
This is an electronic reprint of the original article.
This reprint may differ from the original in pagination and typographic detail.

Author(s): Korhonen, H.M.E. and Kaarela, I.
Title: Practices for involving organizational customers in service innovation
Year: 2015
Version: Final published version

Please cite the original version:

Korhonen, H.M.E. and Kaarela, I., 2015. Practices for involving organizational customers in service innovation. In R. Agarwal, W. Selen, G. Roos, R. Green, eds. Handbook of service innovation. London, UK: Springer-Verlag, pp. 591-615. DOI: 10.1007/978-1-4471-6590-3_27

Rights: © 2015 Springer International Publishing. Reprinted with permission.

This work Practices for Involving Organizational Customers in Service Innovation is subject to copyright. All rights are reserved by Springer International Publishing, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publishers location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

This publication is included in the electronic version of the article dissertation:
Korhonen, Heidi M.E. "Customer Orientation in Industrial Service Innovation - Deepening the Understanding on Customers, Needs, Involvement, and Value". Aalto University publication series DOCTORAL DISSERTATIONS, 124/2016, VTT Science 131

All material supplied via Aaltodoc is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

Practices for Involving Organizational Customers in Service Innovation

Heidi M.E. Korhonen and Ilari Kaarela

Abstract It is not clear what kind of customer involvement leads to optimal service innovation. An integrative approach is needed so as to link the practices of how a firm involves customers in service innovation to the advantages it is seeking. We apply previous research into service-dominant (S-D) logic and open innovation in order to study the practices for involving organizational customers in service innovation. Our empirical research is based on case studies on six globally operating technology companies known for their innovativeness and service-oriented business with their organizational customers. We describe customer involvement practices based on their openness as *in-house development and supplier co-operation*, *development based on customer insight*, *co-development with customers*, and *development by customers*. We find that, in addition to obtaining information, ideas, and development partners, these customer involvement practices are used for *shaping the context of value co-creation*, *fostering network effects*, *living with contingency*, and *engaging in business with meaning*. We also contribute by bringing the research streams of S-D logic and open innovation closer together.

Keywords Service innovation · Open innovation · Customer involvement · Service-dominant (S-D) logic · Practices · Business to business (B2B)

1 Introduction

Our study aims to increase understanding of the practices of service co-innovation with customers and users. We focus on service innovation in the business to business (B2B) context, whereas the previous literature has mainly analyzed

H.M.E. Korhonen (✉) · I. Kaarela
VTT Technical Research Centre of Finland, Espoo, Finland
e-mail: heidi.korhonen@vtt.fi

I. Kaarela
e-mail: ilari.kaarela@vtt.fi

individual users or communities of devoted users. We seek answers to the following questions: *why do companies involve organizational customers in service innovation, and how do they utilize different practices in achieving these goals*. That is, we examine how the various practices differ in their aims, and how customer involvement practices are implemented.

As our theoretical background, we apply service literature which highlights value-in-context and value co-creation, together with open innovation (OI) literature that emphasizes open systems, inter-organizational knowledge flows, and joint innovation. Our contribution is to link together the research streams of service-dominant (S-D) logic (Vargo and Lusch 2004, 2008) and open innovation (Chesbrough 2003). By positioning ourselves between the practice-oriented view of OI and customer involvement and the more theory-oriented S-D logic we hope to gain insight into customer involvement practices and their goals. Our empirical research is based on six cases of technology companies from California and Finland that have developed service-oriented business.

We start by introducing our theoretical background, innovation in the light of S-D logic, and the paradigm of OI and customer involvement. We explain our methodology and describe our case companies. Then we start outlining our findings and describe the customer involvement practices by structuring them based on the nature of their openness. We then continue our findings by explaining the new insight we have gained from the point of view of S-D logic into customer involvement in these companies, what they use customer involvement for. Finally, we conclude our paper by discussing our findings and their theoretical and practical implications.

2 Innovation in the Light of Service-Dominant Logic

In order to understand the customer involvement practices companies choose to use in their service innovation, we need clear definitions of both ‘service’ and ‘service innovation’. In this section, we highlight important previous research in the area of service innovation and service development, and present how we understand the concepts of ‘service’ and ‘service innovation’.

2.1 From Innovation in Products and Services to Service Innovation

Increasing interest in services and service innovation has sparked numerous reviews of past research into service innovation (cf. Droege et al. 2009; Gallouj and Savona 2009; Toivonen and Tuominen 2009). As proposed by these writers, there have been multiple attempts to define service innovation. These attempts are frequently divided into the perspectives of: technologist, assimilation, demarcation, and

synthesis (Droege et al. 2009). The technologist perspective puts great emphasis on technology. New technologies lead to process innovations that enable improvements in services or even totally new services (Barras 1986). The perspective of assimilation views service development as similar to product development, and proposes that transferring innovation practices from product development to service development is fairly straightforward (Drejer 2004; Nijssen et al. 2006). This is in stark contrast to the demarcation perspective, which proposes a clear distinction between product and service development. Those who share the demarcation view believe that there is a need for autonomous concepts and separate understanding for service innovation (cf. de Brentani 1995; Edvardsson and Olsson 1996; Sundbo 1997).

The newest and most promising interpretations of the nature of service innovation are from the synthesis perspective (cf. Gallouj and Savona 2009). From this perspective, the study of product and service innovation can complement each other; the phenomena of product and service innovations have shared characteristics, but also qualities that differentiate them. The study of product innovations can bring fresh insights into the study of service innovations, and vice versa. Of special importance is the great emphasis on customer involvement in service development.

Moreover, there are characteristics of service innovation that are relevant when trying to understand companies' choice of practices. For example, in many service companies dedicated R&D departments or resources are difficult to identify, and there may even be no deliberate service innovation activity taking place. Instead, service innovations are often emergent changes carried out directly in the process of service provision, and are not recognized as innovations before implementation. As such, service innovations are difficult to detect. Additionally, service innovations can rarely be classified meaningfully into product, process or organizational innovations, as they almost always reflect aspects of each of these classes. Instead of viewing service innovation as a clearly defined process of taking an idea into operation through predetermined development steps, service innovation should be considered to be a more fuzzy process that can also begin by an observed change in operations, or a rapidly applied idea that is later developed further with practical experience. (Toivonen and Tuominen 2009)

