellation, delay or stoppage of any of their innovation initiatives in last 3 years. For 35% of the organizations, economic risks associated with the innovation initiative were the reason. The second biggest reason stated was lack of staff (14% of the organizations) followed by demand risks (11%).

**Figure 8.3: Reasons behind Cancellation, Delay and Stoppage of Innovation Initiatives**

9. Research Findings

9.1 Testing of the Survey

9.1.1 Construct Reliability

Reliability refers to the degree of consistency or stability in measurement (Carmines and Zeller, 1979). It indicates the dependability, stability, predictability, consistency and accuracy of the data and measures the extent to which repeated trials will yield the same results (Kerlinger, 1986). In order to establish the reliability of a set of measures multiple methods can be used (Ahire and Devaraj, 2001). According to Froza (2002), four most common methods used in operations management research are; test-retest method, alternative form method, split-halves method and internal consistency method.

For this study, internal- consistency method has been operationalized to estimate the reliability. One of the most popular tests within the internal consistency is cronbach's coefficient α . It is one of the most widely used reliability indicator in operations management research (Froza, 2002). The threshold for reliability is not strict, however generally accepted range of α is 0.6 while value of 0.8 is very reliable (Nunnally, 1978). Table 9.1 shows the "C"ronbach's reliability coefficients for this study. All the reliability coefficients are greater than 0.6 therefore it is concluded all the proposed constructs are reliable.

Table 9.1: Cronbach's Alpha Reliability Coefficient

	Variable	Number of items	Cronbach's α
Offering			
	Price quality relationship	3	0.617
	Customized solutions	5	0.946
Process			
	Simplification of work design	2	0.694
	Process design must complement local infrastructure	2	0.702
Marketing			
	Service size to match income pattern	2	0.694
	Consumer education	2	0.611
Management Support			
	Management support	2	0.901

9.1.2 Construct Validity

According to Bagozzi et al., (1991), construct validity is the most complex and most critical to theory testing using survey approach. A measure has construct validity if the set of items constituting a measure of the survey correspond to the expected aspects of the conceptual framework. It is used to make certain that the measure does not include any items that are immaterial to the developed theoretical framework. "The empirical assessment of the construct validity basically focuses on the convergence between the measures of the same construct (convergent validity) and separation between the measures of different constructs (discriminant validity)" (Forza, 2002). However, it must be mentioned that convergent validity test is well

establish in operations management research whereas discriminant validity is not a common practice (Forza, 2002).

9.1.3 Convergent Validity

The convergent validity is also referred as unidimensionality that is the degree to which the measures correspond to a single concept (Ahire and Devaraj, 2001). Convergent validity can be assessed in a variety of ways but one of the most commonly used tools is principal component factor analysis. The cut-off value of the communality is taken to be 0.5. Tables 9.2 shows the component matrices for each construct.

Table 9.2: Component Matrices

	Component
	1
Improve service/product quality	0.849
Reduce cost of labor	0.840
Reduce product/service offering price	0.166

	Component
	1
Detailed study of the market to monitor customer requirements	0.918
Clear segmentation of the target market to customize new offer	0.862
Clear set of customers' needs prior to innovation initiative	0.935
The customer needs and inputs are well documented	0.913
Methods and tools to capture customer needs	0.913

	Component
	1
Simplify the delivery process	0.875
Simplify internal business processes	0.875

	Component
	1
Aligning processes to local infrastructure	0.879
No. of such process innovations carried out in last 3 years	0.879

	Component
	1
Market analysis to match income pattern and service size	0.819
No. of such innovations carried out in last 3 years	0.819

	Component
	1
Educating Consumers on new/improved services	0.826
No. of such projects carried out in last 3 years	0.814
Investments made to educate consumers on new/improved services in last 3 years	0.720

	Component
	1
Management provides with sufficient funding for innovation	0.954
Management spends sufficient time on innovation initiatives	0.954

The communality tables for the constructs show that each item explains a significant percentage of the variance of the construct (Table 9.3). Most values are more than 0.5 and should not be excluded from further analysis.

