

## Service Innovation Management on Market Performance through Relevancy of Market conditions: Guide to Telecommunications Industry, Malaysia

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**Abstract:** Telecommunication industry recognizes innovation as an effective business strategy to strive for cost reduction, improve the performance, productivity, and growth. The present article develops a conceptual model and a series of propositions, grounded in past studies for service innovation management of new and existing product developments. It propose the direct and indirect relationship between service innovation management on market performance through the relevancy of market conditions. The organizational culture has been considered as a moderating variable to identify the discriminating factors among telecommunication companies. The productive/unproductive innovative projects and services are considered as the final outcome. Further, for new product developments, the conceptual model proposes two antecedents namely value co-creation and innovation value chain. The model will facilitate the business managers to recognize the existing and new product development process through a different perspective of innovation management. The managers will be able to realize the market conditions and ways of consumer interaction for innovation management. The proposed model may be viewed as a guide to the telecommunication industry and may be customized to invoke an innovation process and success more effectively.

**Key words:** Service innovation management; relevancy to market conditions, market performance; organizational culture, value co-creation, innovation value chain.

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### INTRODUCTION

The success of telecommunication industry depends on the company's efforts and investments to broader innovation policy in order to connect their innovation solution to the market and gain competitive advantage. As the telecommunication system has been the fastest growing, it faces a severe competition. In a competitive market, the telecommunication service providers may tend to offer innovative services to triumph over the competition and later co-create value. Offering innovative services in telecommunication industry are an effective business strategy to strive for cost reduction, improve the performance, productivity, and growth. Among Southeast Asia, Malaysia's telecommunication network is more advanced, innovative, and is the second largest mobile user after Singapore (Economic Transformation Programme, 2011). Malaysia has worked hard to generate one of the most advanced telecom environments in the developing countries. However, the question is how the telecommunication industry in Malaysia focuses on innovation.

In reality, based on the report from Pawanchik, Sulaiman, and Zahari (2011) innovation in Malaysia is beginning to become part of company culture and their consideration is still on benchmarking, operational efficiency, copying competitors, cost cutting, and head of competition. And, innovation policies in Malaysia are more oriented towards Research and Development (R&D), science and technology driven innovation rather than modern approaches in innovation such as service innovation, open innovation, or business model innovation.

Innovation itself is very complex and dynamic in nature and most of the innovation project faces lots of challenges in spite of company's capability in designing and producing high quality of service. About 50 to 90 percent of innovation projects fail in the marketplace to reach the organizational goals (Downey, 2007). In context of Malaysian organization, it might be related to limited management knowledge and skills towards market (Taghizadeh, Jayaraman, & Ismail, 2012), tendency of management not to use innovation terminology (Gallouj & Weinstein, 1997; Sundbo, 1997), considering innovation only in technology (Idris, 2008), or organizational culture as a barrier for innovation (Pawanchik, et. al., 2011). These issues might be the reasons of the prevalence of low level of innovation initiative in the Malaysian organization context where they had slipped downwards in its global competitiveness in terms of innovation by four positions from 2008 to 2012 and it is expected to decline in the future (World Economic Forum, 2012).

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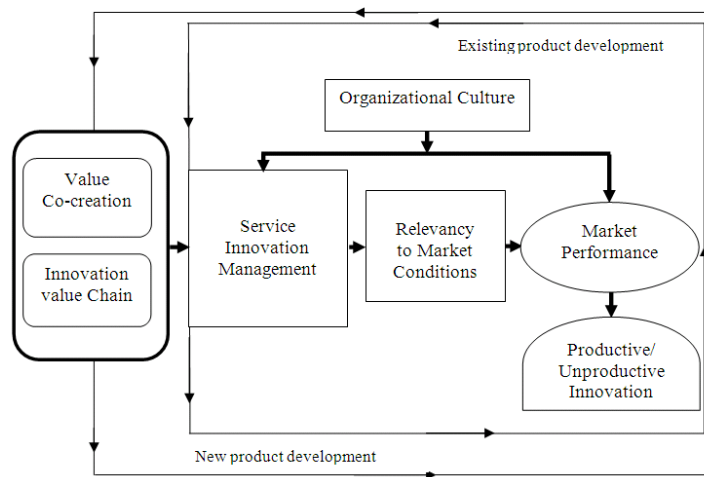
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Therefore, the study attempts to propose a conceptual research framework for innovation management both for existing product development and new product development (Figure 1). The framework will integrate multi-dimensional points of views, where the management of the market, organizational changes, and technological transforms need to take within the dimensions of the firm's competitiveness and efficiency index.

