The concept of on-going interactions in co-design: Insights from three different disciplines

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Abstract

Co-design with the customer is identified as an effective opportunity for service design and service innovation. By reviewing the different streams of marketing, design and service innovation with emphasis on user involvement, this paper proposes a multi-disciplinary framework for mutual learning and co-design. It is suggested that the firm can use on-going interactions with customers during the value generating process to create a space for mutual learning and co-design in which the customer becomes an integrated part of the innovation and design process not only as an informant but also as a co-designer.

KEYWORDS: co-design, service logic, service design, service innovation, concept of interaction

Introduction

To date service design is understood as a collaborative and multidisciplinary activity that crosses marketing, operations management, human resources, technology and design disciplines (Kimbell & Seidel, 2008; Ojasalo, 2009a; Sangiorgi, 2009; Ostrom et al., 2010). Similarly service innovation is viewed as cross-linking and multidimensional in its characteristics rather than restricted to technological innovation and the R&D department (den Hertog & de Jong, 2007; den Hertog et al., 2010). In this interactive and crosslinking context, the awareness of user integration as a co-designer rather than merely as an informant is increasingly discussed as an effective option for service design and innovation (Magnusson et al., 2003; Kristensson et al., 2008; Ojasalo, 2009b). However, there is still lack of integrated research around service design and service innovation. This lack is attributed to two reasons: (1) the historic focus and long tradition of physical product design (Ostrom et al., 2010) and (2) academic silos cause gaps between academic disciplines such as information technology, marketing, operations management, human resources and engineering (IfM & IBM, 2008).

Apart from the lack of research in the areas of service design and innovation, the adoption of service logic substantially changed the conceptualisation and operationalization of services (Vargo & Lusch, 2004a; 2008b). Service logic focuses on how value is created by the customer and how the firm can support the value generating process as value facilitator or value co-creator (Grönroos, 2008). Thus, the traditional distinction between services and goods is no longer relevant for design and innovation. Instead of developing products and systems that maximize the exchange of value, the focus of service design and innovation lies on value-in-use. Thereby, the firm's on-going interactions with the customer enable possibilities not only for co-creation of value but also for co-design.

To gain a better understanding of how co-design with the customer may be integrated into service practices, processes and systems, this paper takes an interdisciplinary perspective and reviews the different streams of marketing, design and service innovation with focus on user involvement. We, thereby, identify commonalities between service design and innovation to show how the knowledge of non-designers can be utilized for co-design. Based on this intuition we suggest a framework, which proposes that firms should use the interactions with the customer during the value generating process to generate more innovative solutions. The firm in its role as value co-creator offers a space for mutual learning, which enables the utilization of non-designer knowledge for co-design.

Early studies on customer involvement in service innovation have emerged during the last decade, however future research is still required particularly in regards to (1) the involvement of customers in collaborative innovation processes, (2) the development of collaborative relationships, (3) the stimulation of new thinking, creativity and service innovation, and (4) the alignment of organization structure, customer and supplier relationships with service innovation (Alam, 2002; Matthing et al., 2006; Ostrom et al., 2010). Similarly in the context of service design, Ostrom et al. (2010, p.17) noted a lack of scholarly and managerial understanding of "Integrating 'design thinking' into service practices, processes, and systems" and "Learning systematically about how to best engage customers and employees in collaborative service design". This conceptual paper takes a first step by providing a multi-disciplinary view of co-design to facilitate a cohesive understanding of the origin and application of co-design as well as to identify avenues for future research.

Literature review

We suggest three streams that shaped service design and service innovation towards a collaborative and multidisciplinary activity: (1) service marketing particularly since the paradigm shift from goods-dominant logic to service-logic or service-dominant logic (Grönroos, 2006a; Vargo & Lusch, 2008b); (2) design and the changing landscape of human-centred design towards user-centred design and co-design (Sanders & Stappers, 2008); and (3) new service development (NSD) and service innovation with focus on user involvement (Alam, 2002; Ojasalo, 2009a). The following review describes how these academic strands share a common ground in viewing co-design as a central part of service design.

The transition to service logic

The emergence of service logic in marketing had a significant impact on the understanding of how firms interact with their customers. Traditionally, marketing was described as one organizational function with value-in-exchange being the central concept (Hunt, 1976). By contrast, service logic understands marketing as a customer focus that permeates organizational functions and value-in-use perspective as the key construct (Grönroos, 2006b). In the following, we describe how the shift towards a new marketing understanding opens opportunities for mutual learning experiences with the customer.