Table 9.3: Communalities

	Initial	Extraction
Improve service/product quality	1	0.72
Reduce cost of labor	1	0.71
Reduce product/service offering price	1	0.03

	Initial	Extraction
Detailed study of the market to monitor customer requirements	1	0.842
Clear segmentation of the target market to customize new offer	1	0.743
Clear set of customers' needs prior to innovation initiative	1	0.875
The customer needs and inputs are well documented	1	0.834
Methods and tools to capture customer needs	1	0.834

	Initial	Extraction
Simplify the delivery process	1	0.766
Simplify internal business processes	1	0.766

	Initial	Extraction
Aligning processes to local infrastructure	1	0.773
No. of such process innovations carried out in last 3 years	1	0.773

	Initial	Extraction
Market analysis to match income pattern and service size	1	0.776
No. of such innovations carried out in last 3 years	1	0.776

	Initial	Extraction
Educating Consumers on new/improved services	1	0.682
No. of such projects carried out in last 3 years	1	0.663
Investments made to educate consumers on new/improved services in last 3 years	1	0.518

	Initial	Extraction
Management provides with sufficient funding for innovation	1	0.910
Management spends sufficient time on innovation initiatives	1	0.910

Although, reducing “product/service offering price” factor shows values less than the cut-off value but the factor is not taken out from further analysis as it is analyzed in conjunction with the factor “improving product/service quality/performance”. That is although reducing “product/service offering price” as a stand-alone variable is not found to be useful but it is believed better performing firms have higher ratio of quality/performance over price. In a nut shell only reducing product/service offering price is not enough; when reducing price the quality of the product/service cannot be compromised in the BOP markets.

9.2 Discussion on Research Findings

9.2.1 Service Innovation Performance Indicator

As previously discussed in the performance evaluation section of the survey, the organizations were asked to rate on a Likert Scale of 1 to 5 (totally unsuccessful to totally successful) the overall performance of the improved or new services introduced into the market over the last 3 years. Following were the ten performance measures chosen; exceeding the total sales objectives, exceeding the market share objectives, being profitable for the company, having a strong long-term performance, improving the loyalty of the existing customers, having positive impact on company's image, enhancing the profitability of other services/products of the company, having positive impact for company to open up new markets, having significant impact for the company in attracting new customers, giving the company important competitive advantage.

For this research work, an overall performance indicator was used to assess the performance of service innovation initiatives of the organizations in the BOP markets. The overall performance indicator for service innovation is calculated as an aggregate mean score of all the ten performance measures. In order to investigate the impact of various factors on service innovation in BOP markets we defined better performing organizations as those having overall performance indicator of greater than 3.5 (23 firms) while the rest with overall performance indicator of less than or equal to 3.5 (20 firms) were considered as low performing organizations on innovation front.

9.3 Business Model

9.3.1 Partnerships/Alliances

The results verified the perception that organizations that established more alliances and partnerships for resources and expertise showed better service innovation performance as compared to others. Results showed that in BOP markets better performing organizations more often established alliances and partnerships with other organizations (mean score: 3.91) as compared to low performing organizations (mean score: 3.00). The results were statistically significant at 95% significance level (P- value: 0.011).

As discussed in the literature review section, it is assumed that collaboration with non-traditional partners like government agencies, NGO's and universities can enhance the likelihood of success in BOP markets (Nielson et al, 2008). Table 9.4 illustrates the results between innovation performance and non-traditional partnerships/alliances. A higher percentage of better performing organizations are involved in partnerships with non-traditional partners like government bodies and institutes/universities (the results are significant at 90% confidence interval. However, the affect of alliances with non-profit organizations shows no statistically significant results. It is possible that affect of alliances/partnerships with non-profit organizations maybe valid only for certain kinds of service industries however due to lack of available data a conclusive result is not possible at this stage.

Table 9.4: Innovation Performance and Non-Traditional Partnerships/Alliances

Kind of partnerships/alliances	Percentage of	
	Low Performing Organizations	Better Performing Organizations
Non-profit organizations	23.1	16.7
Government bodies	15.4	43.3
Institutes/universities	23.1	36.7

Table 9.5 (below) shows the results between innovation performance and traditional partnerships/alliances. A higher percentage of better performing organizations are involved in partnerships with traditional partners (as well), that is buyers/users of services, suppliers, local companies and other organizations in the market. However, except for alliance/partnership with local companies (90% confidence interval), the other factors have not shown statistically significant results. These results re-iterate the importance of knowing the local requirements when offering products/services in BOP markets. Therefore, alliances/partnerships with local companies to leverage their understanding of local necessities/requirements are extremely important.