**Conceptual Framework:**

The framework consists of two frames (Figure 1). The inner frame for existing product development. The outer frame for new product development. For existing product development, it attempts to (a) study the influence of service innovation management on the market performance through the relevancy of market conditions pertaining to telecommunication sector, (b) identify the role of organizational culture as moderating effect on the service innovation management and market performance, and (e) investigate the impact of market performance on the productive/unproductive nature of innovative products.

For new product development, the framework proposes to assess the importance of value co-creation and innovation value chain at the R&D stage as well. The success and failure story of innovative projects derived from the current study will form a guideline to other telecommunication industries in Asia. The proposed framework may be customized for the applications of other telecommunication service sectors.



**Fig. 1:** Conceptual framework of the paper.

Understanding why innovation, organizational culture, value-creation activities, and pricing practices may lead organization to gain greater performance and competitive advantage can be explained by resource-based view of the firm. The resource-based view of Barney (1991) examines the relationship between a firm's internal characteristic on performance and assumes that the desired outcomes of the managerial effort within the firm is sustainable in competitive advantage in the market. However, the proposed framework in Figure 1 indicates that the telecommunication industries which would like to achieve high productivity innovation should concentrate on market performance. The performance of innovation in the market depends on how well an industry manages on service innovation, as the best practice in the business process. Indeed, this would happen if the mediating role of relevancy of product to market conditions such as pricing practice is considered. Every telecommunication industry that claims to be innovative in their business strategy will pursue a challenging task driven through the organizational culture. To avert the failure innovative projects, companies usually extract relevant information from the market on the development of existing and new product to have a better performance in the future.

**Service Innovation Management:**

Until the 1980s, service was not examined and considered to be innovative (Gallouj & Savona, 2011). Later and over the past years, researchers have paid attention to service innovation and development. While a focus of some studies has been developed to explain the impact of information and communication technologies (ICTs) (Barras, 1986). However, innovation has relationships with more than the role of information and communication technologies, because service has some specific characteristics that are required to understand the dynamics and the nature of innovation. Interaction between customer and other parties such as supplier and business service provider within the innovation network may provide knowledge in an organization (Gallouj & Windrum, 2009). In service-based innovation, five dimensions of neo-Schumpeterian framework (includes: product innovation, process innovation, market innovation, organizational innovation, and input innovation)

invigorate each other while, in manufacturing-based innovation, product and process innovation have an advantage on the market, organizational and input innovation (Gallouj & Windrum, 2009). Inconsistent with Schumpeterian theory, Tidd, Bessant, and Pavitt (2001) and Tidd and Bessant (2009) have developed a model (SPOTS) to analyze the management of innovation which interact changes in technology, market and organization. The SPOTS model includes five components: **Strategy, Process, Organization, Tools, and System**. It integrates all functions within the organization simultaneously in order to reduce the time taken to develop and launch new product, enhance the quality of products, and at the end remain firm's competitiveness. The multiple functions consist of tasks from the early stage of the innovation process to build an efficient approach for launching innovative products and services or improving the existing one. Each of the five factors plays a different role in the performance of service innovation while there is a synergy between all the components. These five practices along with value chain may guide in new service development activities and continuous improvement, may offer a specialized competitive advantage, cost advantage, learning capabilities, standardization and encourage people to communicate with other channels to get idea for innovation (Hull & Tidd, 2003).

**Strategy**-Innovation strategy is defined as time-cost-based strategic positioning and resource allocation decision (Davila, Epstein, & Matusik, 2004). In innovative strategy new technologies, market developments, and innovation projects review and identify to match appropriately with the organization's goals. To reach these goals, developing an innovation strategy of Rapid, Reiterative, and Redevelopment (RRR) are needed that requires firms to get more knowledge from customers, markets, technology, regulation, competition, and suppliers. RRR approach reuses knowledge and organizes a cyclical process of planning, testing, and reassessing and expands the project after appropriate adoption. By repeating the process cycle, major improvements in existing products are made that enable the company to deliver value and build competitive advantage (Tidd & Bessant, 2009).