In its traditional role, marketing acts as a bridge between production and consumption: the firm provides its customers with goods as input resources while marketing as an organizational function creates, communicates and delivers value to customers. Thereby, the 4Ps namely product, price, promotion and place optimise the value-of-exchange. During the last decade, however, Grönroos (2006a; 2006b; 2008) as well as Vargo and Lusch (2004a; 2004b; 2008a) have proposed service logic as the dominant logic in marketing. According to Vargo and Lusch (2008b) and Grönroos (2006a; 2008) the adoption of service logic as the dominant logic led to two fundamental shifts in marketing: (1) the shift in focusing on resources rather than products with particular emphasis on operant resources and resource integration, and (2) the shift toward value-in-use rather than value-in-exchange. From this perspective it was noted that marketing should be much more concerned with dealing with the interactions in a dynamic environment where the value of resources is not given but needs to be developed.

Building on resource-based view, service-dominant logic distinguishes between operand and operant resources (Vargo & Lusch, 2004a). Operand resources describe resources on which an act is performed to produce an effect; operant resources on the other hand are defined as invisible, intangible, dynamic and infinite resources that act on operand or other operant resources (Constantin & Lusch, 1994; Vargo & Lusch, 2004a). While traditional marketing models treat customers as operand resources that can be segmented, targeted and manipulated by adjusting the marketing mix, service-dominant logic sees customers as operant resources that are endogenous to the value-creation process (Vargo & Lusch, 2008b).

The operant resource view describes co-creation of value through resource integration instead of resource depletion (Vargo & Lusch, 2008b). According to service logic, firms and customers mutually create value (Grönroos, 2011). In this context, the firm represents (1) the value facilitator by providing customers with a foundation for their value creation in form of resources and (2) the value co-creator during interactions with customers during their value generating processes (i.e. consumption). The customer on the other hand is (1) value creator during the value-generating process (consumption) where other resources could additionally be added (e.g. skills) and (2) value creator through value-supporting interactions with the firm during the actual value fulfilment (Grönroos, 2008). This joint value creation results from interactions where the customer influences the firm's processes by participating as co-

producer of resources and the firm influences the customer's value creation as co-creator of value (i.e. value-in-use) (Grönroos, 2011).

In value co-creation, interactions between the firm and its customers form an integral part of a service. Firms are no longer restricted to insinuate value but also have the opportunity to actually influence the value fulfilment (Grönroos, 2008). In general terms, interactions can be described as "mutual or reciprocal actions where two or more parties have an effect upon one another" (Grönroos, 2011, p.244). Thus, interactions become a key marketing concept as it enables firms extending direct influence of customers' value fulfilment (Grönroos, 2008).

Joint value creation and co-creation of value cannot take place, unless interactions between the firm and the customer occur (Grönroos, 2008; 2011). In its traditional function, the marketing department may not be able to support the customers' value-creating processes or take responsibility for the fulfilment of value propositions because related processes will not be part of the marketing role (Grönroos, 2006b). Hence, individuals, systems and processes involved in both communicating value propositions and providing value support to customer processes should take a customer focus in their planning and operations (Grönroos, 2006b). Accordingly, Gummesson (1987) distinguished between part-time marketers and full-time marketers, i.e. customer focus should be part of every department function even when only marginally involved in customer processes. Thus, when accepting interaction concept as key construct and marketing as an intertwined function, we emphasise the following premise of service marketing:

P1: To enable co-creation of value, firms should take a customer focus throughout the organization and define their employees and customers as central assets.

Service Design

Taking this a step further, both, service logic and the central role of customers suggest a change in the scope of service design from 'user-centred design' to 'co-design' (Sanders & Stappers, 2008). User-centred design frames problems and opportunities from a human-centred perspective by including customer observation and information into the design project (Moritz, 2005; Krippendorff, 2006; Brown, 2008). Co-design on the other hand can be described as the collective creativity of designers and participants not trained in design, working together throughout the whole span of a design process (Sanders & Stappers, 2008).

Collective creativity, however, requires changes in the firm. As outlined by Burns et al. (2006), design traditionally focused on giving form. However, the on-going progress of design towards co-design splits the traditional view of design between 'traditionalists' and 'transformers'. Transformation design is known for continuously transforming the behaviour of organizations and users rather than giving form to a design object (Burns et al., 2006). Indeed, recent literature suggests that instead of distinguishing service design from product design as a way of designing intangibles such as systems and processes, service design follows increasingly the path towards transformation design (Kimbell, 2009; Mager, 2009; Sangiorgi, 2009; Ostrom et al., 2010; Stickdorn & Schneider, 2010).

In the context of transformation design, co-design does not refer to the design of a particular object but rather to behavioural shaping of systems, interactive platforms and people's roles towards a more collaborative, sustainable and creative society and economy (Burns et al., 2006). In other words co-design as collective creativity and mutual learning experience requires changes in the landscape of business practice to achieve successful user involvement in service innovation. As such, co-design includes an exploratory and continuing activity or what Stickdorn and Schneider (2010) and Ostrom et al. (2010) describe as "Design Thinking" embedded in the firm's culture and systems. These developments

towards an exploratory and collective activity go beyond the boundaries of design, which leads to the following service design premise:

P2: Co-design requires the embedment of "Design Thinking" into a firm's culture, systems and interactions for successful integration of users in service innovation.