Table 9.5: Innovation Performance and Traditional Partnerships/Alliances

Kind of Partnerships/Alliances	Percentage of	
	Low Performing Organizations	Better Performing Organizations
Buyers/Users of services	46.2	46.7
Local companies	15.4	40
Suppliers	46.2	56.7
Other firms in market	7.7	26.7

9.4 Offering

9.4.1 Quality/Performance and Price Relationship

Quality/performance and price relationship is one of the important aspects suggested in the literature to contribute to better service innovation performance. Pricing for the bottom of the pyramid is extremely critical. The challenge is affordability: prices need to be affordable to BOP consumers with no compromise on quality and performance (Pitta et al., 2008). The results in Table 9.6 show that better performing organizations tend to focus more on improving the quality/performance of their service/product while at the same time they are able to reduce the offering price (results are significant at 99% confidence interval, as shown). It is interesting to note that although better performing organizations tend to offer better quality/performance products while reducing the offering price yet this is not necessarily achieved through reducing the cost of labour (both better and low performing organizations don't show any significant difference in the means).

Table 9.6: Innovation Performance and Quality/Performance and Price Relationship

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Improve service/product quality	3.30	4.13	0.01
Reduce cost of labor	3.05	3.13	0.80
Reduce product/service offering price	2.55	3.43	0.01

9.4.2 Customized Solutions

In a business setup, the need to cater to the requirements of local customers cannot be overstressed. The sparse literature on service innovation has indicated the impact of service customization on service innovation (De Brantani, 1991). The results of this study are not any different; the better performing organizations in BOP markets tend to adopt more customer centric approach. All the five variables tested for this section show statistically significant differences between the means of better performing organizations as against the low performing ones (see Table 9.7).

Table 9.7: Innovation Performance and Customization

	Mean		P-Value
	Low Performing Organizations	Better Performing Organizations	
Detailed study of the market to monitor customer requirements	2.94	3.77	0.06
Clear segmentation of the target market to customize new offer	2.88	3.73	0.06
Clear set of customers' needs prior to innovation initiative	2.94	3.82	0.03
The customer needs and inputs are well documented	2.69	3.77	0.01
Methods and tools to capture customer needs	2.69	3.73	0.02

The market place for services is dominated by swift changes in customer requirements and severe competition. As a result, market research conducted by service organizations requires

continuous effort to spot change in customers' requirements and changes in competitors' strategies (Ottenbacher and Gnoth., 2005). In other words, market responsiveness plays an important role to facilitate organizations to swiftly react to changes in their customers' needs. The results of this study show that better performing organizations claimed to conduct more market research as their strategy at 90% confidence interval (Table 9.7).

According to Dibb (1998), market segmentation helps organizations to deal with this variability and satisfy the different market sectors. The customers in general have different requirements and needs from their products and services. This variability in service preferences and buying behaviors is believed to be even more prominent in BOP markets as these customers' profile is extremely different from the people from middle class or rich background. Hence, the variability should be accounted for by the differences in services and products offered for BOP customers. The results of this study show that the mean of market segmentation variable is significantly higher for better performing organizations as compared to low performing ones at 90% confidence interval (Table 9.7). Thus the benefit of market segmentation for service innovation in BOP markets is clearly highlighted. In general, the better performing organizations practiced market segmentation more often than the low performing ones, indicating positive impact of service customization on service innovation.

Past research in service innovation area highlights the importance of acquiring knowledge of customers' behavior and wants for successful service innovations. The literature has identified the role and importance of relationship between service innovation performance and market-related activities (Ottenbacher and Gnoth., 2005; Oldenboom and Abratt, 2000). The results of

this study (see Table 9.7) also show that better performing organizations focus more on getting clear set of customer requirements. The difference between the mean of two groups is statistically significant at 95% confidence interval. The better performing organizations in BOP markets claim to obtain a clear set of customer requirements prior to service innovation initiative and also carefully documented customer needs.

It is quite evident from results that better performing organizations in the BOP market claim more usage of reliable methods and tools to capture customer needs (Table 9.7). The difference in the mean of two groups of organizations is significant at 95% confidence interval. This provides evidence of the possible benefits that service organizations in BOP markets can reap by using reliable tools and techniques for mapping customer requirements.

9.5 Process

9.5.1 Process Design must Complement Local Infrastructure

According to Prahalad (2005), one of the factors to contribute to the success in BOP markets requires redefining the process (innovating) in such a way that it would complement the local infrastructure. The result from this research verifies the claim as better performing organizations focus more on aligning their processes to the requirements of local infrastructure. The difference between the mean of two groups is statistically significant at 95% confidence interval (see Table 9.8).

Table 9.8: *Innovation Performance and Process Design to Complement Local Infrastructure*

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Number of organizations aligning processes to local infrastructure	2.75	3.95	0.006

The results also show that better performing organizations carried out between 4 to 8 innovations in last 3 years to align their processes to match local infrastructure whereas the low performing organizations carried out between 1 to 3 innovations with a P value of 0.025.