As Toivonen and Tuominen have so aptly summarized the definition of service innovation presented in Sundbo's (1997) classic article: "*A service innovation is a new service or such a renewal of an existing service which is put into practice and which provides benefit to the organization that has developed it; the benefit usually derives from the added value that the renewal provides the customers. In addition, to be an innovation the renewal must be new not only to its developer, but in a broader context, and it must involve some element that can be repeated in new situations, i.e. it must show some generalizable feature(s). A service innovation process is the process through which the renewals described are achieved.*" (Toivonen and Tuominen 2009, p. 893)

So as to further develop this definition, we broaden the concept of service by adopting that given by Vargo and Lusch (2004, 2008). In their service-dominant (S-D) logic, service is conceptually distinct from services. They define service as

the application of resources for the benefit of another (*ibid.*). Benefit is seen as value-in-use, or more recently value-in-context (Vargo 2009; Chandler and Vargo 2011). This value is always uniquely and phenomenologically determined by the beneficiary, and is thus “idiosyncratic, experiential, contextual, and meaning laden” (Vargo and Lusch 2008). By choosing to use this definition, the definition of service innovation above is further enriched with the contextuality of the actors and their reciprocal relationship. Instead of discussing innovation in services, we should be discussing innovation in service, innovation in co-created value, or even innovation in the co-creation of value itself.

Value refers here to the total perceived tangible and intangible benefits and costs. Intrinsic value occurs when something is appreciated for its own sake as an end in itself—whereas extrinsic (or instrumental) value occurs when something is appreciated as means of achieving something else (Holbrook 1999; von Wright 1963). Goods and services can be seen as means to ends and this kind of value-in-use approach accentuates extrinsic value. However, it can be argued that only an experience can be appreciated as an end in itself, for its intrinsic value (Holbrook 1999). Discussion in S-D logic has also emphasized that goods and services are essentially experiences for both individuals and organizations (Schembri 2006). Therefore the experiential nature of value has been included in the most central core of S-D logic (Vargo and Lusch 2008; Vargo 2013).

It is easy and fairly common to mistake value co-creation for co-development of service offerings. In S-D logic, value co-creation refers to the interactional and contextual nature of the process, where value is extracted from the service. All social and economic actors integrate resources to create value for themselves and for others (Vargo and Lusch 2008). This way value is co-created in a network of interacting and resource integrating actors.

2.2 Innovating New Forms of Value Co-creation

When we select the fairly abstract definition of service that Vargo and Lusch (2004, 2008) propose, what then are the outcomes and practical implications for service innovation and business development? Lusch et al. (2007) claim that S-D logic can bring competitive advantage to companies by helping them distinguish between value delivery and value creation, and between embedded value and the co-creation of value. They also propose that S-D logic has to do with viewing employees, partners, and customers as collaborators who co-create value together (*ibid.*). Thus, they argue that adopting S-D logic thinking makes a company better at grasping the subjective views of the customer on the value of an offering, and better at acting on changes in these views, which ultimately results in competitive advantage (*ibid.*). Moreover, adopting S-D logic allows companies to focus on innovating customers and with customers, rather than merely coming up with new service offerings (Rubalcaba et al. 2012). Grönroos and Voima (2013) also propose that, with direct interaction, the service provider can influence a customer’s value creation.

If we look at service innovation as innovation in the application of resources for the benefit of another, that means we can simultaneously innovate the application of resources (the offering) and the benefit of another (the need to be fulfilled and the beneficiary). Innovating becomes an activity that, on the one hand, is bound by constraints in access to resources and the interests of the possible beneficiaries, but, on the other hand, offers significant freedom of choice. The actors participating in value co-creation can imagine and shape the future together which leads to business ecosystem evolution.

An important phenomenon guiding the evolution of business ecosystems, i.e. value co-creation systems, is network effect. Network effect makes an offering more valuable when more people use it (Katz and Shapiro 1985). Direct network effects occur through direct physical effects, whereas indirect network effects are mediated by the market, as when there is better availability of complementary goods or services (Katz and Shapiro 1994). Theories on network effect suggest that it is not the attractiveness of the value proposition of a single focal actor per se that leads to successful innovation, but how the focal actor is able to obtain support from other actors so as to co-create an attractive total value proposition (cf. Tse 2002).

3 Open Innovation and Customer Involvement

In this section we describe how the view of innovation has developed from a closed producers' model into an open model, and how this has led to an understanding of the significance of customer involvement in innovation practice. We then explain that companies' innovation practices can be categorized in many ways, and we present a typology of customer involvement practices based on how open or closed they are.

3.1 From In-House Innovation to Collaborative Innovation

Schumpeter, the father of the idea of creative destruction, first emphasized the importance of entrepreneurial spirit, and later the importance of large companies' resources and capital for innovation. Following his legacy, most innovation studies used to assume a producers' model as the dominant mode of innovation, and concentrated on the internal organizing of companies' R&D processes. Furthermore, the majority of these studies concentrated on technological innovation, even though Schumpeter had a wider view on innovation, including, e.g., product, process, and organizational innovation. He defined development as new combinations of new or existing knowledge, resources, equipment, etc. (Schumpeter 1934).

Knowledge and resources that are required for innovation are not always found within the boundaries of a single organization. Instead, they are frequently combined from different sources, such as suppliers, research institutions, partners,

investors, even competitors. The logic of OI, popularized by Chesbrough (2003), emphasizes that organizations need to open up their innovation processes and manage network connections and relationships in order to search outside their boundaries, trading knowledge both into the company as well as out from the company. This enhances knowledge flows in and out of the company, enables a wider scale of knowledge combinations, and improves the efficiency of knowledge utilization.

Von Hippel (1988) identified users, manufacturers, and suppliers as important sources of useful knowledge and noticed that the locus of innovation varies; it is often the users who innovate. This is because users benefit directly from innovations and possess the richest needs information (von Hippel 2005). This realization brought to the fore user-driven innovation, where users can be innovators themselves or can feed ideas and improvements into companies' innovation processes. More specifically, users can be defined as firms or individual consumers that expect to benefit directly from using a new offering (Baldwin and von Hippel 2011).

3.2 Changing Innovation Practices

Companies are not simply just open or closed innovators; instead, their OI practices vary. We are still lacking systematic evidence of OI practices and their impact on performance (Ebersberger et al. 2012). Even though the OI model describes why a firm acquires valuable resources from external firms and shares internal resources in interfirm collaboration, the model does not answer the question how a firm does this (Hsieh and Tidd 2012). We need an integrative approach that would link the practices of how a firm involves customers in innovation into the advantages it is seeking.

There have been many approaches and typologies to open innovation practices varying in their specificity, attention to detail, and conceptual view of the innovation process and its goals. In the context of this book chapter, we find especially interesting the typologies that describe how open or closed customer involvement is. Kaulio (1998) looked at different methods of involving customers in product development, and created a framework for analyzing the methods based on the phase of the new product development (NPD) process and the role of the customer in the process. Most methods he studied were used in several phases of the NPD process. He described the role of the customer or the openness of the involvement as designing *for*, designing *with*, and design *by*. When designing *for* customers, customer data is an input of the design process; when designing *with* customers, customers are allowed to select, reject or in other ways react to proposed solutions; when design is done *by* customers, customers are active participants in the design process (ibid.). Others have used similar frameworks, e.g., Desouza et al. (2008) describe the design *for* type as customer-focused and closed innovation, the design *with* type as customer-centered and open innovation, where customers are allowed to be involved in the process at specific points in time, and the design *by* type as

customer-driven and open innovation, where the customer engagement is dynamic, providing ideas anytime and anywhere. Westerlund and Leminen (2011) identify four types: *producer-driven closed*, where development is led by the producer and is closed; *user-centric closed*, where the role of users is more visible, as the producer and its suppliers collect information on users; *user-centric open*, where development is somewhat led by users but each user individual is only involved in the process once; and *user-driven*, where development is truly led by users.

There are also other kinds of typologies describing customer involvement practices. As companies typically regard the innovation process as a stage-gate process with specific phases, customer involvement practices are often described based on the phases in which they can be used (cf. Russo-Spena and Mele 2012). Another way to analyze OI practices is to look at the role the firm itself takes in the OI process, whether it is utilizing the incoming or outgoing knowledge flows, or both, or being an intermediary (cf. Gianiodis et al. 2010). Also the role of the customer can be seen as the correspondent, the tester, the reflective practitioner or the dreamer (Edvardsson et al. 2012). These typologies have been summarized in Table 1.

Table 1 Typologies describing customer involvement and open innovation practices

Dimension	Categories	Reference
Role of the customer in the company's innovation process	designing for customers, designing with customers, design by customers	Kaulio (1998)
	customer-focused (for customers),	Desouza et al. (2008)
	customer-centered (with customers),	
	customer-driven (by customers)	
	producer-driven closed (users as buyers),	Westerlund and Leminen (2011)
	user-centric closed (users as sources of ideas),	
	user-centric open (users as important but disposable sources of information),	
	user-driven (users as long term collaborators)	
correspondent, tester, reflective practitioner, dreamer	Edvardsson et al. (2012)	
Role of the company in an open innovation process with stakeholders	utilizes incoming knowledge flows,	Gianiodis et al. (2010)
	utilizes outgoing knowledge flows,	
	utilizes both knowledge flows,	
	intermediating role	
Innovation process phase	co-ideation, co-evaluation, co-design, co-test, co-launch	Russo-Spena and Mele (2012)

Even when we recognize more and more ways and dimensions in which a company is an open innovator, we should not just accept without proof the idea that the more open an innovation process is, the better it is. We need to better understand the mechanisms through which companies gain advantages from different customer involvement practices.

Users are seen to benefit from user-oriented service development through a better end result, but also directly from the process (Edvardsson 1997; Grönroos 1990). Service providers are seen to benefit from user involvement through better served customers, and through the ideas and knowledge that customers bring. But user involvement can also benefit service providers if it speeds up the innovation process, such as in rapid application (Toivonen 2010), and if it increases the adoption of the service due to the role that users have in the stage at which an innovation is put to use (Sundbo and Toivonen 2011). Mustak et al. (2013) describe the value outcomes of customer involvement for sellers as, for example, economic value, better customer relationships, facilitation of development and innovation activities, and negative outcomes such as customers becoming competitors through knowledge spillover. They also describe the value outcomes for customers as, for example, better fitting offering, improved perceived quality and greater perceived value, economic value, and enhanced skills of creating value from the offering (ibid.).

It has also been suggested that the critical condition for successful innovation is not the openness per se, but the generative potential of relationships to induce changes in the way participants see their world, act in it and give rise to new entities (Lane and Maxfield 1996; Swan and Scarborough 2005; Hopkins et al. 2011; Remneland-Wikhamn et al. 2011; Hsieh and Tidd 2012).

4 Methodology

In this section, we first discuss our research approach and its trustworthiness. We then continue by explaining how we have collected and analyzed our data and give brief descriptions of our case companies.

4.1 Research Approach and Trustworthiness

Our empirical research is based on qualitative case studies that investigate technology companies' service innovation practices with their organizational customers. As Yin (2003) explains, the case study approach should be considered when a 'how' or 'why' question is being asked. Case studies allow us to study the particularity, complexity, and contextuality of each case (Stake 1995).

To assess the trustworthiness of our research, we adopt an alternative terminology brought forward by Guba and Lincoln as the quality criteria for qualitative research: credibility instead of internal validity; transferability instead of

generalizability; dependability instead of reliability; confirmability instead of objectivity (Guba 1981; Guba and Lincoln 1994).

In order to strengthen our credibility, we have included elements of peer debriefing, and the findings were frequently discussed with colleagues within our own organization as well as peers from partner organizations. The interviews were all recorded. Three of the companies were actively involved in commenting on and assessing the conclusions drawn from all the data collected, not only the data from their interviews.

So as to strengthen transferability, we have endeavored to collect rich contextual data. Also, we selected companies generally known as innovative from different industries so as to maximize the range of data collected. So as to ensure dependability, we looked into the public information available on the case companies. Moreover, the researchers analyzed the data individually before moving on to comparing and combining the findings. When assessing the interpretations that we can actually make based on the data, we have to take into account the fact that the views we have gathered are the views of the interviewees and not of the companies. In large organizations, different or even conflicting viewpoints could have been found.

4.2 Data Collection and Analysis

The case companies were interviewed about their OI practices, emphasizing customer collaboration. The interviews were conducted between 2011 and 2013. Material from research meetings and publicly available information were also studied. Initial analysis was conducted by looking for things that could be seen as a practice or an aim, a positive or negative outcome of open or closed innovation or customer involvement. Further analysis was conducted by (i) categorizing the practices based on the openness of customer involvement, and discussing why companies used a certain level of openness, and (ii) studying the companies' aims related to innovation in the light of S-D logic and describing the practices from the viewpoint of these aims.

The case companies all operate globally and are stock exchange-listed technology companies that are known for their innovativeness and have developed service-oriented business. In Table 2 below we present basic data on these companies. The interviewees worked in senior executive, managerial or expert positions in areas of strategy, sales and marketing, and customer service.

Autodesk is the world leader in 3D design, engineering, and entertainment software and services. It develops solutions for the design process. It serves business customers in the fields of architecture, engineering and construction, civil infrastructure, education, media and entertainment, natural resources, product design and manufacturing. Autodesk helps its customers imagine, design, and create a better world.

Table 2 Basic information on the case companies

Company	Revenue 2011	Country of headquarters	Line of business	Strategic quote from interview or web site
Autodesk	USD 1.95 bn	USA	3D design software	Imagine. Design. Create.
Interface	USD 1.05 bn	USA	Modular carpet	Design with purpose
Nokia	EUR 38.7 bn	Finland	Mobile phones	Connecting people
Ixonos	EUR 81.4 m	Finland	Mobile solutions	Dream-Design-Deliver
Vaisala	EUR 273.5 m	Finland	Environmental and industrial measurement	Observations for a better world
TeliaSonera	SEK 104.8 bn	Sweden (interviews in Finland)	Network access and telecommunication services	Offerings based on deep understanding

Interface is the world's largest designer and maker of carpet tiles. They describe themselves as Design with Purpose and are known as a pioneer of sustainability. They manufacture and sell modular carpets to commercial environments including corporate, healthcare, education, retail, hospitality, and government.

Nokia is a mobile products manufacturer and its mission is: Connecting People. Having dominated the mobile world for over a decade, Nokia has faced a tough challenge as the industry has shifted to a war of ecosystems. As we are in this article interested in involving organizational customers in service innovation, we have interviewed Nokia regarding the development of logistics and supply chain services and its cooperation with its operator customers. In the end of 2013, it was announced that Nokia mobile phone business would be acquired by Microsoft.

Ixonos is one of the world's leading developers of mobile devices, mobile software, and mobile internet services. It positions itself as an experimental solutions provider helping its customers to very quickly innovate solutions to business problems or market opportunities that are often fuzzy or changing in this volatile market.

Vaisala is a global leader in environmental and industrial measurement. It helps its customer groups—meteorology services, airports, roads and rail, defence, new weather markets, life science, and targeted industrial applications—to better understand and influence their environment and reduce uncertainty with well-informed decisions.

TeliaSonera is a telecom operator that holds strong positions in the Nordic and Baltic countries, Eurasia, and Spain. It provides network access and telecommunication services for both the consumer sector and the business sector. It is a future-oriented company that is proud of being a pioneer in the telecom industry.

5 Findings

In this section, we first categorize the customer involvement practices based on the nature of their openness and then discuss the purpose of customer involvement based on new insight on innovation gained from S-D logic.

5.1 Practices for Customer Involvement in Service Business Development

In order to describe customer involvement practices based on the level of their openness, we apply a categorization that resembles the ones used by Kaulio (1998), Desouza et al. (2008), and Westerlund and Leminen (2011). We start with *In-house development and supplier co-operation*, where customers are not directly involved. *Development based on customer insight* can be described as closed innovation, where special emphasis is put on understanding customers. *Co-development with customers* is understood as mutual co-operation, where both the company and its customer are active participants. *Development by customers* means a very strong customer involvement. It is notable that companies use different types of customer involvement in different situations, with different customers, at different times, and for different purposes.

5.2 In-House Development and Supplier Cooperation

When a company intentionally does not involve its customers in service development, but instead prefers to conduct in-house development or supplier co-operation, this can also be seen as a practice of customer involvement. For example, *Nokia* has a lot of strong capabilities, such as their logistics know-how, that can be used for developing attractive value propositions. They find it important to get the ‘base line’ ready in-house. Only appropriate customers are interesting partners for developing things above the base line. Very small companies do not have the resources to take part in co-development, and it is not profitable to tailor offerings for them. *Vaisala* develops its internal service processes in-house, but involves customers in the development of those processes that are directly visible to customers.

It is natural to involve in service development those internal functions that operate in the customer interface. For example, sales and marketing departments often take part in service development, while technology development is typically carried on in R&D departments. When in-house development of services is carried on in several places within an organization, it is important that these departments co-operate closely. *Ixonos* accentuates the importance of bringing together many different kinds of people in-house regardless of the level of customer involvement.

However, there is no one right way to work together. Ixonos expects its people to continuously look for new ways to co-operate.

Autodesk conducts a lot of internal development, but it is also continuously looking for interesting companies to acquire. Because of these acquisitions, Autodesk has development work going on in various locations around the world, which needs to be coordinated and facilitated together.

Collaboration within a global organization is also an important issue for *Interface*. They would like to utilize the knowledge of local units globally. They feel that they need to have strong technological know-how and ability to do things by themselves, because they are too small to rely on acquisitions. However, some acquisitions have been done in the past in order to get access to new regions and product categories. Interface also finds it important to observe and collaborate with SMEs as their innovations would otherwise easily go unnoticed. Innovations made by large suppliers are usually offered to Interface directly.

5.2.1 Development Based on Customer Insight

In the business to business (B2B) sector, sales and customer interface are typically the most important sources of customer insight. Combining development based on customer insight with in-house technology development is currently a very common way for companies to operate. For *Vaisala*, development based on customer insight is the main type of customer involvement. *Interface* also makes very clear the importance of customer insight. The carpets they make must suit the customer needs or they will not sell. *Nokia* strives to understand how purchasing varies with different customers and to develop appropriate services for different kinds of customer. For *Ixonos*, the methods for gaining insight on the customers are included in the Dream-Design-Deliver approach they use.

User communities can be an important tool for gaining customer insight. *Autodesk* works with user communities for this purpose. It does not use user communities to make customers ideate or design new offerings or features, but instead gathers information on how Autodesk products are used by customers. *TeliaSonera* also utilizes user communities in the same way to learn about customers and to spark discussion. It also emphasizes the importance of effective utilization of customer knowledge within the company. Customer insight needs to be operationalized, documented, and shared with the right people.

There are reasons to keep customer involvement at the level of insight instead of actual co-development. One major reason in b2b markets is the importance of each individual customer relationship. Service providers often do not want to take the risk that customers' expectations may rise above the level they are willing to provide. This can easily happen in a co-development relationship. Another obvious reason is the risk of undesired knowledge spillover. In-house development and development based on customer insight enables much better protection of intellectual property than co-development. Furthermore, co-development is very resource-intensive.

Both the company and its customers typically lack time and resources for co-development. Because of this, many companies must settle for development based on customer insight.

