Service Innovation: A Knowledge-based Approach

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Abstract: Service innovation is generally conceptualized as a complex construct, the emergence of which is perceived as heterogeneous, situated and path-dependent on hard-to-replicate intra- and inter-organizational knowledge resources and processes. Due to the multidimensional nature of service innovation, studies in service innovation theory have generally explored the service innovation process by applying the capabilities approach, which focuses on firm-level routines for knowledge reconfiguration and service innovation, or by applying a sociological orientation, where emphasis is placed on investigating the role of human actors and human interactions in knowledge reconfiguration and service innovation. Building on these two approaches, this paper proposes a conceptual model on the service innovation process grounded in a knowledge-based approach. Emphasis in this model is placed on knowledge as a key resource and input to the service innovation process, while through bridging firm-level capabilities with individual-level processes, the multi-levels through which knowledge reconfiguration and service innovation may occur are illustrated.

1 INTRODUCTION

The literature on service innovation theory characterizes service innovation as a transformative and multidimensional construct, capable of evolving through numerous intra- and inter-organizational stimuli and knowledge acquisition and sharing activities (Chae, 2012; Lusch & Nambisian, 2015; Sundbo, 1997). Within the service innovation process, a core resource which is generally acknowledged as necessary for the development of service innovation is knowledge (Miles, 2008; Nonaka & Takeuchi, 1995, 2019; Peschl & Fundneider, 2014), with the service innovation process generally illustrated as a series of interwoven and nuanced knowledge processes (Peschl & Fundneider, 2014), and knowledge creation activities framed as pivotal to the innovation process and generally reflected in new services and organizational systems (Nonaka & Takeuchi, 1995, 2019). Although “knowledge creation generates innovation” (Nonaka & Takeuchi, 2019, p. 20), the literature on service innovation theory falls short of providing a comprehensive overview of the distinct micro-foundation knowledge reconfiguration processes deployed in service organizations to generate innovation (Randhawa & Scerri, 2015), while research aimed at investigating service innovation management in complex and dynamic environments remains limited (Carlborg et al., 2014). Similarly, the concept of service innovation has been criticized as ambiguous, ill-defined and particularly complex to conceptualize (Witell et al., 2016).

To overcome these gaps in the literature and to offer a more holistic perspective of the service innovation process, this paper proposes a conceptual model and a framework based on knowledge for the service innovation process.

The objective of the framework is twofold. First, it investigates individual-level and firm-level processes involved in knowledge generation and knowledge reconfiguration processes and how these lead to service innovation. Second, it explores the inter-linkages between the micro-level and firm-level processes and how these together contribute to service innovation.

The proposed model and framework are currently being tested in the context of the accommodation sector in Malta specifically, boutique hotels, where a methodology grounded in strategy as practice is applied. To investigate this model, semi-structured interviews are being conducted with boutique hotel owners, managers and employees to investigate how innovation emerges through knowledge processes, from both a micro-foundation and firm-level perspective. In addition, focus groups with customers are being held to explore whether and how the knowledge generated and communicated by customers is applied in the service innovation process.
2 THEORETICAL BACKGROUND

2.1 Service Innovation

The literature discussing service innovation generally portrays the innovation process as dynamic and interactive, i.e., it is dependent on the interactions and actions of multiple human actors (Chae, 2012). Simultaneously, service innovation is conceptualized as interwoven in service ecosystems, where actors continually exchange and integrate resources, leading to the co-creation of new value (Lusch & Nambisan, 2015). For example, Saxena’s (2005) research of 45 tourism stakeholders in the Peak District National Park, United Kingdom, revealed that networks led to collective learning and acted as a hub for knowledge and innovation. Within service ecosystems, all market actors, ranging from customers, suppliers, to competitors, represent potential avenues for the co-production of innovation, which occurs through processes for knowledge integration and combination (Lusch & Nambisan, 2015). For example, Nieves and Díaz-Meneses’s (2018) research on hotels in the Canary Islands, Spain, concluded that incremental innovations were positively influenced by external knowledge sources, such as local organizations operating in different economic sectors, non-local tourism providers, general and institutional information sources and customers.