9.5.2 Simplification of Work Design

As discussed in the framework development section the highly skilled and educated work force is not as readily available in BOP markets as perhaps in developed markets. Thus de-skilling/simplification of both internal business processes and delivery processes was tested for their affect on service innovation performance in BOP markets. As shown in Table 9.9, the organizations with better innovation performance show a much higher mean for both simplification of the delivery process and simplification of the internal business processes (the results are significant at 99% confidence interval). This verifies the claim that for better performance on innovation front, the organizations in BOP markets have to re-design their internal business and delivery processes to cater to lower skill and education levels of the service providers.

Table 9 9: Innovation Performance and Simplification of Work Design

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Simplify the delivery process	3.20	4.00	0.01
Simplify internal business processes	3.20	4.13	0.00

9.6 Market

9.6.1 Service Size to match Income Pattern

Low income consumers prefer offerings in small sizes because of two major constraints i.e., income and lack of place. The customers in BOP segment of the market not only have less income but their cash inflows are also on a daily rather than monthly basis hence service offerings need to match the customers income pattern (Anderson and Billou, 2007).

As shown in Table 9.10, the organizations with better innovation performance show a much higher mean for doing market research to match service size to the customers' income pattern (the results are significant at 95% confidence interval). The results also show that better performing organizations had on average between 4 to 8 innovations in last 3 years to match income pattern of the customers and the serving size while the low performing organizations had on average only 1 to 3 such innovations in last 3 years (P- value = 0.024).

Table 9.10: Innovation Performance and Serving size

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Market analysis to match income pattern and service size	2.25	3.27	0.05

9.6.2 Education of Consumer

It is a well known fact that most BOP consumers have little or no access to electronic communications media. Hence, awareness is at the heart of successful service innovations in the BOP market (Anderson and Billou, 2007). It is evident from the results that better performing organizations in the BOP market claim more usage of educational means to make their consumers aware of the use and benefits of their innovations (see Table 9.11). The difference in the mean of two groups of organizations is highly significant at 99% confidence interval. This confirms the possible benefits that service organizations in BOP markets can reap by making their consumers aware of the use/benefits of their new/improved products and services. Overall the better performing organizations in BOP markets carried out between 6 to 10 projects to educate the consumers on the use and benefits of the new /improved services as compared to 1 to 4 such projects by low performing organizations (P-value 0.1).

As discussed in literature review section, innovation in BOP markets requires significant investments in educating the customer on the appropriate use and the benefits of specific services (Prahalad, 2005). However, the results do not support this claim the reason maybe very few

respondents answering this question thus outliers may have distorted the final results (see Table 9.11).

Table 9.11: Innovation Performance and Educating Consumer

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Educating Consumers on new/improved services	2.13	3.59	0.001
Investments made to educate consumers on new/improved services in last 3 years (USD)	994000	811538	Not Significant

9.7 Management Commitment

Top management commitment to innovation initiatives has been repeatedly mentioned in the past literature as one of the vital success factors for service innovation. Management support is one of the most important factors found out in literature to be impacting the new service performance (Gima, 1996). Ottenbacher and Gnoth, (2005) mention, when assessing the performance of service innovation, it is essential to include criteria covering those aspects such as proper supervision during innovation process. According to Ottenbacher and Gnoth (2005), the success of a new service depends on the proficiency the top management demonstrates in deciding what resources the new service will require. Likewise, the results of this study verify the importance of a supportive and committed management standing behind the innovation initiatives. As seen from Table 9.12, better performing organizations have higher means for both sufficient top managerial time and resources for innovation initiatives (the results are statistically significant at 99% confidence level).

Table 9.12: Innovation Performance and Top Management Commitment

	Mean		P- value
	Low Performing Organizations	Better Performing Organizations	
Management provides with sufficient resources for innovation	2.19	3.73	0.00
Management spends sufficient time on innovation initiatives	2.06	3.86	0.00

9.8 Referring to Conceptual Framework and Conclusions

The full research model along with the summary of key findings is shown in Figure 9.1 and Table 9.13. In general, all the factors in the framework were found to be significantly important when the means of better performing and low performing organizations were tested. We can say that BOP service organizations that implemented the factors (identified in the conceptual framework) experience a higher level of service innovation success. All the 9 different factors in the framework were found to be significantly different (confidence interval of 95%) when comparison was done between better performing and low performing service organizations in the BOP markets. This study concludes that better performing service organizations in BOP markets put more stress on the tested factors of the conceptual model. Hence, we can say that BOP service organizations that put into practice the factors in the framework more often attain a higher overall performance.