Service Innovation

Active user integration is increasingly recognized as key for staying innovative and competitive in the market (Alam, 2002; Kristensson et al., 2008; den Hertog et al., 2010; Ostrom et al., 2010). Early approaches to integrate user input into product development processes were 'lead user analysis' (von Hippel et al., 1999; Lilien et al., 2002), 'information acceleration' (Urban et al., 1997), 'beta testing' (Dolan & Mathews, 1993), 'consumer idealized design' (Ciciannteli & Magdison, 1993) and 'quality function deployment' (Griffin, 1992). Further, studies of technology-based service innovation revealed that innovation with customers lead to more innovative services but at the same time indicated that successful customer involvement requires several strategies, such as the provision of necessary information and tools, heterogeneous groups and motivations that are personally meaningful to the participants (Magnusson et al., 2003; Matthing et al., 2004; Kristensson et al., 2008). Moreover, by recognizing that interactions with customers provide opportunities for value co-creation, service innovation has changed its scope by introducing collective creativity and mutual learning experiences (Kristensson et al., 2008; den Hertog et al., 2010; Ostrom et al., 2010). Hence, similarly to the intertwined role of marketing, service innovation goes beyond technological innovation and R&D (den Hertog et al., 2010).

Service innovation is a difficult construct to analyse and measure (Gallouj & Weinstein, 1997). These difficulties derive on the one hand from innovation theory that has been developed on the basis of technological innovation in manufacturing activities (Gallouj & Weinstein, 1997) and on the other hand due to the multidisciplinary and crosslinking characteristics of service innovation (den Hertog, 2000). Den Hertog and de Jong (2007) for example suggested that service oriented firms are inclined to invest more in organizational innovation or 'unlocking innovation strategies' rather than in technological innovation which is restricted to R&D.

To gain an understanding of how organizational innovation is implemented in practice, den Hertog and de Jong (2007) investigated a worldwide operating human resource service firm as case study. The authors found nine features of organizational innovation which they clustered into three categories of innovation: (1) 'non-formalized strategic focus', (2) 'semi-structured organization' and (3) 'embedded decision-making' (den Hertog & de Jong, 2007). Among these nine features, particularly the adaption of an open innovative culture including the development of a bottom-up structure and flat hierarchy as well as ad-hoc co-innovations with international clients and partners were identified as basic requirements for corporate innovativeness (den Hertog & de Jong, 2007). These findings indicate that innovation should not be restricted to one department but rather particularly include frontline staff and external stakeholders.

By defining service innovation as a multidisciplinary and crosslinking activity, den Hertog (2000) proposed a four-dimensional model which focuses on the significance of non-technological factors in innovation. These four dimensions are (1) new service concept, (2) new client interface, (3) new service delivery system and (4) technological options. Den Hertog (2000) suggested that in addition to knowledge exchange within the four dimensions, process-oriented and intangible forms of knowledge flows between the dimensions and with stakeholders are crucial for service innovation.

The four-dimensional model was extended to a six-dimensional model by including (5) new business partner and (6) new revenue model (den Hertog et al., 2010). Moreover, by drawing on the resource-based view, den Hertog et al. (2010) proposed that a dynamic capability perspective might be a useful approach as service innovation is less tangible and more interwoven with a series of capabilities throughout the organization. One of the identified capabilities is 'co-producing and orchestrating', i.e. the firm has to co-design and co-produce a service innovation with other suppliers and to manage the accompanying alliance (den Hertog et al., 2010). Hence, although the described model was suggested in a business-to-business context, the high potential of customer integrations in innovation was clearly recognized. The following premise reflects that customer integration is a key determinant of innovativeness:

P3: Due to the recognition that active user involvement is effective in service innovation, firms should use interactions with the customer not only for value co-creation but also for co-design.

The concept of on-going interactions in co-design

Building on the interaction concept, Grönroos and Ojasalo (2004) suggest that the development of service productivity should be a mutual learning experience where the customer and service provider interact to create a common field of knowledge regarding how to consume and produce the service. In particular, Grönroos and Ojasalo (2004) propose that through on-going interactions or relationship continuity the customer gains more experience of the service provider and service processes, whereas the service provider learns more about the customer's competence as well as the customer's specific needs. Relationship continuity is argued to lead to improved internal efficiency as the service processes can be more effectively aligned to the customer needs as well as to improved external efficiency as the perceived service quality for the customer increases (Grönroos & Ojasalo, 2004).