5.2.2 Co-development with Customers

Co-development is development cooperation where both parties are actively involved in the development work. It is mutual co-operation in which all the participants can impact the outcome and process of the development. Co-development is especially useful in situations where several parties need to dream together, where information from several different parties needs to be combined in order to create something new, and where there is a need for synchronized changes or actions. When involving customers in this way, a high level of commitment is required for active and beneficial participation. The customer organizations need to see a clear benefit in committing resources to this work. It is up to the supplier company to make such benefits visible to the customer, and to find ways to motivate them. Also, it is important for the supplier company to consider the costs of co-development. These processes are resource-intensive at both ends.

Vaisala suggests that especially large packaged services should be co-developed closely together with customers for whom these service packages are designed. When customers take part in development work, customer needs can be better satisfied, the customer is thoroughly informed of the service and better understands the service agreement it is planning to enter with *Vaisala*. Incremental improvements to services are not as often explicitly co-developed. Instead, a higher level of radicalness is sought in co-development.

Nokia sees that co-development is clearly different in business markets than in consumer markets. Co-development campaigns with consumers usually demonstrate a tendency towards marketing communication, whereas in B2B markets co-development has to be more fact-based; there has to be a clearly defined problem and a proposition on how to structurally solve it. According to *Nokia*, customers expect benefits from co-development either through increasing sales or cutting costs. Radicalness is not often sought in co-development projects, as 'larger goals are usually tied to operative work'. The greatest benefits of co-development are manifested in how fast and how broadly improvements are implemented.

At *Ixonos*, co-development is a central part of their Dream-Design-Deliver development approach. The customer is brought into participate at an early stage so as to dream new solutions with dedicated designers. The stages of design, which involve actual design work, and delivery, which stands for the technical solution behind the service being developed, are conducted in parallel to the dreaming stage. In this way, *Ixonos* can guarantee that the dreams can actually be realized as service solutions promptly and accurately.

According to *Ixonos*, it is less risky to involve consumers than business customers. This is because individual business customers are inherently more valuable, as each customer represents a large part of the whole market. Also, organizational

customers are always busy, and the necessity for their participation and resource commitment needs to be clearly argued.

When *TeliaSonera* co-develops with its large customers, it helps them understand their needs and imagine what is possible. *TeliaSonera* finds it important to get into an open discussion and beyond the normal role expectations with the customer. It stresses the use of techniques that help to find even latent needs.

Each company strives to shape the context of value co-creation in a way that allows for continuing operation and profitable business. This dictates what a company wants to develop openly and what it wants to develop in-house. For example *Autodesk* does not want to develop its software code as open source because *Autodesk* is a software company that draws revenues from code.

5.2.3 Development by Customers

A company can also provide platforms and incentives that guide customers to conduct development work for the company's benefit. This development work can be directed towards improving a solution that the company currently provides, or to develop something new so as to complement existing solutions. Customers can develop their own product or a third party's offering that supports the company through network effects. It is noteworthy that, when development is taken forward by customers, the company might not have complete power over the direction the development work takes. Customers may end up developing solutions that the company finds harmful.

The case of *Nokia* demonstrates that customers are willing to increase their efforts and take a more active role when they have a personal interest in the development work. It can be seen as a spark of enthusiasm that motivates customers to take an active stand and start thinking and creating for themselves.

According to *Ixonos*, many companies previously thought that ideation could be outsourced to customers or users by utilizing, for example, crowdsourcing methods. However, they soon came to the conclusion that nothing particularly special could be found this way. Truly great ideas are rare, and the minority of great ideas might be overrun by the majority of the crowd. Instead, you need to identify the right group of people and give them resources to take ideas further. Large crowds have a different role; they bring momentum to development. *Ixonos* illustrates this with an African proverb: "If you want to go fast, go alone. If you want to go far, go together."

Autodesk has been following open source software development for a long time. To their initial surprise, they noticed that open source software is not innovative. Instead, development by a large crowd seems to result in steadiness and robustness.

The customers of *Autodesk* use *Autodesk* programs for design purposes. All design work done with these products strengthens its market position, as network effects are so apparent. Its customers are free to build new functionalities and add-ons to existing programs. *Autodesk* is eager to learn about and support new ways for customers to use their products.

5.3 *The Use of Customer Involvement Practices*

The existing literature highlights the role of customers as sources of information and ideas and as partners in development processes. However, alternative goals for customer involvement came up in our cases as we approached innovation from the viewpoint of S-D logic. These lesser known goals are presented in this section. We start with *shaping* the context of value co-creation, which describes well the core idea of innovation in the light of S-D logic. We continue with *fostering* network externalities, which gives momentum to the first goal. We then move on to *living* with contingency arising from the uncontrollability of unexpected changes in the context of value co-creation, and conclude with the purpose of *engaging* in business with meaning, which we believe to be the recipe to involving customers.

5.3.1 *Shaping the Context of Value Co-creation*

Many of our case companies talked about dreaming and imagining, about finding out what the value could be, about helping customers understand what is possible, about identifying latent needs, about finding solutions that would benefit both parties, and about creating a better world. This kind of thinking implies that value co-creation and value itself is changing, and that it is possible to tap into this change or even shape it.

Autodesk has an exceptional view to the design world, and they see a profound change in an increasing overlap between the roles and phases around design where things are imagined and actually created. Technology will allow people to imagine and create new and better possibilities in a way that has never before been possible. This will be an important force that will change the world.

Ixonos has this kind of overlapping Dream-Design-Deliver approach. Together with their customers they dream new kinds of end-user experiences and businesses these experiences could create. At the same time, they are closely connected to the know-how about how to actually deliver the intended dream. *Nokia* also highlights that the purpose of co-development is to find mutual value in a new solution. They also bring up the potential of lean thinking. According to lean philosophy, service should be focused only on the elements that generate customer value. Other elements should be eliminated or simplified.

Similarly, *Vaisala* is not that interested in co-development when doing incremental service development. Instead it wants to involve customers in co-development when trying to accomplish something novel.

TeliaSonera wants to help its customers always take a step further. It has recognized that it has an important role in influencing the market, but it also recognizes that it is itself influenced by the rapid changes in the market and by its customers. This multidirectional influencing takes place as *TeliaSonera* interacts with different actors and stakeholders.

Interface is interested in everything that moves the value co-creation towards sustainability. This is because it differentiates itself through sustainability. The original value proposition of *Interface* was a plastic-backed carpet cut into squares that was twice as expensive as regular carpet. That is a very tough sell, unless you are able to change what your customers view as the problem to be solved and shape the context of value co-creation. *Interface* also reminds us that you cannot go too far ahead of the customer; you need to be aware of how big a step your customer is willing and able to take. Shaping the context of value co-creation is typically like a dance, where the customer and the service provider need to be very close to one another and follow each other's moves.

5.3.2 Fostering Network Effects

Several of our case companies discussed the importance of network effects on the evolution of value co-creation. It seems that fostering network effects is an important area for applying customer involvement.

Autodesk is a de facto standard in the design profession. Design projects are carried out together with other people with whom you need to share the same tools. Because *Autodesk* is so strong, there are plenty of people doing third party development work for it. This work strengthens *Autodesk*'s ecosystem, so it is in their interest to support it. Developers sign up to the *Autodesk* developer community and receive technical support from *Autodesk*. The community creates scale and momentum for the ecosystem. In order to motivate others to support your ecosystem and to develop innovations for it, you need to offer possibilities for profit.

Nokia, on the other hand, is in a challenging position in an ecosystem war. In order to recover from its hardships, it needs support from other actors in the industry. It can get this support if the other parties find it beneficial. Therefore, it is essential that *Nokia* is able to offer interesting value propositions also to parties other than consumers, for example, operators and other actors in the *Windows* ecosystem. *Ixonos* discussed network effects amongst bird-watchers, for whom it had just developed a new service together with *National Geographic*.

5.3.3 Living with Contingency

In practice, companies' possibilities to influence the changes in the context of value co-creation are limited. No company can control the formation of value co-creation networks, nor even forecast it. That is why, especially in volatile markets, it is important to learn to cope with contingency. Contingency is further increased by the complexity of these networks. Companies can apply customer involvement so as to increase their flexibility and ability to live with contingency.

An example of this is *Autodesk*. The founders originally developed *AutoCAD* as a side project for an assumed niche market, because it was possible to get the

product to market quickly. As they were unfamiliar with the market, they did not know what to develop. Instead, they built a platform with basic functionality and let third parties develop special functionality on top of it. Later, Autodesk bought some of those companies and incorporated that capability into the product line. Subsequently, Autodesk set up a developer network. Nowadays the market is still in a state of flux. The user communities and the developer network help Autodesk to understand new ways for customers to utilize its offering and to develop new functionality in a volatile market.

Interface cannot acquire as many new companies as larger companies can, but because of their reputation as a forerunner of innovation and sustainability, they get a lot of ideas pitched to them first. This view of the development work done within SMEs is very valuable for living with contingency.

Nokia describes its business environment as extremely volatile. Market situations and customers' needs change very fast. New service needs pop up quickly and require extreme pace from service development processes. The only way to meet these demands is to develop together with customers. Nokia finds it important to understand the problem the customer wants to solve and the change that is taking place. The value of collaboration for both Nokia and its customers is underlined in a volatile market.

Ixonos' Dream-Design-Deliver approach also increases flexibility and speed in the development work. The fuzzy picture of the market is made clear and extra work is removed by involving a variety of stakeholders. However, ideation and development is not outsourced.

Also *TeliaSonera* involves a wide range of stakeholders at multiple levels in the process of learning so as to understand the contextual needs and motivations. It utilizes an advanced questioning technique that also reveals new stakeholders who need to be involved in the process.

5.3.4 Engaging in Business with Meaning

We believe that the secret to involving customers lies in engaging them in business with meaning. An offering being developed needs to create meaningful experiences in order to be valuable to the customer. When people feel that something has meaning for them, they are motivated and ready to commit themselves to the development process and its outcome at a deeper level. Customer involvement can be utilized to find out what is meaningful for customers, but also to simultaneously create such meaning.

Interface declares it is Design with Purpose. It boldly aims to change the world towards sustainability. Some customers are extremely interested in sustainability, but less willing to pay for it. They might not even be ready to change their buying habits so as to buy something of equal price. What *Interface*'s customers really care about is 'better', not greenness. Things need to be sold first as 'better' and next as sustainable. If people like the offering anyway and discover an interesting

sustainability story, customer loyalty ensues. But it is hard to get someone to switch because of greenness.

Interface's mission creates commitment and energy that drives its innovation. The sustainability goal has opened the eyes of both Interface and its customers to new solutions that have brought additional benefits for both. Green innovations have led, for example, to cost reductions, functional improvements and a special fit to certain markets. Interface sees that involving customers in the innovation process is a way to commit them to sustainability.

Autodesk links itself to the meaningful experiences of its customers by helping them imagine, design, and create a better world. It is not trying to convince its customers what that better world consists of, but if the people themselves have the motivation, Autodesk wants to offer them the means to accomplish their goals.

Green values are important also for *Vaisala's* customers, as it is in the business of environmental and industrial measurement. In Vaisala's business, better service is something that has an overarching positive effect. It is a win-win-win that benefits Vaisala, the customer, and the environment.

Several companies, like *TeliaSonera*, *Ixonos*, *Vaisala* and *Nokia* talk about the importance of trust and finding out what customers really value, what is meaningful to them. A certain level of trust is needed before co-development can reveal deeper meaning. On the other hand, trust is built and meaning is influenced in the collaborative process. Meaning evokes the motivation of individual people. If motivation is lacking, co-development will not take off.

5.4 Summary of Findings

The case findings presented in this section are summarized in the following Tables 3 and 4. The practices and activities reported here are exemplary; all companies are likely to utilize many other practices of customer involvement in addition to these.

6 Discussion

Our article aims to fill an apparent research gap in understanding the practice of involving organizational customers in the creation of service innovations. We have done this by studying the reason and depth of customer involvement. We have applied previous research on service-dominant (S-D) logic and open innovation as our theoretical background, and have deepened the cross-disciplinary discussion between these converging research streams.

Table 3 Examples of case companies' customer involvement practices

	In-house development and supplier co-operation	Development based on customer insight	Co-development with customers	Development by customers
Autodesk	Acquiring companies	Gathering information on customer and user behavior from user communities		Allowing customers design new functionalities and additions
Interface	Co-operating internally	Collecting customer feedback and surveys to gain understanding on customer needs		
	Building internal capabilities			
Nokia	Building internal capabilities	Open discussions with customers on needs and challenges	Improving existing processes Showing customers visible benefits to get them involved	Focusing on specific customers with personal interest in development work
Ixonos	Co-operating internally	Utilizing the dream-design-deliver approach	Ideation in the early stages of innovation, dreaming	Identifying key customers
		Open discussion with customers		Handpicking focus groups Crowdsourcing not preferred
Vaisala	Developing internal processes (to make services more efficient)	Collecting customer feedback	Customizing large service packages for large individual customers, especially valuable in radically novel projects	
		Open discussion on customer needs		
TeliaSonera		Gathering information on customers from user communities	Understanding customer needs Helping customers understand what is possible	

Table 4 Examples of case companies' use of customer involvement practices

	Shaping the context of value co-creation	Fostering network effects	Living with contingency	Engaging in business with meaning
Autodesk	Assisting people to imagine and create new and better possibilities	Offering a de facto standard that facilitates collaboration Supporting third party development work	Building a platform with basic functionality and letting third party developers develop special functionality Cooperating with user communities to understand new user needs	Helping customers imagine, design and create a better world Offering customers means to accomplish their goals
Interface	Changing how customers view the problem Keeping synchronous pace with customers, like when dancing		Learning about the front-end of development through pitches	Building customer loyalty by selling things first as better and next as sustainable with an interesting story Creating commitment and energy with a mission Committing customers to sustainability by involving them in the innovation process
Nokia	Finding mutual value in new solutions Eliminating elements that do not generate value	Making interesting value propositions to stakeholders in the ecosystem	Speeding up development process with close customer involvement	Finding out what is meaningful to customers and creating offerings based on meaning
Ixonos	Dreaming new kinds of businesses and end-user experiences with customers	Offering a collaboration platform for end-users	Making the phases of dream, design and delivery overlap in order to speed up the development process and increase flexibility	Finding out what is meaningful to customers and creating offerings based on meaning

(continued)

Table 4 (continued)

	Shaping the context of value co-creation	Fostering network effects	Living with contingency	Engaging in business with meaning
Vaisala	Accomplishing something novel			Finding a win-win-win benefiting Vaisala, the customer, and the environment—an overarching positive effect
TeliaSonera	Helping customers take a step further		Understanding contextual needs through the involvement of a wide range of stakeholders	Finding out what is meaningful to customers and creating offerings based on meaning
	Participating in multidirectional influencing		Revealing important stakeholders with an advanced questioning technique	Finding out what is meaningful to customers and creating offerings based on meaning

6.1 Theoretical Implications

We see that there is great potential in increasing understanding of innovation by combining knowledge from the research areas of S-D logic, service innovation, and OI. Research into OI could greatly benefit from looking at innovation in the light of S-D logic. OI and user-driven innovation emphasize knowledge flows in the legacy of Chesbrough and von Hippel. We would like to extend this discussion to issues related to value co-creation, especially to shaping the context of value co-creation and to engaging in business with meaning.

An S-D logic-based view on innovation is emerging. Research into innovation in services has in many ways followed a goods-dominant (G-D) logic, whereas research in S-D logic has only lately, within the ecosystems view, been able to address the dynamics of innovation. The development of an S-D logic-based view of innovation could greatly benefit from previous research into OI. We emphasize that the structures of value co-creation are in a state of dynamic flux, and that it is possible to take an active role in shaping the context of value co-creation and in fostering network effects. OI practices can also help in coping with contingency. As S-D logic has been criticized for being too metaphorical in its view of value co-creation (Grönroos and Voima 2013), and not being able to analytically specify the roles of customers and providers in a way that would lead to practical implications, we hope that cross-fertilization with the more practice-oriented OI discussion and the introduction of different levels of customer involvement leads to fresh insights into the practice of innovation based on S-D logic.

Both S-D logic and OI are very symmetrical approaches, where either service or knowledge flows in multiple directions. This symmetry is highlighted in network effects, where support is needed from lots of stakeholders in order to ensure the viability of the offering. Therefore, we would like to say that there may be more actors involved in service innovation in the role of “service beneficiaries” than the obvious customers.

In light of our research, customer involvement differs in B2B and business to commerce (B2C) contexts. In the B2B context, the share of each individual customer of the total market is relatively large. This increases the risk related to each customership. This risk constrains co-development, as co-development easily leads to increased customer expectations that the company might not be willing to fulfill. The commercial interest that both parties have in a business context is different from the use interest of a consumer. The commercial interest limits willingness to expose information in an open manner. Different kinds of benefits, costs and resource constraints are relevant from the viewpoints of businesses and consumers. This is why the style of interaction with business customers and consumers is so different, and business customers’ motivation for co-operation is often addressed more formally. Business customers are also more complex to understand, as they can be seen as networks of actors in different contexts.

6.2 Practical Implications

It is important for practitioners to understand the possibilities and limitations of customer involvement. It is possible to benefit from customer involvement in many more ways than just the gathering of ideas and information. We emphasize shaping the context of value co-creation, fostering network effects, living with contingency, and engaging in business with meaning. The service developer needs support from a variety of actors. In order to get this support it needs to understand the underlying motivation of each actor and to create mutually beneficial solutions.

Based on the goals of customer involvement, available resources, and the motivation of both parties, there are several levels of customer involvement to choose from. Some issues are best developed in-house or with suppliers; some are best developed based on customer insight. Sometimes development with customers is the best option, and sometimes development by customers. Companies typically use several approaches simultaneously in different situations, with different customers or in different phases of the development work. There are indications that co-development is evolving in a direction where the stages and roles of imagining, designing, and creating are merging, and this will require the development of new competencies.

Concerning new idea generation and the actual development work, it is necessary to consider who and how many actors to involve. Co-development with customers and multiple stakeholders seems to be beneficial for understanding and dreaming the value and value co-creation, and for creating momentum, robustness and network effects. Increasing the number of cooperating parties may, however, slow down the development process, kill radical or bright ideas, and increase the costs of development.

7 Conclusion

7.1 Limitations and Further Research

We have addressed a rather large issue through six company cases based on interviews with individual representatives of these companies. Our work does not provide a comprehensive picture of customer involvement practices in these companies, not to mention the practices of companies in general. However, our research does create a novel understanding of the practices of organizational customer involvement in service innovation.

We encourage further research into service innovation in the light of S-D logic, focusing especially on innovation practices. We believe that combining the research streams of S-D logic and OI is a fruitful approach for this research, especially when carried out with a discussion on the nature of value. Research on innovation can greatly benefit from a wide view to innovation, as in innovating co-created value. Such an approach calls for a better understanding of the phenomena of value and value co-creation.

Acknowledgments The authors wish to thank Tekes—The Finnish Funding Agency for Technology and Innovation—and VTT for supporting this research. Our sincere gratitude also goes to the company representatives and our research colleagues that have given their time and shared their ideas for this research.