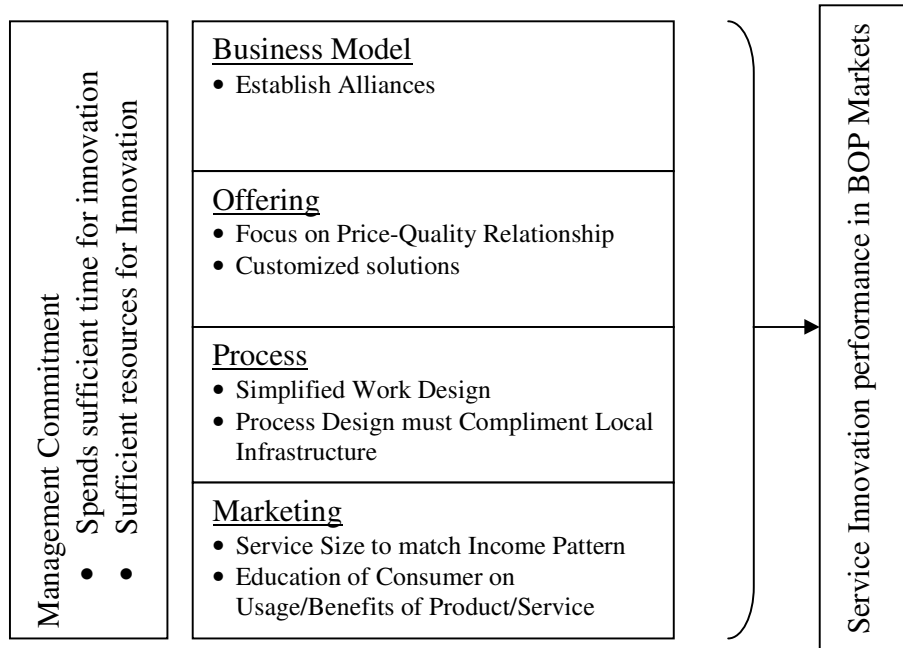


Figure 9.1: Proposed Framework

Table 9.13: Summary of Results

	P- value
Establish partnerships/alliances	0.01
Improve service/product quality	0.01
Reduce cost of labor	0.80
Reduce product/service offering price	0.01
Detailed study of the market to monitor customer requirements	0.06
Clear segmentation of the target market to customize new offer	0.06
Clear set of customers' needs prior to innovation initiative	0.03

The customer needs and inputs are well documented	0.01
Methods and tools to capture customer needs	0.02
Aligning processes to local infrastructure	0.006
No. of such process innovations carried out in last 3 years	0.025
Simplify the delivery process	0.01
Simplify internal business processes	0.00
Market analysis to match income pattern and service size	0.05
No. of such innovations carried out in last 3 years	0.024
Educating Consumers on new/improved services	0.001
No. of such projects carried out in last 3 years	.1
Investments made to educate consumers on new/improved services in last 3 years	Not Significant
Management provides with sufficient resources for innovation	0.00
Management spends sufficient time on innovation initiatives	0.00

10. Discussion and Conclusion

10.1 Introduction

In this chapter discussion is presented on the overall research findings. The chapter is concluded with a discussion on the implications and limitations of this study. Finally directions for future research are also elaborated.

10.2 Research Findings

As mentioned in earlier chapters, there is scarce literature on service innovation in BOP markets. Most of the research on bottom of the pyramid markets (BOP) is concentrated on identifying the benefits for organizations operating in BOP markets. The discussion then leads towards whether success in BOP markets can result in elimination of poverty in the bottom of the pyramid markets? Researchers have also argued on the exact volume of potential consumers in BOP markets. Thus, no single standard framework for investigating service innovation in BOP markets exists. Hence, this study is carried out to identify the factors that could affect the innovation performance of service organizations in BOP markets.

The purpose of this study is to investigate service innovation in BOP markets. Based on literature review, various factors were identified and probed for their affect on innovation performance of service organizations in BOP markets. The thesis is based on the following research questions;

Q.1. What is the current status of service innovation in BOP markets?

Q2. What are the factors that affect the innovation performance of the service organizations in BOP markets?