Simultaneously, the evolution of service innovation may be systematic, unsystematic or a combination of both (Song et al., 2009; Toivonen & Tuominen, 2009), with systematic innovation developing through project and product teams, an organization’s strategy and intentional efforts to generate novel solutions, and unsystematic innovation developing through open innovation, the use of external networks and search-and-learning processes (Coombs & Miles, 2000; Song et al., 2009; Sundbo, 1997; Toivonen & Tuminen, 2009).

In addition, the degree of novelty invoked by a service innovation may range from radical to incremental (Chae, 2012; Goodman & Dingli, 2017), while it may occur in four dimensions, including service concept, client interface innovation, service delivery system innovation and technology innovation (Miles, 2008).

Due to service innovation’s complex and multidimensional nature, understanding the service innovation process has become a foremost priority for service organizations seeking to react proactively to market changes (Rubalcaba et al., 2012).

Although a significant proportion of the literature on service innovation focuses on defining and characterizing the different dimensions of service innovation (see, for example, Chae, 2012; Sundbo, 1997), this paper grounds itself in a knowledge-based approach towards conceptualizing the service innovation process.

2.2 Knowledge Resources and Service Innovation

As previously discussed, service innovation is a process which is contingent on novel combinations and re-combinations of knowledge resources from a variety of intra- and inter-organizational actors (Lusch & Nambisan, 2015).

From this perspective, service innovation may be perceived to consist of “highly complex knowledge processes” (Peschl & Fundneider, 2014, p. 347), where, through the development of new knowledge, organizations are able to effectively react to market changes and shape their future.

From a (dynamic) capabilities perspective, the “complex knowledge processes” referred to by Peschl and Fundneider (2014) may be disaggregated into three core firm-level capabilities. These are absorptive capacity (Cohen & Levinthal, 1990), combinative capabilities (Kogut & Zander, 1992) and knowledge management capabilities (Nielsen, 2006).

Absorptive capacity refers to the capacity of organizations to acknowledge the value of external information, assimilate it and exploit it to yield commercial gains (Cohen & Levinthal, 1990). It contributes towards enhanced performance improvements and competitive advantages in hotels (Pongsathornwiwat et al., 2019). Similarly, it has been associated with enhanced product, process and marketing innovations in hotels (Nieves et al., 2014).

Combinative capabilities mirror capacities aimed at creating new knowledge (Kogut & Zander, 1992). They have been associated with enhanced competitiveness and service innovations in hotels (Santos-Vijande et al., 2018), while interactions between employees in a spa resort in Sweden were found to lead to new ideas and innovation opportunities (Engen & Magnusson, 2015).

Knowledge management capabilities, which refer to processes associated with knowledge aggregation and profiteering (Nielsen, 2006), have been found to contribute towards knowledge creation activities, enhanced performance, consistent service quality and the acquisition of competitive advantages in hotels (Baytok et al., 2014; Salem, 2014).
The literature which views service innovation from a capabilities perspective has established strong grounds for the existence of a positive relationship between knowledge resources and service innovation; however, the majority of the studies in this field have generally emphasized macro-level or firm-level phenomena (Jarzabkowski, 2005). As a result, Foss and Linder (2019) have labelled ‘capabilities’ to represent a terminology with elusive micro-foundations, whilst stating that “if a manager does not understand how the capabilities of the firm she manages somehow emerge from individual-level skills, actions, and so on, it is not clear how she can manage capabilities, including developing and leveraging such capabilities” (p. 1).

The micro-foundations referred to in this paper reflect the unique processes which undergird firm-level; 1) sensing capabilities, 2) knowledge development capabilities, 3) integration and coordination capabilities, and 4) seizing capabilities. Therefore, micro-foundations reflect processes at the individual-level used by organizational personnel to reconfigure knowledge resources and lead to innovation. In turn, these micro-foundation processes, if systemized through, for example, institutionalization procedures, represent the basis upon which firm-level capabilities for service innovation develop.

In line with Foss and Linder’s (2019) rationale, the following section proposes a multi-level knowledge-based model and framework of the service innovation process. The objective of the proposed model is to present a comprehensive representation of how different micro-foundation knowledge reconfiguration processes and firm-level capabilities may contribute towards the development of service innovation.