It is suggested that firms should use the on-going interactions with the customer during the value generating process to create a space for mutual learning and co-design (figure 1). This space is seen as a 'knowledge exchange platform' to enable co-designing better value propositions for the firm (internal efficiency) as well as improved value-in-use for the customer (external efficiency). We therefore propose that firms should develop relationship continuity by providing such a platform to tap into customer knowledge and creativity with the aim of co-designing improved and innovative services, which ultimately leads to more efficiency for the respective firm as well as to more desirable and useful solutions for the customer.

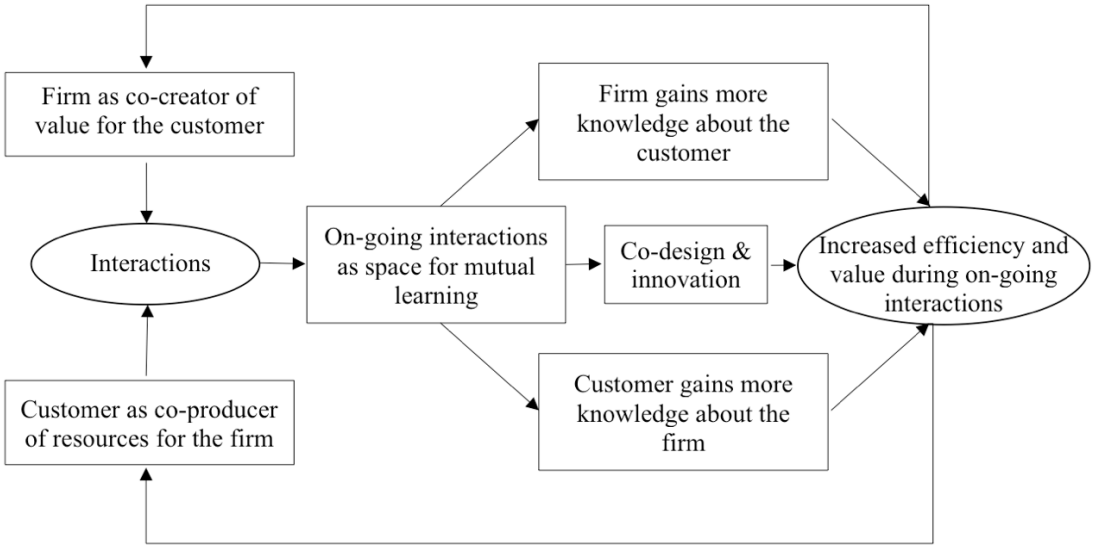

Figure 1 On-going interactions as space for mutual learning and co-design; source: developed by the authors.

We propose that on-going interactions provide opportunities for mutual learning and co-design in which the customer becomes an integrated part of the innovation and design process not only as an informant but also as a co-designer. To achieve the active integration of users in service design and innovation, however, the firm needs to facilitate the conditions such as an open innovative culture, bottom-up structures and flat hierarchies as well as define their employees and customers as central resources of the firm. Accepting these premises and defining interactions as key construct for mutual learning relationships, our proposition is:

Firms can utilize on-going interactions with its customers for more intensive participation and knowledge exchange and for creating a space for mutual learning and co-design.

Conclusion and directions for future research

Co-design is argued to be an integral part of service design and a key determinant of innovation. Both service design and service innovation are recognized as being crosslinking and multidisciplinary in their characteristics rather than restricted to one department. Building on service logic as dominant logic for marketing, it is suggested that the firm can use the interactions with customers during the value generating process to create a space for mutual learning and co-design. It is furthermore proposed that co-design requires the incorporation of "Service Design Thinking", by adopting open and innovative culture, bottom-up structure and flat hierarchy.

We recognize that the need for effective relationship continuity between the firm and its customers, and the opportunity it could provide for co-design, is a fundamental move toward more innovative services. However, we acknowledge that this paper represents a very early step of how co-design with the customer may be integrated into service practices, processes and systems. The suggested premises presented in this paper offer avenues for future research. Beyond the presented intuition here lies the task of practical implementation. That is, where exactly does the 'space' for mutual learning and co-design take place and exactly what is created through the process? Future research might also

consider the examination of different processes of customer involvement and collaborative relationships with emphasis on exploring new paths to creativity and innovativeness. Moreover, the effect of organizational structure on relationship continuity and service innovation by investigating different organizational structures and forms of relationships offers another avenue for future research.

Particularly within the service design literature, co-design is a concept that may contribute greatly to integration between research and practice. Practical techniques such as visualization methods for example play a key role in developing effective communication and transforming ideas and processes into visible dimensions, and thereby creating greater clarity for all stakeholders involved in the co-design process (Mager, 2009; Segelström, 2009). Thus, research could aid practising service designers in examining the effectiveness of visualisation techniques in the service-design process.

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