A number of factors were identified and tested for their affect on innovation performance of service organizations in BOP markets. A comprehensive questionnaire was designed while keeping the length of the survey short. The survey was conducted online thus allowing potentially a wider respondent base for the collection of data. After some screening and basic questions, the first part of the survey measured service innovation performance of the organizations using ten different performance dimensions varying from financial metrics (profitability and market share) to more customer centric measures (attracting new customers, customer loyalty). Respondent organizations were asked evaluate the success of their innovation initiatives on a 1 – 5 Likert scale ranging from “totally unsuccessful” to “totally “successful” for each performance measure. The overall performance was calculated as an aggregate mean of all the performance measures. In order to investigate the impact of various factors on service innovation in BOP markets better performing organizations (measured by overall performance indicator) were compared against the low performing organizations for each factor of the proposed framework. The rest of the sections in the survey were used to evaluate each of the different factors in the framework for its affect of service innovation performance in BOP markets.

The results showed that in BOP markets better performing organizations more often established alliances and partnerships with other organizations in contrast to low performing organizations (95% confidence interval). It is also observed from results that a higher percentage of better

performing organizations were found to be involved in partnerships with non-traditional partners like government bodies and institutes/universities. However, the affect of alliances with non-profit organizations showed no statistically significant results. It is possible that affect of alliances/partnerships with non-profit organizations maybe valid only for certain kinds of service industries however due to lack of available data a conclusive result is not possible at this stage. Among traditional partners the only statistically significant difference was that better performing organizations claimed to have more alliances/partnerships with local companies. Hence, we can say alliances/partnerships with local companies to leverage their understanding of local necessities/requirements/culture are important for better service innovation performance in BOP markets.

Analysis showed that better performing organizations are more inclined on improving the quality/performance of their offering while making sure the price is reduced as well to cater to BOP markets (99% confidence interval). It is interesting to note that although better performing organizations tend to offer better quality/performance products while reducing the offering price yet this is not necessarily achieved through reducing the cost of labour (both better and low performing organizations do not show any significant difference in the means). However an interesting result is that better quality/ performance is not achieved through reducing the cost of labour (both better and low performing organizations did not demonstrate any significant difference in the means).

Discussion in the previous chapter shows that better performing organizations claimed to conduct more market research as compared to low performing organizations (significant at 90%

confidence interval). The analysis shows that the mean of market segmentation variable was significantly higher for better performing organizations as compared to the low performing ones (significant at 90% confidence interval). In general, the better performing organizations practiced market segmentation more often as compared to low performing ones, indicating positive impact of service customization on innovation in BOP markets. As we know from the literature on marketing research, customers have varied requirements and expectations. This variability in service preferences seems to be very important in BOP markets showing a positive impact between market segmentation on the service innovation performance. It is also observed from data analysis that better performing organizations in BOP markets vigilantly documented customer needs and also acquired a comprehensible set of customer requirements prior to any innovation initiative (significant at 95% confidence interval). The better performing organizations in the BOP market claim more usage of reliable methods and tools to capture customer needs. This provides support to the proposition that there are possible benefits for the service organizations in BOP markets in using reliable tools and techniques for mapping customer requirements (significant at 95% confidence interval).

Our results show that one of the factors to success in BOP markets is redefining the process to complement the local infrastructure. The results confirm that better performing organizations focus more on aligning their processes to the requirements of local infrastructure as compared to low performing organizations. The organizations with better innovation performance show a much higher mean for both simplification of the delivery process and simplification of the internal business processes (significant at 95% confidence interval). This verifies the claim that for better performance on service innovation front, the organizations in BOP markets should re-

design their internal business and product/service delivery processes to take account of lower skills and education levels employees providing the service.

The literature showed that many researchers have discussed why consumers in BOP markets would prefer offerings in small sizes the reasons being variable income pattern and lack of place. BOP consumers have lesser income and their salaries are also on a daily/weekly basis as compared to other consumers whose income patterns are significantly different. Thus organizations with better innovation performance show a much higher mean for doing market research to match service size to the customers' income pattern (the results are significant at 95% confidence interval). Not only that but better performing organizations had on average more innovations to match income pattern of the customers and the serving size as contrasted to the low performing organizations.

BOP consumers have limited access to the new and even traditional electronic media thus awareness has been identified as an important imitative for successful service innovations in the BOP markets. Better performing organizations in the BOP market show more usage of educational means to help educate their consumers on the use and benefits of their innovations (significant at 99% confidence interval). It was also seen that better performing organizations in BOP markets on average carried out more projects to educate the potential consumers on the use and benefits of the new /improved services as contrasted to low performing organizations.

Management support is one of the most frequently identified factors by the researchers to affect the service innovation performance. The importance of a committed management to the cause of

innovation initiatives in the organization is also highlighted by the analysis done for this study. The better performing organizations showed higher means for both sufficient top managerial time and resources for innovation initiatives as compared to low performing organizations (significant at 99% confidence interval). Hence, in order to improve service innovation performance in BOP markets top management should take personal interest in the innovation initiatives and provide adequate resources.