3 PROPOSAL

This section presents the knowledge-based model of service innovation, illustrated in Figure 1 below. As a starting point to the discussion in this section, the micro-foundation processes service organizations are conceptualized to apply to develop service innovation are critically discussed. This is followed by a brief overview of the role of institutionalization practices and firm-level capabilities in the innovation process.

3.1 Micro-foundation Processes for Knowledge Reconfiguration and Service Innovation

In line with Figure 1 below, micro-foundation processes for knowledge reconfiguration are subdivided into four phases, these are:

- Phase 1: Discovery
- Phase 2: Idea generation
- Phase 3: Knowledge coordination
- Phase 4: Implementation

Figure 1: Knowledge-based mode of service innovation.
At a micro-foundation level, each phase is comprised of several knowledge-based processes. It is relevant to note that, while Figure 1 outlines a linear knowledge-based processes, service innovation may develop in a linear or non-linear manner, and it may occur through different paths, i.e., organizations need not apply all the knowledge-based processes outlined in Figure 1 to develop service innovation.

Thus, Figure 1 acts as a basis for the conceptualization of service innovation from a knowledge-based and holistic perspective.

Phase 1: Discovery

Phase 1, Discovery, illustrates two processes individuals within organizations are conceptualized to apply in order to recognize innovation opportunities. These are:

Internal Sensing – internal sensing occurs once organizational personnel immerse themselves in tacit knowledge, leading to the development of novel thoughts, hypothesis, concepts and judgements (Nonaka & Toyama, 2005; Polanyi, 1966/2009). For example, Engen and Magusson’s (2018) research of front-line employees in service organizations revealed that employees identified avenues for innovation as they were conducting their ‘ordinary’ work, or through, for example, reporting problems. Once novel thoughts are generated, if these are externalized through interactive processes, such as, for example, socialization activities, accumulated tacit knowledge may lead to the development of new knowledge (Nonaka, 1994; Nonaka et al., 2000).

External Sensing – external sensing refers to the acquisition of explicit or tacit data, information and knowledge from an organization’s external environment through various forms of interaction, for example, informal meetings with customers and stakeholders, email, electronic media, patents and document specifications (Nonaka et al., 2000; Smith, 2001). For example, Del Vecchio et al.’s (2018) longitudinal case study on the impacts of big data collected via social media at an event in Bari, Italy, revealed that big data enabled tourism organizations to identify innovation opportunities through tracking customer satisfaction levels and harvesting data on the tourism experience.

Phase 2: Idea Generation

Phase 2, Idea Generation, illustrates three processes through which new knowledge develops in service organizations. These are:

Externalization of Tacit Knowledge - following internal and external sensing processes, organizational personnel may choose to externalize their subjective tacit knowledge through interactive processes, such as the sharing of knowledge with colleagues. Once knowledge sharing occurs, this leads to a recursive cycle of debate, conflicting perspectives and the development of new knowledge (Nonaka & Toyama, 2005). For example, Engen and Magusson’s (2015) study, which explored the process of creativity in front-line employees in three units at a large hotel concluded that co-worker support and feedback from management stimulated additional idea creation and development. According to the authors “it seemed essential in many ways that the unit manager listened and gave feedback. These practices appeared to spark the process of creating ideals while also providing a mutual understanding of the acceptance or rejection of the ideas” (Engen & Magusson, 2015, p. 315).

Knowledge Creation - while knowledge creation may occur at any point in the knowledge-based model of service innovation, it occurs once organizational personnel have externalized their tacit knowledge, leading to combinations and re-combinations of knowledge resources by way of dialogue and interactions.

Knowledge Leverage - knowledge leverage occurs when organizational personnel purposefully exploit existing knowledge bases present within an organization through, for example, coupling divergent knowledge sets or through combing explicit forms of knowledge, mirroring updated specifications and organizational procedures (Nonaka et al.,1996; Nonaka & Toyama, 2005). For example, Baytok et al.’s (2014) analysis of middle and senior managers in 5-star hotels in Turkey revealed that knowledge management processes were used to guide collaboration between different departments in order to effectively create new knowledge and ideas for thermal hotels.