References

- Baldwin C, von Hippel E (2011) Modeling a paradigm shift: from producer innovation to user and open collaborative innovation. *Organ Sci* 22(6):1399–1417
- Barras R (1986) Towards a theory of innovation in services. *Res Pol* 15(4):161–173
- Chandler JD, Vargo SL (2011) Contextualization and value-in-context: how context frames exchange. *Market Theor* 11(1):35–49
- Chesbrough H (2003) *Open Innovation: the new imperative for creating and profiting from technology*. Harvard Business School Press, Boston
- de Brentani U (1995) New industrial service development—scenarios for success and failure. *J Bus Res* 32(2):93–103
- Desouza KC, Awazu Y, Jha S, Dombrowski C, Papagari S, Baloh P, Kim JY (2008) Customer-driven innovation. *Res Tech Manage* 51(3):35–44
- Drejer I (2004) Identifying innovation in surveys of services: a Schumpeterian perspective. *Res Pol* 33(3):551–562
- Droege H, Hildebrand D, Forcada MAH (2009) Innovation in services: present findings, and future pathways. *J Serv Manag* 20(2):131–155
- Ebersberger B, Bloch C, Herstad SJ, van de Velde E (2012) Open innovation practices and their effect on innovation performance. *Int J Innovat Tech Manage* 9(6):1–23
- Edvardsson B (1997) Quality in new service development: key concepts and a frame of reference. *Int J Prod Econ* 52(1–2):31–46
- Edvardsson B, Olsson J (1996) Key concepts for new service development. *Serv Indust J* 16(2):140–164
- Edvardsson B, Kristensson P, Magnusson P, Sundström E (2012) Customer integration within service development—a review of methods and an analysis of insitu and exsitu contributions. *Technovation* 32(7–8):419–429
- Gallouj F, Savona M (2009) Innovation in services: a review of the debate and a research agenda. *J Evol Econ* 19(2):149–172
- Gianiodis P, Ellis SC, Secchi E (2010) Advancing a typology of open innovation. *Int J Innovat Manag* 14(4):531–572
- Grönroos C (1990) *Service management and marketing: managing the moments of truth in service competition*. Lexington Books, Lexington
- Grönroos C, Voima P (2013) Critical service logic: making sense of value creation and co-creation. *J Acad Market Sci* 41(2):133–150
- Guba EG (1981) Criteria for assessing the trustworthiness of naturalistic inquiries. *Educ Comm Tech J* 29(2):75–91
- Guba EG, Lincoln YS (1994) Competing Paradigms in Qualitative Research. In: Denzin NK, Lincoln YS (eds) *Handbook of qualitative research*. Sage, Thousand Oaks, pp 105–117
- Holbrook MB (1999) Introduction to consumer value. In: Holbrook MB (ed) *Consumer value: a framework for analysis and research*. Routledge, London
- Hopkins MM, Tidd J, Nightingale P, Miller R (2011) Generative and degenerative interactions: positive and negative dynamics of open, user-centric innovation in technology and engineering consultancies. *R&D Manage* 41(1):44–60
- Hsieh K-N, Tidd J (2012) Open versus closed new service development. *Technovation* 32(11):600–608

- Katz ML, Shapiro C (1985) Network externalities, competition, and compatibility. *Am Econ Rev* 75(3):424–440
- Katz ML, Shapiro C (1994) Systems competition and network effects. *Am Econ Rev* 8(2):93–115
- Kaulio MA (1998) Customer, consumer and user involvement in product development: a framework and a review of selected methods. *Total Qual Manage* 9(1):141–149
- Lane D, Maxfield R (1996) Strategy under complexity: fostering generative relationships. *Long Range Plan* 29(2):215–231
- Lusch RF, Vargo SL, O'Brien M (2007) Competing through service: insights from service-dominant logic. *J Retail* 83(1):5–18
- Mustak M, Jaakkola E, Halinen A (2013) Customer participation and value creation: a systematic review and research implications. *Manage Serv Qual* 23(4)
- Nijssen EJ, Hillebrand B, Vermeulen PAM, Kemp RGM (2006) Exploring product and service innovation similarities and differences. *Int J Res Market* 23(3):241–251
- Remneland-Wikhamn B, Ljungberg M, Bergqvist M, Kuschel J (2011) Open innovation, generativity and the supplier as peer. *Int J Innovat Manage* 15(1):205–230
- Rubalcaba L, Michel S, Sundbo J, Brown SW, Reynoso J (2012) Shaping, organizing, and rethinking service innovation: a multidimensional framework. *J Serv Manage* 23(5):696–715
- Russo-Spena T, Mele C (2012) “Five co-s” in innovating: a practice based view. *J Serv Manage* 23(4):527–553
- Schembri S (2006) Rationalizing service logic, or understanding services as experience? *Market Theor* 6(3):381–392
- Schumpeter J (1934) *The theory of economic development*. Harvard University Press, Cambridge
- Stake RE (1995) *The art of case study research*. Sage, Thousand Oaks
- Sundbo J (1997) Management of innovation in services. *Serv Indust J* 17(3):432–455
- Sundbo J, Toivonen M (2011) Introduction. In: Sundbo J, Toivonen M (eds) *User-based innovation in services*. Edward Elgar, Cheltenham, pp 1–21
- Swan J, Scarborough H (2005) The politics of networked innovation. *Hum Relat* 58(7):913–943
- Toivonen M (2010) Different types of innovation processes in services and their organisational implications. In: Gallouj F, Djellal F (eds) *The Handbook of innovation and services*. Edward Elgar, Cheltenham, pp 221–249
- Toivonen M, Tuominen T (2009) Emergence of innovations in services. *Serv Indust J* 29(7):887–902
- Tse E (2002) Grabber-holder dynamics and network effects in technology innovation. *J Econ Dynam Contr* 26(9–10):1721–1738
- Vargo SL (2009) Toward a transcending conceptualization of relationship: a service-dominant logic perspective. *J Bus Ind Market* 24(5/6):373–379
- Vargo SL (2013) Service-dominant logic reframes (service) innovation. In: Isomursu M, Toivonen M, Kokkala M, Pussinen P (eds) *Highlights in service research*, VTT Research highlights 6. Espoo, Finland, VTT Technical Research Centre of Finland, pp 7–11
- Vargo SL, Lusch RF (2004) Evolving to a new dominant logic for marketing. *J Market* 86(1):1–17
- Vargo SL, Lusch RF (2008) Service-dominant logic: continuing the evolution. *J Acad Market Sci* 1(36):1–10
- von Hippel E (1988) *The sources of innovation*. Oxford University Press, New York
- von Hippel E (2005) *Democratizing innovation*. The MIT Press, Cambridge
- von Wright GH (1963) *The varieties of goodness*. Routledge, London
- Westerlund M, Leminen S (2011) Managing the challenges of becoming an open innovation company: experiences from living labs. *Tech Innovat Manage Rev* October:19–25
- Yin RK (2003) *Case study research: design and methods*, 3rd edn. Sage, Thousand Oaks