Thus, almost all the factors under investigation for this study showed a positive impact on service innovation performance of the organizations in BOP markets. That is there was significant difference between means of various factors as contrasted between better performing organizations and the low performing ones. An analysis of the questionnaire data shows the service organizations in BOP markets which implement the factors identified in the framework are more successful in their final outcomes. The developed framework provides service organizations in BOP markets a systematic way to be successful in BOP markets. Furthermore, it is recommended that different factors identified at various stages of value chain (business model, processes, offerings and marketing) must be focused on comprehensively in order to achieve the desired outcome. Instances where significant results were not observed can be attributed to lack of enough data points available, as discussed earlier.

Finally, results of this study also give some insight as to why innovation initiatives tend to fail in BOP markets. Almost half of the respondent organizations reported cancellation, delay etc of innovation initiatives. The reasons were explored and about 35% of the organizations said that economic risk associated with the innovation initiative was the reason followed by lack of staff

and potential demand risks. This is something where collaborations and alliances/partnerships with both traditional and non-traditional partners may be helpful.

10.3 Limitations and Future Research

In view of the research findings, a general idea of the limitations of this study along with potential research direction is provided.

Firstly, although survey invitations were sent to a large number of potential respondents however low response rate did not allow conducting any cross regional analysis. The impact of cultural and regional differences among BOP markets might be an important variable and it demands further investigation. Hence future research with multiple respondents is recommended across different regions for further insights.

Another important consideration is to study the phenomenon of service innovation in BOP markets incorporating cross-industry analysis. The industry differences were not taken into account in our analysis. Limited number of respondents in each industry category did not allow us the liberty to do such analysis. As relative significance of service innovation is different in various service industries; a further study focusing on different service industries in BOP markets will be useful. Also, using industry sector as a moderator for comparing the differences among industries may also throw light on new issues.

Secondly, based on various recommendations in the literature a straight forward and simple survey was designed to make it easy to understand for the respondents. In order to achieve a

higher response rate effort was made to make the questionnaire less lengthy and time consuming to fill in. Hence it is possible that some factors related to service innovation in BOP markets may have been missed. However, a more detailed study could not be incorporated without significantly lengthening the survey and potentially further lowering the response rate. Thus a future research endeavor in the area could incorporate a more detailed questionnaire with hopefully a broader sample to obtain more interesting results.

Lastly, the data collected for this study utilized the key informant approach. Hence, all results must be interpreted with the possible bias in view. Given the above possible bias it is recommended that future research should analyze the data with respondents coming from different seniority levels and functional area.

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Online Resources

WEBLINKS

The websites used for references are,

www.ciafactbook.com

www.merriam-webster.com

www.bartleby.com

www.dti.gov.uk

www.worldbank.org

www.doblin.com

Appendix A: Questionnaire Administration

Dear Respondent,

You are invited to participate in a survey conducted by Usman Asad, a Masters of Engineering candidate in the Department of Industrial & Systems Engineering at the National University of Singapore. This survey is part of his Masters Research project under the supervision of A/Prof TAN Kay Chuan. The objective of this research project is to understand the **deterministic factors of service innovation in the low income markets**.

Our target sample is **service quality managers, operations managers, and staffs that are directly involved in the service innovation process**. The sample database is generated from ORSIS/ORBIS. We estimate that it will take **less than 15 minutes** to complete the questionnaire.

Without the help of people like you, research on service innovation could not be conducted. Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time.

To complete the survey, click on the link below (or copy the link and paste it to your web browser):

ADD LINK

We understand that as a senior professional there are multiple demands on your time. **To appreciate your contribution, a report of the survey results will be sent to you via e-mail once it is ready.**

If you have any questions or concerns about this study, you may contact Mr. Usman Asad at g0500724@nus.edu.sg. Thank you very much for your time.