Knowledge Capture - Knowledge Capture represents the codification of tacit knowledge, leading to the refinement of ideas or the creation of new knowledge (Nonaka et al., 1996).

Phase 3: Knowledge Coordination

Phase 3, Knowledge Coordination, refers to two processes organizational personnel may implement to ensure that innovation activities are viable, including
an analysis of the skills required for the task at hand, and the sharing of new knowledge.

Knowledge Assembly - once knowledge has been codified, action may be taken to assemble the knowledge bases required to deploy the innovation (Nielsen, 2006). For example, Wang et al.’s (2018) analysis of a Spa and Resort in Taiwan revealed that the hotel required the knowledge and collaborative efforts of the hotel’s artistic director, employees, artists, playwrights and customers in order to develop and choreograph a new service, consisting of a theatrical performance for customers.

Knowledge Sharing - knowledge sharing occurs once codified knowledge regarding the innovation is distributed to personnel who are generally, but not necessarily, within the organization (Nielsen, 2006). For example, Hoarau’s (2014) research on Icelandic nature-based tourism organizations revealed that one of the sampled organizations spread new knowledge within the organization by way of presentations, newsletters and research papers, while another organization disseminated new knowledge through handbooks and informal gatherings.

Phase 4: Implementation

Phase 4, Implementation, represents the processes used when integrating innovation into an organization’s infrastructure.

Knowledge Use - This occurs once captured knowledge is exploited, i.e., implemented, generally (but not necessarily) within the organization’s infrastructure or service delivery processes (Nielsen, 2006).

Innovation - once new knowledge is implemented, it may result in innovation in the service concept, client interface, service delivery system and technology (Miles, 2008).

3.2 Routinization of Service Innovation: Institutionalization Practices and Firm-level Capabilities

In line with Figure 1 above, the conceptual model proposed in this paper positions service innovation as a construct which may develop: 1) unsystematically and in a non-linear manner by way of multiple combinations of impromptu micro-foundation processes, or 2) systematically by way of firm-level routines.

Thus, if the micro-foundation processes discussed in Section 3.1 are routinized through institutionalization practices, then this gives rise to firm-level capabilities for systematic knowledge reconfiguration and innovation.

Through institutionalization practices, which refer to documents and tools used to establish routinized activities, an organization develops a firm-level ‘memory’, the output of which generally results in organizational personnel establishing habitual activities and operational consistency (Helfat et al., 2007; Nelson & Winter, 1982; Zollo & Winter, 2002). Micro-foundation activities may transform into firm-level routines. This may lead to the development of four knowledge reconfiguration capabilities, these are:

1. Sensing capabilities
2. Knowledge development capabilities
3. Integrating and coordinating capabilities
4. Seizing capabilities

The four capabilities outlined above directly build on the micro-foundation processes discussed in Section 3.1, however, these processes are generally recursive and stable, meaning that innovation is likely to occur in a systematic and methodical manner.

The objective of Figure 1 above is to present a holistic illustration of the service innovation process from a knowledge-based perspective that is capable of accounting for innovations which may occur through the individual-level actions and interactions of the human actors within an organization, and through the development of firm-level capabilities for the reconfiguration of knowledge resources and service innovation.

4 CONCLUSION

Service innovation generally evolves through combinations and re-combinations of knowledge resources from intra- and inter-organizational actors (Sundbo, 1997; Toivonen & Tuominen, 2009), with service innovation theory supporting this perspective (Lusch & Nambisan, 2015; Rubalcaba et al., 2012). Building on this orientation towards service innovation theory, this paper presented a holistic model of the service innovation process from a knowledge-based perspective.
The proposed model places emphasis on the multiple processes through which knowledge may be reconfigured to emerge as service innovation.

Although the proposed model is being tested in the context of the boutique hotel sector in Malta, future research could focus on investigating the model in different contexts, e.g., in educational organizations, telecoms, hospitals or software development organizations.

In addition, future research may focus on investigating whether different types of service organizations exhibit comparative differences when implementing micro-foundation processes and firm-level capabilities.

REFERENCES