**Process**-The process represents a disciplined practice in order to control the innovation process from idea generation to successful implementation of new product development effectively and efficiently within prior specified time frame and budget. This control will lead to the high level of product commercialization (Hull & Tidd, 2003). Essentially, process considers various activities include how well to assess markets, identify customer needs, quality function, and review the design of the products. For example, in the external investigating of in-process design controls, departments involve stakeholders in generating new product ideas to ensure that customer needs are prioritized in the uncertain environment.

**Organization**-According to the Weiss and Legrand (2011), "An innovative organization is an organization that innovates systematically and sustainable in everything it does and how it does it". A set of many structures and components are integrated within an innovative organization to develop new product such as; shared vision, effective team working, creative climate, leadership and appropriate structure, and external factors. The main characteristic of such an organization is coordination of people at all stages of the innovation process from upstream sources of supply to downstream customers such as marketing, operation, engineering, human resource, and finance functional areas (Roy & Sivakumar, 2010). This Cross-Functional Team (CFT) affects the innovative activities and enable innovation to flourish which bring discipline and an adequate empowerment related to functional departments in terms of staffing and budget (Hull & Tidd, 2003). CFT affects the late stage of a value chain, Early Simultaneous Influence (ESI) function which includes process development or customer services. ESI and highly performance team work increase the level of idea generation, benefit performance and success of any organization while without effective teams, innovation will be of a low level of implementation.

**Tools**-Computer Information Technology (CIT) tools enable an organization to have a collaborative and a creative working place to reduce the complexity of the environment through continuously updating the process of product and service development cycle among CFT members. Communication among CFT member allows them to share their knowledge and experience in the common process control (Collins & Hull, 2002). Knowledge sharing improves process speedy and timely and experience sharing systematically compares their service with the competitor. The speedy of data distribution make the CIT positive impact on the system integration result in lower cost in data transmittal and greater reliability in improving performance. Besides CIT create challenges for management, to evaluate and control the entire project through stored day-to-day information in order to teach and train staff in reviewing customer satisfaction or project evaluation (Mudrak, van Wagenberg, & Wubben, 2005).

**System**-Within the value chain, socio-integration between internal functions and external organization, linkage among stakeholders (LAS), are needed to get new ideas for developing service and product as well as to achieve the firm's objective to compete. LAS explore and design the new service and product based on customer's needs and expectations. Within LAS, customers have a close relationship with other stakeholders (Panesar & Markeset, 2008). System integration also consists of good 'win-win' relationship with other firms, universities and other research centers, specialist knowledge, and local and national education system. These linkages demand to work continuously and develop knowledge, and facilitate to develop new product faster and timely.

***Market Performance:***

Previous studies on innovation management and its performance mostly focused on the manufacturing industries (Gunday, Ulusoy, Kilic, & Alpkın, 2011; Jiménez-Jiménez & Sanz-Valle, 2011). However, the evidence proves that the application of innovation management within the service industry affects the firm's overall performance significantly (Jiménez-Jiménez & Sanz-Valle, 2011; Ottenbacher, 2007; Sin, Tse, Heung, & Yim, 2005). On the other hand, the performance of an organization is frequently evaluated financially and used the simple outcome of financial indicators such as return on investment (ROI), return on sales (ROS), or sales growth. However, measuring performance regarding to innovation activities in term of product innovation and quality, time and cost, delivery process, and product development are important (e.g. Hull, 2003; Hull & Tidd, 2003). Thus, market driven performances and operational driven performances might evaluate the well managing of service innovation in organizational level. Market driven performances include attract new consumers, open new market, market share (Ottenbacher, 2007), consumer retention and consumer satisfaction (Sin et al., 2005). Operational driven performances include service development and delivery process improvement (Hull & Tidd, 2003).

***Relevancy to Market Conditions:***

Change in technology, market information and consumer preference change the profitability of organization (Nagle, Hogan, & Zale, 2010). It pushes organization to have an understanding of market conditions where products and services are transferred. Understanding the market condition allows organizations to identify the relevancy of their product to the market and customer willingness of purchasing. These days prices are more transparent to the customer due to revolution of information that make customers more and more price sensitive (Nagle et al., 2010). Thus, organizations are needed to create new pricing models which are not only focused on company and competitor's viewpoint, also to focus customer view to grow profitability in changing markets. Since, in pricing, more than 40 percent of managers ignore to consider company, customers, and competitors view at the same time. According to Hinterhuber (2004), organizations should consider three types of pricing practice approaches; customer, costs, and competitor. Costs focus on the company costs regarding to the new product development, the production process, and marketing of the new product. Customer value pricing focuses the customer willingness to pay for the perceived benefits of market offerings. In competitive pricing, prices of competing products are used as a benchmark in the place of customer demand. Pricing practice refers to some activities of the organization's managers to make a decision for the price (Ingenbleek, Debruyne, Frambach, & Verhallen, 2003). The activities are the information which is gathered, shared, and interpreted in the organizational process. On the basis of these three types of information, companies can assess price decision about the new product accurately.

***Organizational Culture:***

Barney (1986) considered organizational culture as a complex set of values, beliefs, and assumptions, that a firm should conduct its business. It identifies the interaction among relevant employees, consumers, suppliers, competitors, as key actors (Louis, 1983; as cited in Barney, 1986). Discussing about the strength of organizational culture, Schein (1990) notes that it comes from external environments and sharing experiences among employees. Tasks such as core mission, functions, organizational goals, and ways to accomplish the goals, the criteria for the allocation of status, power, authority, rewards and punishments are the reflection of organizational culture.

Innovation and its performance itself vary not only in manufacturing and service industry, but also across the service sectors (Therrien, Doloreux, & Chamberlin, 2011). Across service sub-sectors, innovation and its productivity is not uniform as well (Cruyssen & Hollanders, 2008; Gallouj & Weinstein, 1997). Even, organizational culture significantly varies between the multinational and local companies (Itakura, 2011). The companies with a culture of sustainability and proactive development toward progress generate high performance. According to Naranjo-Valencia, Jiménez-Jiménez, and Sanz-Valle (2011), to facilitate the implication of innovation successfully, organizations should meet requirements of internal behavior and external relation which comply the organizational culture. Further, innovation is considered as a penetrating factor in management strategy and it engrosses a fine tuning to the organization's culture which makes substantial changes in the organizational structure. While the issue of change comes, it brings out the issue of resistant to change as well. In most of the organization, it is common that people are afraid of the need for change. To overcome such situation, enhancement of effective teams, expansion of an employee's role through training and thrive for continuous improvement and empowerment are also critical issues in a comprehensive culture of an organization (Lau & Idris, 2001).

***Value Co-Creation:***

In the recent year, the study and analyzing of the value creation process within industries are mostly subjected to customers' interaction. The meaning of value and the process of value creation are changing from a

product-and-firm-centric view to personalize consumer experience. Market changes from independent target to integrated environment. Within the integrated environment, companies are able to achieve well-developed information by consumer-to-consumer communication. Communication among consumers via internet and technologies related to internet allow consumers to be more informed and knowledgeable in the business and be an active player in generating ideas. All traditional boundaries of industries are disappearing by the emergence of active, informed and connected customer in competitive landscape who are able to be an active co-creator of value (Ramaswamy, 2009). In contrast to “win-win” collaboration, co-creation is a “win more-win more” way to value creation which brings innovation opportunity, business advantage, new sustainable growth, and future competition for the company.

From the management perspective, the DART model developed by Prahalad and Ramaswamy (2004) is of particular interest that describes value co-creation practices. The model includes a creative combination of the building blocks of dialogue, access, risk, and transparency. The customer’s experience would be achieved through their accessibility on firm’s service processes, information, design and quality across the value network. An active consumer has goal of access to experience and not just to get products and services, they directly or indirectly influence what, where, when, and how the products and services get sold. This would be successful if the firm’s data are transparent for the customer on dialogue sessions. The transparency of the company’s information enhances the customer’s willingness to accept the quality of product and services. During these three activities- dialogue, access, and transparency- customers would be more demanding on potential risk related to the consumption, delivery, and producing of particular services and product. In the company-centric view, the company is responsible for all risks associated with the product offering while in consumer-centricity firms should make an obligation to inform the consumers about the potential risks of service and product (Prahalad & Ramaswamy, 2004).

However, the current study proposes two more activities which can include on DART framework namely; follow-up action and value-added service. It is assumed that follow-up action and value-added are the supporting factor in value co-creation. The follow-up action is added to the DART model because it is crucial to investigate whether the firms follow the consumer idea and experience after dialogue session. During the dialogue session firm and consumer share their knowledge and exchange their information. Then, following-up action allows firms to analyze how well they use the consumer experience in new product development. Further, it is important to know whether firm implement consumer innovative ideas and resolve consumer problems regarding existing products. Value added services are very popular within the telecommunication industry, which is beyond the standard voice calls and fax transmissions. It adds value to the standard service offering, encourage the subscribers to use the phone more, and allow the service provider to increase up the average revenue per user. Previously, SMS, and MMS, or data access in mobile phone were considered as value-added services.

#### ***Innovation Value Chain:***

Innovation value chain is the process of knowledge sourcing, transformation and exploitation which is resulted from putting time and effort to generate an idea, convert and diffuse into a market place (Hansen & Birkinshaw, 2007). In the value chain process, knowledge is transformed and exploited among external and internal linkages in an organization to introduce a new product, service, or process. Innovation value chain is a fundamental instrument of growth strategies in an organization to increase the existing market share, compete in the market place, and enter new markets (Gunday et al., 2011). Panesar and Marqueset (2008) considered two steps in the innovation process that manager should consider; front-end planning activities (idea generation, concept development and evaluation, and business analysis) and implementation activities (service development and testing, market testing, commercialization, and post-introduction evaluation). Further, Hansen and Birkinshaw (2007), argued that “rather than reflexively importing innovation best practices, managers should adopt a tailored, end-to-end approach and process for generating, converting, and diffusing ideas”. Consistent with this argument, they developed a comprehensive innovation value chain model which will enable managers find the company’s weaknesses and be more aware to perceive innovation approach. The model is classified into a three-phase process; idea generation (include; in-house sourcing, cross-unit sourcing, and external sourcing), conversion (includes selection and development), and diffusion (includes a company wide spread of the idea). Idea generation can happen inside a unit, across units in a company, or outside the firm. Managers might seek inside of the company’s group to find creative idea or cross unite collaboration to develop new products and services. The external linkage of idea generation might be promoted by the customer feedback, employee, different companies, competitors, universities, investors, suppliers, scientists, and independent entrepreneurs. In service industry, especially, customer involvement is a core source for new idea generation and the weak engagement on customer makes it easy for competitors to imitate service product quickly. Managers, sometimes, have to shut down the most novel idea because of company’s tight budget, strict funding criteria, and traditional thinking. The spread of the idea across the organization determines how the firm is good at diffusing developed ideas. Companies should find the relevant communities in the organization to support and

spread their new product, services, process, and practices across geographic location, customer groups and channels.

***Productive/Unproductive Innovation:***

Bernolak (1997) defines productive innovation as how much and how well a firm can produce from the resources used. He noted that the productivity will increase if firm produce better or more goods from the same resource or if firm produce the same goods from lesser resources. In general, productivity indicates the measurement of how well a firm uses its resources to produce outputs from inputs. Innovation as firm's resource can affect the productivity significantly. An innovative organization can use R&D tasks to involve consumer and marketing communication to commercialization tasks that economically effect on revenue productivity (Aarikka-Stenroos & Sandberg, 2012). According to Segarra-Blasco (2010) innovation activities increase the level of firm's productivity. It usually brings new knowledge within firms and develop new product to the firm and market. Innovation that affects a firm's knowledge capital, increase profitability, increases a firm's turnover growth, are crucial for the fastest growing firms, and plays a leading role in the process of economic growth (Segarra-Blasco, 2010). For that reason, the current study measures productive innovation for existing product performance and new product performance based on four objectives; turnover objectives, profit objectives, market share objectives, and competitive advantage objectives (Ingenbleek et al., 2003). Existing product performance examines these four objectives at the present time and new product development are investigate them since innovative service development during the last 2 years (July 2010- June 2012).

***Research Propositions:***

Research propositions are formulated for existing product development and new product development based on the research framework in Figure 1. To support the proposed propositions, the previous literatures have been considered to justify the relationships among the study variables.

***Service Innovation Management and Relevancy of Market Conditions:***

The pricing practices are critically important factor that management of innovation should understand and adjust it in a market where products and services are transferred to consumers. On managing innovation, firms cannot ignore the prices that bring value not only for a company also for consumers where the high rate of market and technological change have generated new source of consumer value (Nagle et al., 2010). Innovation management recognized to have an important influence on market demand and price conditions (Tidd & Bessant, 2009). Thus:

***Proposition 1:***

The better the implementation of service innovation management in telecommunication industry, the higher the level of pricing practices.

***Relevancy of Market Conditions and Market Performance:***

The firms should set pricing practice based on the firm's objectives on the pricing process, whether the objective is to increase market penetration or gain market share. High prices and high market share are compatible, since those brands having the premium price are observed to be a market share leader (A. Hinterhuber, 2004). To achieve the highest price and market share, setting price should reflect the high value for consumers in the true market sense. Previous studies indicated that the link between companies' pricing practices and strategies with consumer attraction, new markets open up, and the other profits are positive and strong (Hinterhuber, 2004; Ingenbleek et al., 2003). Thus:

***Proposition 2:***

The better the pricing practice in the telecommunication industry, the greater is the level of market performance.

***Mediating Effects of Relevancy to Market Conditions on 'Pricing Practice':***

Since there is a relationship between service innovation management and pricing practice (Nagle et al., 2010; Tidd & Bessant, 2009) and also between pricing practice and market performance (Hinterhuber, 2004; Ingenbleek et al., 2003), pricing practice might have the strongest effect on the relationship between service innovation management and market performance. Pricing practice is described in the study as a market conditions that management of firms should consider seeing whether their product is relevant to the market and consumer. Setting the right price for product development require discipline that allow firms to manage costs and complexity, ensure sustainability and innovation in pricing, improve consistency of price realization, quantify and capture consumer willingness to pay through consumer value pricing, increase consumer orientation, and improve future pricing capabilities (Hinterhuber & Liozu, 2012). Thus:

**Proposition 3:**

The pricing practice mediates the relationship between service innovation management and market performance.

***Service Innovation Management and Market Performance:***

According to the past study, innovation management in service will directly and positively influence the improvement of business performance and growth through improvements in effectiveness, productivity, quality, competitive positioning, and market share (Tidd, Bessant, & Pavitt, 2005). This is in line with previous researchers (Hull, 2004; Hull & Tidd, 2003; Jiménez-Jiménez & Sanz-Valle, 2011; Scott, Haozhe, & Patricia, 2009) who reported that well managed innovation will lead to increased financial and non-financial performance in the organization. Nonfinancial performance is very much improved when service firms implement innovation in their process (Grawe, Chen, & Daugherty, 2009). Technical and non-technical innovation as well as radical and incremental has significantly impacted on the performance of an organization (Damanpour, Szabat, & Evan, 1989; Martínez-Ros & Orfila-Sintes, 2009; Orfila-Sintes, Crespi-Cladera, & Martínez-Ros, 2005).

Based on Barney's (1991) RBV, firms can lead to a sustainable competitive advantage and advance effectiveness and efficiency of performance if they employ the firm's unique resources such as innovation. Innovation allow the firm to build up strategies and put them into operation in order to become competitive and sustainable (Cetindamar & Ulusoy, 2008). Innovation capacities determine the firm's competence to transform inputs to outputs (Grawe et al., 2009). If the firms have highly focused on innovation, they are more successful in new product and service offering as a result greater performance improvement (Eisingerich, Rubera, & Seifert, 2009) and contribute firms to competitive advantages (Chapman, Soosay, & Kandampully, 2003). Therefore, in managing innovation 'best practice', five components of service innovation management including strategy, process, organization, tools, and system are to be hypothesized to affect the market performance. Thus:

**Proposition 4:**

The better the implementation of service innovation management in telecommunication industry, the greater is the level of market performance.

***Moderating Role of Organizational Culture:***

According to Itakura (2011), the multinational and local companies pose different organizational culture that has an effect on firm performance differently. In contextualizing this notion, the present study proposes that organizational culture might have a moderating role in the relationship between service innovation management and market performance in a different way. The innovative behavior among the members of the organization that can lead them to acknowledge innovation as a basic value of the organization (Hartmann, 2006).

Previous studies, however, examined the moderating effect of organizational culture but in different contexts. For example, it has a positive effect on the relationship between critical success factors of lean six sigma with organizational performance (Jayaraman, Kee, & Soh, 2012), and leadership behavior with performance (Yiing & Ahmad, 2009). As there is no study to investigate this moderating role of organizational culture on the relationship between service innovation management and market performance, this study suggests to explain it by RBV developed by Barney (1986). He suggests that respective organizational culture should be valuable, rare, and inimitable. Those who are having these characteristics achieve the sustained competitive advantages resulting in performance enhancement. A strong set of organizational culture which defines the ways of conducting business pushes to sustain with superior performance. The organizational culture also fosters the innovativeness by treating employees, consumers, suppliers and others through a particular set of norms (Barney, 1986). Organizations that have strong cultures ought to have excellent management eventually resulting in improved innovation management. Thus, the study proposes that:

**Proposition 5:**

The organizational culture moderate the relationship between service innovation management and market performance through pricing practice.

***Market Performance and Productive/Un-Productive Innovation:***

The good performance of the market innovation will lead to higher levels of productive innovation (Ingenbleek et al., 2003). Improving organizational productive innovation is continuing to be an important issue. Improvements in product innovation play an essential role in the economic growth process. All types of organization should be productive through utilizing their resources and capabilities in order to achieve goals and stay competitive. Essentially, an innovating organization needs resources (R&D tasks) to involve consumer and marketing communication to commercialization tasks (Aarikka-Stenroos & Sandberg, 2012) that the economic effect on revenue productivity. Thus:

***Proposition 6:***

The better market performance of telecommunication industry, yields productive innovation projects and services.

In the new product development, it is assumed that value co-creation and innovation value chain are two antecedent variables for service innovation management.

***Value Co-Creation and Service Innovation Management:***

Previous study noted that interaction of service provider with service user and other parties is happening within the innovation network (Gallouj & Windrum, 2009). Prahalad and Ramaswamy (2004) argued that consumer interaction with the firm contribute firm in getting new and innovative ideas. Today consumers are often interested and willing to participate in the service process and provide a part of their own service. Through firm-consumer interaction, firms can find the feel of consumer experience which is the most important discontinuities in the competitive landscape and will rise firm's opportunities in different area (Ramaswamy, 2009). The firm's competitive environment enables to focus on the consumer's experience space (Prahalad & Ramaswamy, 2003). Through consumer's experience, firms are able to develop a new product and service as the focus of innovation and competence (Gummesson, 1994; Panesar & Markeset, 2008; J. Tidd et al., 2005).

The linkage between innovation management practice and value co-creation activities are proven in many studies (De Jong & Vermeulen, 2003; Hull, 2003; Lin, Wang, & Yu, 2010; Mudrak et al., 2005; Prahalad & Ramaswamy, 2003; Tidd & Bessant, 2009; Weiss & Legrand, 2011). They emphasize that firms should use consumer involvement in different practices of innovation such as strategy, process, organization, tools, and system to innovate a new service or product. Firms that use consumer involvement in different practice to innovate a new service and product may co-create value among networks of stakeholders (Lin et al., 2010).

Therefore, in the present study, it is assumed that the value co-creation activities (dialogue, follow-up action, access, risk, transparency, and value-added service) have positive relationship with service innovation management practices (strategy, process, organization, tools, and system). Value co-creation is the result of firm's interaction with consumers through DART plus follow-up action and value-added service activities. Thus:

***Proposition 7:***

The more the co-creation activities in telecommunication industry, the greater the level of implementation of service innovation management.

***Innovation Value Chain and Service Innovation Management:***

An innovation process from the introduction of a new product or process to ends represents a series of knowledge and activities by a firm and its partnership. It also represents the beginning of a process of value creation, subject to the firm's own attributes may result in an improvement in the firm's performance (Roper, Du, & Love, 2006). In service development, Panesar and Markeset (2008) argue that two actual steps in the innovation process; front-end planning activities (idea generation, concept development and evaluation, and business analysis) and implementation activities (service development and testing, market testing, commercialization, and post-introduction evaluation) that are required to control by the management. Manager's control in the process of idea generation to diffusion makes firms to be objective in prices, fact driven and methodical (Tidd & Bessant, 2009). Further, Hansen and Birkinshaw (2007) argued that management of innovation should consider the innovation value chain as an end-to-end process not just focus on one part. Therefore, the process of transforming ideas into commercial outputs must be viewed by management of the innovation as an integrated flow of information. Thus:

***Proposition 8:***

The innovation value chain adopted in telecommunication industry, improves the service innovation management.

***Proposed Future Empirical Testing:***

A quantitative research approach will be employed with the structured questionnaire for testing the study framework. The target population consider all the innovative projects of two top innovative company (Pawanchik et al., 2011) in Malaysian telecommunication industry namely; DiGi (multinational company) and Maxis (local). Target samples are total number of innovative projects during the last 2 years (July 2010- June 2012). Unite of analysis are innovative projects of DiGi and Maxis both existing and new innovative projects undertaken by the managers during last 2 years. Respondents are managers employed in different divisions in DiGi and Maxis like marketing, sales and services, operation, product development, and other division related to the innovation activities. The inclusion criteria for a respondent of the present study are: An employee of DiGi and Maxis, a project manager who deals with innovation either in DiGi or Maxis with a minimum of 5 years



experience in the telecommunication service sector, a project manager who has undertaken a minimum of two innovative projects during the last two years (July 2010- June 2012), and a project manager of DiGi and Maxis who has currently dealing with one new innovative project. The measurement of the variables is based on the adoption of previously used and self constructs for some dimensions. Service Innovation Management uses SPOTS model with five dimensions and 31 items developed by Hull (2004); Tidd and Hull (2003); Tidd and Bessant (2009). Market performance includes two variables namely market driven performance with 5-item developed by Ottenbacher (2007) and Sin, et al. (2005). Operational driven performance with two dimensions, service development with 8-item and delivery process with 6 items adopted from Hull and Tidd (2003). Pricing practice includes three dimensions with 15 items adopted from Ingenbleek et al. (2003). Organizational culture has 8 items adapted from Lau and Idris (2001). To measure productive /unproductive innovation for both new and existing product development 4 items from Ingenbleek et al. (2003) are used in the current study. Value co-creation has 6 variables and 40 items which are self developed. The innovation value chain includes three dimensions with 13 items adapted from Hansen and Birkinshaw (2007).

### ***Discussion and Conclusions:***

The framework of the study propose a multidimensional innovation management which comprises all the aspects from the organizational perspective, management perspective, market perspective, and technological perspective. It suggests tasks will be facilitated from the early stage of the innovation process in order to generate innovative products that impacts on the innovation performance. To achieve the satisfactory level of performance, the management should consider the relevancy of market condition through pricing practice. Information from the consumer, competitor, and company cost could be the benchmark to set the right price for innovative products. Having information from these diverse ranges of sources will facilitate the organization to be more interactive for the new product development process. However, organizational culture can also play an important role in managing innovation. The formation of organizational culture is expected to foster innovation management, while they think globally and act locally. The company which broadens its area for knowledge sharing and learning even across the border will have significant competitive advantages over the competitors in the market. Such organizational culture actually removes the barriers to successful innovation management.

The success of innovation is contributed to the factors of a consumer buying a product not only for it necessitate but also for its uniqueness. Uniqueness is such characteristics which allow the organization to have leverage over the competitors and have a strong footprint among the consumers. In this aspect it is important to include consumers in the innovation process which has been a key criterion in fostering innovation. In consumer-firm interaction, consumers are active players in generating new product ideas that make them to be co-creator of value. Accordingly, managers would be able to understand the consumer's experience on different perspective and connect and collaborate with others who are involved in the service providing to solve problems. Since, in value co-creation process consumers always have interaction with other communities, it develops a capability for managers to communicate and build a new knowledge and co-create a better consumer experience. Learning from consumers will enable managers to re-construct an event and become more co-creators through real time intervention. In addition to that sharing is also a driver for the manager to come up with innovative products. Combining the process of learning and sharing of knowledge would make the innovation management more successful. However, before commercializing consumer based ideas, manager should have the capability to select the best ideas, develop them, and test in the niche market within the organizational timeframe and budget.

Innovation needs potential changes in most of the business in today's economy since it has been pointed out to be the main catalyst to the firm's growth. Innovation is the platform which can completely and robustly turn around any organization. As a matter of fact, innovation is a complex issue for developing countries and even developed countries. There are plenty of examples around the globe which portrays a significant number of successful and failed innovative projects. In order to make the innovation successful, it is indeed important to focus on some concerns which are commonly ignored by the business organizations. Continuous overlooking these issues lead to form barriers for innovation. For instance, misconception about innovation, lack of management knowledge and skills, lack of understanding in relevancy of the product to the market condition, and organizational culture differentiation are prominent impediments that affect the low level of innovation. The most important issue of concern is innovation still sometimes considered as more of technology based. This is assumed to be the misconception of the managers who still need to possess effective and adequate management skills. In the same line, even the managers possess the knowledge and skills, there have been seen a gap of comprehending relevancy of market conditions. From a comprehensive view, overall organizational culture would be determined for the successful innovation management. The organizational culture within the organization would facilitate the managers to be more proactive in new product development. Therefore, managing innovation is the most crucial part in a competitive organization due to these noteworthy barriers which usually challenges the effort of innovation. However, to achieve long term strategic goals and create a competitive edge in the business arena, firms should understand how to build a path with the help of innovation

as catalysis. Although it is difficult to analyze the full implication of innovation in business, the conceptual model (Figure 1) proposes organizations to manage innovation in such a way, which is desired by consumers and thus economically bring value to the firm.

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