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Service-Based Companies and Innovation in Low Income Markets

The questionnaire should take less than 15 minutes to complete. There are four sections in this questionnaire. The request for receiving the summary results can be made by completing Respondent profile at the end of the questionnaire (optional). Please answer all the relevant questions in each of the following sections. When precise answer is not possible, please give your best approximation rather than leaving the answers blank. **All the information provided is kept strictly confidential.**

For the purpose of this survey, an income segment with **average per capita income of less than US\$ 2,000 per anum is defined as low income market.**

Section A

1. What is your Service Area?

- Banking/Finance
- Hospitality/Hotel
- Information Technology
- Transport
- Consultancy
- Healthcare
- Retail
- Utilities
- Employment Agency
- Insurance
- Telecommunication
- Others

2. How many employees does your company have?

- <50
- 50 – 100
- 101 – 250
- 251 – 500
- 501 – 1000
- >1000

3. What is the location of your organization?

4. Does your company have products/services targeted to the low income segment of the market?

- Yes
- No

*Average per capita income of less than US\$ 2,000 per anum

5. Is your company involved in innovation activities? Innovation is defined as “a new or substantially improved service, product or process by your firm”.

- Yes
- No

If your answer to Q5 is “No” then please go to the last page and fill in the respondent profile (optional). There is no need to answer other questions. Thanks for your cooperation.

Section B

Performance of the Innovation Initiatives

In this section we attempt to ascertain the performance of the service innovation initiatives in your organization.

Please rate the overall performance of the improved or new services introduced into the market over the last 3 years according to the given criteria.

Totally Unsuccessful 1 Unsuccessful 2 Small impact 3
Successful 4 Totally Successful 5

1. Performance measures of the new/improved services

	1	2	3	4	5
Exceeding the total sales objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exceeding the market share objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being profitable for the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having a strong long term performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving the loyalty of the existing customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having positive impact on company's image	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enhancing the profitability of other services/products of the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	1	2	3	4	5
Having positive impact for company to open up new markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having significant impact for the company in attracting new customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Giving the company important competitive advantage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section C

In this section we attempt to identify key activities that are conducted during the innovation process for developing new or improved services.

For this section, where asked please indicate the degree of using following activities in your company for improved/new services according to the following criteria.

Never 1 Seldom 2 Sometimes 3 Often 4 Frequently 5

1. The organization establishes partnerships/alliances with other organizations for resources and expertise

- 1
- 2
- 3
- 4
- 5

2. Please indicate what kind of partners/alliances you have?

- Non-profit organizations
- Buyers/Users of services
- Local companies
- Government bodies
- Institutes/Universities
- Suppliers
- Other firms in your market
- Others

3. How often does the organization take following initiatives?

	1	2	3	4	5
Improve service/product performance/quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce cost of labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve internal business processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce product/service offering price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	1	2	3	4	5
Improving the loyalty of the existing customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To simplify the delivery process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Customer centric approach

	1	2	3	4	5
The organization carries out detailed study of the market on a regular basis to monitor customer requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The organization makes clear segmentation of the target market to customize new offer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The organization obtains clear set of customers' needs prior to innovation initiative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The customer needs and inputs are well documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliable methods and tools are used to capture customer needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5(a). The organization aligns its processes to the requirement of local infrastructure

- 1
- 2
- 3
- 4
- 5

5(b). Pertaining to question 5(a), how many such process innovations were under taken in last 3 years?

- None
- 1 - 3
- 4 - 8
- 9 - 15
- > 15

6(a). The organization conducts market analysis to make its services/products price compatible with the income pattern of the customers

- 1
- 2
- 3
- 4
- 5

6(b). Pertaining to question 6(a), please identify how many such service/product innovations were under taken in last 3 years?

- None
- 1 - 3
- 4 - 8
- 9 - 15
- > 15

7(a). The organization educates its customers on the appropriate use and benefits of improved/new services and products

- 1
- 2
- 3
- 4
- 5

7(b). How much were the investments made by your organization to educate its customers in last 3 years?

US\$

7(c). What were the total number of projects carried out in last 3 years to educate customers on the appropriate use and benefits of improved/new services and products?

- None
- 1 - 5
- 6 - 10
- 11 - 20
- > 20

8. Management Support

	1	2	3	4	5
Management provides with sufficient funding for innovation initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Management spends sufficient time for innovation initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D

In this section the reasons behind lack of success of innovation initiatives are explored.

1. Innovation initiatives in the organization got canceled, delayed or stopped prematurely in the last 3 years

- Yes
 No

2. If the answer to above questions was “yes” please indicate the reasons behind cancellation, delay and stoppage of the innovation initiatives

- Economic Risks
 Time to market exceeded
 Lack of staff
 Cooperation with partners not proceeding smoothly
 Lack of knowledge
 Demand risks
 Restrictive government regulations
 Internal organizational rigidities
 Others

Respondent Profile (Optional)

1. Name

2. Job Title

3. Company

4. Address and Postal code

5. Phone/Fax/Email

All the information will be kept strictly confidential.
THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE