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Challenges and Effects of Service Innovation

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Abstract:

The unique characteristics of services (heterogeneity, inseparability, non-storability, etc.) make service innovation more difficult and challenging than product innovation. Services, in comparison to products, are more information intensive. Service dominant logic highlights the challenges of service innovation at business level only. However, challenges of service innovation extend beyond business level and can be found at policy level, industry level and at firm level as well. Further, it is important for the marketers to understand the effect service innovation has on firms' performance and on the behaviour of customers. Hence, effects of service innovation at the firm level, market level and at the customer level are also discussed in the paper by reviewing the studies conducted in the related subject matter. This paper also provides insights for future research in the topic.

1. Introduction

Service innovation is designing of new concepts, or using new technologies, devising new client interface channels or new delivery systems. Success of service innovation requires the support of top management and proper cooperation and coordination among all the members of the concerned firm. Achieving the antecedents of service innovation is in itself a big challenge for the firm. The firm undertaking service innovation can face challenges at policy level, industry level and firm level. Also, literature highlights the effects service innovation has at the firm, market and customer level and how it affects customers' satisfaction, brand perception, customer loyalty, etc.

2. Objectives of Study

- To study the challenges of service innovation at the industry, policy and firm level
- To study the effects of service innovation at firm, market and customer level

2.1. Service Innovation Challenges at the Policy Level

At the policy level, challenges can originate from either market failures (which results in the failure of innovation system) or from systemic failures. Both are different but partly overlapping (Rubalcaba, Gallego, & Den Hertog, 2010).

2.1.1. Market Failures

The first market failure relates to **market power** (Van Cruysen & Hollanders, 2008). Competition gets reduced when one company gains high level of market power. Companies are forced to innovate if competition is high and hence reduced competition reduces the level of service innovation. It therefore becomes vital to ensure sound competition through regulation. However, the relationship between innovation and competition is debatable according to past researches. Researchers identified that in some services, concentration has resulted in limited incentives for innovation (retail) while, in others, the reason for restricted innovation lies in client-specific services. Therefore, the issue of market failure need to be studied not only from the perspective of competition but also from the perspective of structural characteristics of market which includes fragmentation, immobility, and concentration that reduces incentives to innovate (Pedersen & Nysveen, 2010).

Second market failure as reflected in the literature is **externalities** both positive and negative which relates to business services like telecom system, accounting services, financial systems, upholding trust in capital markets, etc. Regulatory authorities should try and stimulate innovation through positive externalities, however the issue of lack of IPR for services still persists which imposes restrictions on innovation as it is difficult to protect, retain and value them. Intangible and heterogeneous nature of services can lead to information asymmetry and non-transparency which further reduces innovation. Thus, it can be said that market failures include challenges of lack of IPRs, resource immobility, fragmentation, competition, externalities and information asymmetry challenges.

2.1.2. Systemic Failures

Systemic failures include five types of failures as reflected in the literature which includes dependency, capability, institutional, network and infrastructural failures.

Dependency failure (Van Cruysen & Hollanders, 2008) is an inertia failure that prevents companies to explore new possibilities be it new opportunities, new solutions, new segments, new systems and relationships, etc. and this is because of high risk and uncertainty involved in exploring those new possibilities. For reducing this inertia, companies can resort to science parks, academic spin-off schemes, venture capital, public procurement incentives, etc.

Capability failures pertain to the level of education and competency of service sectors which can either support or hinder service innovation. This failure can be reduced by policies that aim at strengthening education, competence, skills and training.

The main focus of regulatory authorities is on securing competition rather than stimulating innovation on the assumption that competition drives innovation and this excessive focus on securing competition gives rise to **institutional failures**. Another reason for institutional failures is lack of understanding of service innovation challenges among the political and regulatory institutions along with the lack of willingness to take the steps necessary to stimulate innovation.

Network failure arises when companies fail to find unique and different directions necessary for development or when they do not have access to cluster consisting of complementary companies and simply focus on clusters located geographically close to the location of the company. Lastly, **infrastructural failures** arise when infrastructural investments are not properly coordinated among the potential stakeholders (Pedersen & Nysveen, 2010).

2.2. Service Innovation Challenges at the Industry Level

2.2.1. Services Heterogeneity

Service heterogeneity can act as a barrier for service innovation. Services vary in their fundamental processes, knowledge intensity (requirement for skilled and professional workforce) and market relations (company serving customers or other companies or public sector) (Miles, Patterns of Innovation in Service Industries, 2008). Some services focus on physical artifacts like transport, repairs, etc. while some on people (health, social welfare) and symbols (finance, telecom). Services vary in terms of their nature, quality standards, market transparency, etc. Hence, this heterogeneous nature of services makes it difficult to implement general policy instruments to the whole sector in uniformity.

2.2.2. Measuring Services R&D

The measures and instruments used for measuring product innovation may not be suitable for measuring service innovation as well. Very few indicators and methodologies exist in literature to measure service innovation (Van Cruysen & Hollanders, 2008) which makes it very difficult for the service sectors to analyse and measure in novation in their own sector. Thus, this situation necessitates improved statistics base and implementation of efficient strategies in the whole innovation system.

2.2.3. Market Factors

Increase in demand motivates companies to offer innovative services because they see potential for innovation in future larger markets (De Jong, Bruins, Dolfsma, & Meijaard, 2003). Service markets are characterised by direct and indirect network effects. Examples include mobile services, social media internet services, infrastructural services, markets for online content, etc. in indirect effect category and financial, telecommunication and social media services in direct effect category. For indirect effect categories, market pull or demand pull is critical to reach mass. Market growth stimulates innovation and innovations can also stimulate market growth. Thus, challenge here remains stimulating innovation to stimulate market growth (Pedersen & Nysveen, 2010).

2.2.4. Taking Advantage of KIBS and KISA

Knowledge intensive business services (KIBS) and Knowledge intensive service activities (KISA) can stimulate innovation through transfer of tacit knowledge and provision of explicit knowledge (Miles, Kastrinos, Den Hertog, Flanagan, & Huntink, 1995). The main challenge remains in accessing and making available the relevant KIBS.

2.3. Service Innovation Challenges at the Business Level

Challenges at business level imply challenges at the firm level and firm network levels. Potential challenges included here pertains to service innovation process, antecedents of service innovation, typologies, effects of service innovation and service innovation method challenges. These are explained as follows:

2.3.1. The Service Innovation Process

Unlike product innovation, the process of service innovation is “more ad-hoc, less linear and less coordinated” (Pedersen & Nysveen, 2010) and less formalized. It is often treated as a trial and error process as prototypes do not exist. It is also very difficult to patent and protect service innovation which increases imitation possibilities thereby reducing competitive advantage of firms. Not only this, service innovations are difficult to communicate than tangible innovations. Also, service innovation is implemented and stimulated by the leaders of the organizations whereas front line employees are actually the ones who experience the need for innovation. In order to overcome this challenge, service innovation process need to be more formalized as formalization may improve service innovation (De Jong, Bruins, Dolfsma, & Meijaard, 2003).

2.3.2. Antecedents of Service Innovation

De Jong et al. (2003) discussed three broad categories of antecedents namely success factors which are directly related to innovation process, success factors which creates a supportive innovation climate and finally the external conditions affecting success of innovation. Attaining these antecedents is in itself a big challenging task. Keeping in view the importance of front line employees in success of innovation, it is important that front line employees should be a part of NSD process and should be given innovative roles to play in the process like that of project leader, decision maker, ambassador, etc. for better organization and coordination. Another challenge to note is the lack of experienced and qualified staff to undertake service innovation. In addition to this, rules and procedures providing guidelines for effective service innovation are also important along with job rotation, multifunctional teams, internal co-operation, reward systems, culture and leadership, management support, availability of resources, networking etc.

2.3.3. Service Innovation Typologies

One of the mostly referred typology of service innovation is presented by Den Hertog (2000) which is known as the four dimensional model of service innovation. In his model, he categorized service innovation into four dimensions namely, service concept, client interface, service delivery system and lastly technology. This model helps in practical development of new services and policies for innovation. According to Hertog, service innovation is a combination of these dimensions however the importance of different dimensions and their linkages vary from services to services, firms to firms and from innovations to innovations. This model is represented in the figure below:

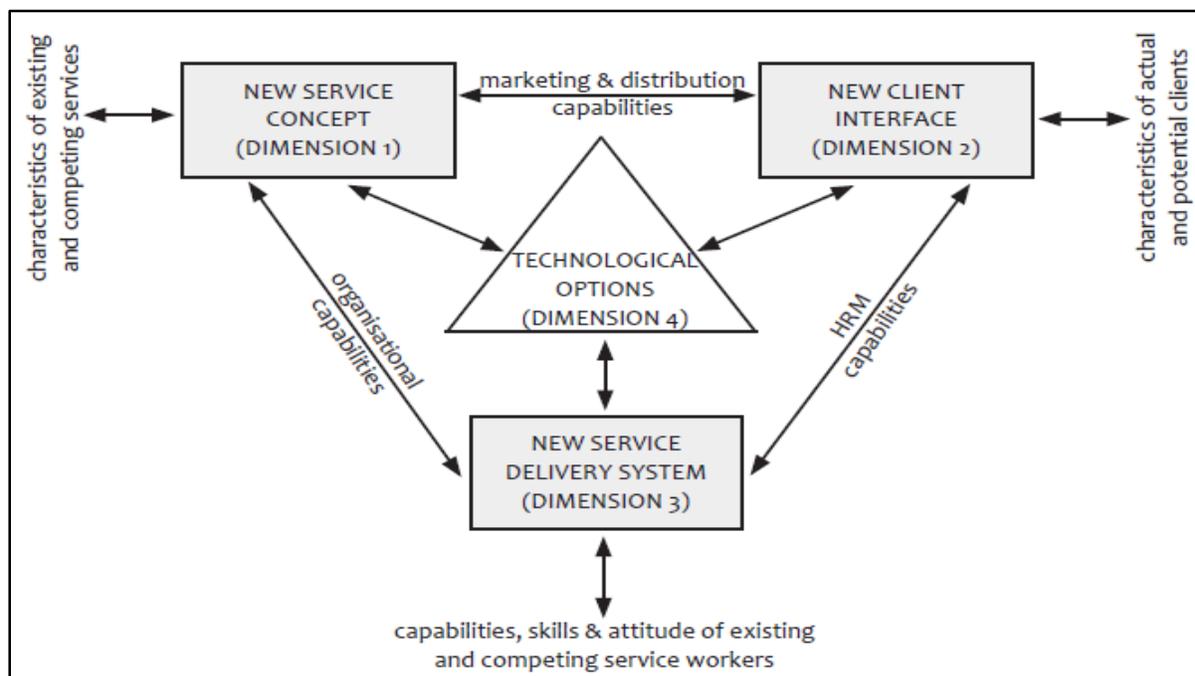


Figure 1
(Derived from Den Hertog, 2000)

Service concept is a new business proposition or a new service in a particular market. Client interface is the way in which services are delivered to its users. Service delivery system is innovation in back office systems which is not directly visible to the users but whose effects can be observed in the quality of the offered service like increased speed of service delivery. Last typology relates to technology which includes use of internet to deliver digital services.

The main challenge underlying service innovation typology is in managing and systematically organising different types of innovation to ensure success of innovation (Pedersen P. , 2005).

2.3.4. Methodologies for Service Innovation

Methodologies available for product innovation can be applied to some service innovations as well in the exact manner but some service innovations requires modifications in product innovation methodologies to make them adaptable for service innovations due to the inherent characteristics of services.

2.4. Effects of Service Innovation

Past researches reveals the effects of service innovation at the firm level and at the market level (De Jong, Bruins, Dolfsma, & Meijaard, 2003).

2.4.1. Effects at the Firm Level

Service innovation can have both financial and non-financial effects. Past literature reveals that service innovation can provide financial benefits, increased customer value and strategic success (De Jong, Bruins, Dolfsma, & Meijaard, 2003).

Service innovation is found to influence financial results positively i.e. revenue and profits are found to be positively correlated with service innovation. However, it is very difficult to isolate the effects of service innovation on financial performance than the effects of tangible innovations. Sales growth is not only the result of lower prices, but design and quality as well. And this brings financial benefits to the firm.

Service innovation leads to increased customer satisfaction and loyalty which is relationship enhancement. It not only includes direct attributes of service offerings but also the image of the supplier, relationship between customer and supplier, etc. Service innovation is transferring non-physical attributes to better satisfy customers and this will eventually influence financial performance because of repeat purchases by the customer.

Effects of service innovation are also reflected through strategic success i.e. firms' position in the market as a technology leader, interesting brand, modern brand, future oriented company, etc. These strategic effects can be transferred into financial results overtime.

2.4.2. Effects at the Market Level

Service innovation can affect supply conditions, trade mechanisms and demand conditions as shown in the figure below:

Potential impact of innovation in services at market level		
<i>Supply</i>	<i>Trade mechanism</i>	<i>Demand</i>
- Seller-power distribution	- Price and quality	- Buyer-power distribution
- Entry and exit	- Transparency	- Entry and exit
- Dual/linked markets	- Transaction costs	- Substitutes
- Value chain	- Collusion	

Source: EIM, 2002.

Table 1

Service innovation, both radical and incremental, can change the competitive power of major players in the market. As a result, old firms can exit and new can enter the industry. It can also create or disconnect dual and otherwise linked markets and can alter the entire supply chain or value chain of the organization.

Service innovation is also known to impact market prices and quality including their transparency. It can also reduce transaction costs by way of ICT based services.

Service innovation can also cause shift in demand mechanisms and as a result can change consumers' behavioural and consumption patterns. Role of IT cannot be under looked in this respect. E-mail, SMS, MMS have created brand new markets for the firms (Pedersen & Nysveen, 2010). However, the challenge remains that service providers cannot control the behavioural changes arising out of service innovation.

2.4.3. Effects at the Customer Level

Customers' desire and demand innovative products and services and service firms are striving to provide novel features in their offerings. Management should implement those innovations which are not only desired by the customers but are also economically beneficial to the firm (Reid & Sandler, 1992).

Operational constraints to implement all innovative service offerings make examining customers preferences and aligning them with operational strategy necessary. Knowledge of customers' preferences will enable management to offer firm beneficial innovative offerings that will actually impact customers' choices (Victorino, Verma, Plaschka, & Dev, 2005).

Victorino et al. (2005) researched the impact of service innovation on customers' choices with reference to the hospitality industry and they concluded that service innovation has a positive impact on customers' choices and service innovation increases the revenue of the firms. They further concluded in their research that the 'type of hotel' has largest impact on choices of all types of travellers. Also, service innovation has greater impact on customers who tend to search economy hotels than the customers desiring midrange or upscale hotels. Technological innovations and customization have added to the impact of service innovation.

Ching-shu su (2010) conducted an empirical study to explore the effect of service innovation in influencing customers' behavioural intention and experience with reference to ethnic restaurants and found its effect as significant. He also concluded support for the mediating effect that customer experience has on service innovation and behavioural intention.

Study conducted by Khedkar (2015) also suggested that service innovation positively impacts business and influences customer satisfaction in his study of hotel and travel industry. He concluded that customized services, internet, IT related facilities, mini bar, coffee maker, child care facilities, flexible check-in facilities etc. positively influences customers' satisfaction.

2.5. Conclusion

To conclude, it can be said service innovation is a challenging task as the firm undertaking it faces several challenges at policy, industry and firm level like market failures, systemic failures, services heterogeneity, challenges in measuring services R&D, etc. Even after being such a challenging task, service innovation has an important impact on customers' choices, their satisfaction level with the services and service provider, their brand loyalty, value perception, etc. Hence, it becomes necessary to study the impact service innovation has on customers buying and consumption patterns, their choices and satisfaction levels thereby leaving ample scope for further research in service innovation field.

2.6. Directions for Future Research

Although lot of empirical studies have been conducted to understand the impact of service innovation on customers' choices and firms' performance but largely these studies were restricted to hotel industry only. Therefore, empirical researches can be conducted to study impact of service innovation on customers' choices and firms' performance in industries other than hotels like restaurants, travel and tourism telecommunication industry, banking industry, etc.

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