



Title of paper: **A learning perspective for managing service innovation process in a value network**

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ABSTRACT

The objective of this paper is to describe a new networked and customer-oriented way for service development in business to municipal context, especially from the private service provider's learning perspective. The study was carried out as a case study within Finnish value network of an ICT company, municipal organization and citizens. The study firstly produced a conclusion that the ICT company is undergoing the kind of transition that calls for a profound learning process in the organization, at the operational as well as the strategic level, which changes the organizational culture. Secondly it offers evidence how the traditional roles in producing innovations are changing and that the ICT service providers can work as coordinators of the service innovation processes in the service value network context. There is also a need to find more rapid, open and user-oriented ways to develop services in and between the private and public sector and the end-users. Thus the study provides new insights from practice to theoretical discussion in managing and organizing service innovation processes more interactively in a value network.

FULL PAPER

1. Introduction

We are currently witnessing a radical transformation in business and innovation logic in the ICT industry in Western countries (c.f. Chesbrough 2011). This has mainly been due to massive open source development and cost pressures, which have resulted in a transition by business towards lower cost countries. These critical challenges have pressured ICT companies to find new opportunities,

especially from service business. In order to stay competitive, companies need to change their focus from goods to services, and co-create value with customers (Vargo & Lusch 2004, 2008; Heinonen et al. 2010). At the same time, the public and, especially, the municipal sector, are under pressure to find more efficient and customer-oriented ways to organize, produce, and develop services (Designing... 2009). Citizens have shown growing interest in more active participation in decision-making, while the digitalization of services and social media enables new kinds of services and their co-creation. Hence, the roles of producing and developing services are changing between different players, such as municipalities, ICT providers, and end-users, which were the focus of our interest.

New ways of developing services as networks are therefore needed that consist of business and municipal organizations as well as citizens. It is challenging for ICT providers, however, to define customer value in terms of changing public sector demands, and for private and municipal organizations to understand the profound changes in their core tasks and the way they should manage new service development processes with their partners and citizens.

We see that organizational learning perspectives (cf. Paavola et al. 2004, Saari & Kallio 2011, Halonen et al. 2010) have much to offer to deepen the understanding of the co-creation of services by doing justice to the systemic nature of service innovations and still offer concrete frames of reference. Our interest focuses on *how to manage a customer- and end-user-driven service innovation process in a value network from the service provider’s learning perspective* and on what the key challenges and prerequisites are. This perspective enables us to tackle the challenges and hindrances that may emerge in the transfer towards a service-dominant orientation.

Our aim is to introduce *a new networked and customer-oriented model for service development in business into a municipal context, especially from the private service provider’s perspective*. Our model focuses on three different development levels: 1) managing and organizing service development more interactively within the private service provider organization, 2) creating a co-creation concept for developing municipal services together with municipalities, citizens, and other stakeholders, and 3) piloting the concept together with selected municipalities and end-users.

This paper starts with a brief overview of the research on service innovation processes within value network settings as well as a need for novel approaches and tools to support learning and managing complex co-creation processes within and between parties to highlight the relevance of our study. Secondly, the implementation and main results of our case study are described by illustrating emerged co-creation and service concept and related main challenges and prerequisites from our evolving learning approach. Finally, theoretical and practical contributions are discussed, along with the validity of our study.

2. Theoretical background

Innovation and innovativeness have become a necessity of post-modern organizations. These advanced economies and organizations are competing in a more global and open environment in which the service sector is dominant. It often accounts for more than 70 % of the gross domestic product of countries and employees working in the sector. Western countries can no longer build their competitiveness on low production costs. If anything, their future is increasingly built on knowledge, expertise, and innovative exploitation in organizations and services (e.g., Lemola 2009; Spath & Fähnrich 2007; Strauss et al. 2008). The way organizations explore new knowledge and learn from their past experiences is becoming crucial. Organizational learning can be seen as the principal means for achieving strategic renewal by an organization. However, its potential has not yet been fully used (Crossan et al. 1999; Saari & Kallio 2011).

2.1. Towards co-creating value with customers and open innovation

Within the service marketing perspective, theory development called service-dominant logic has described how companies should change their focus in order to stay competitive: 1) from product- and technology-based innovations to **value-based innovations** and 2) from goods to service and **co-creating value with customers** (Vargo & Lusch 2004, 2008, 2009). Vargo and Lusch (2004) explain how the companies business logic have developed during the Industrial Revolution. The orientation is however shifting away from tangibles towards intangibles, such as skills and knowledge, and towards interactivity and ongoing relationships, further from the producer to the consumer. Further, service-dominant logic first sees the **service as the denominator of exchange**, second, it emphasizes the **process orientation of “service”** rather than outputs of “goods and services”, and third, it states that organizations can only make value propositions. This is because **the customer is inseparable from service value creation, and value is always co-created with customers** (and other shareholders) rather than created by the firm and then distributed. Thus, the innovation logic of organizations is changing from closed innovation logic to **open innovation** (Chesbrough 2003). Increasing amounts of knowledge and expertise are changed, combined, and created in networks of actors. The development of ICT and digitalization has enforced global communication and collaboration. Interaction and learning in networks have become a focal way to organize the economic activities, beside hierarchical organizations and markets.

At the same time, in the public sector of Western countries, especially in municipalities, there is pressure to increase the productivity of services, improve their availability and quality, and, on the other hand, reduce their costs of production. In Finland, public services form the biggest individual service sector and employ a quarter of the country’s labor. The shortage of labor is becoming more severe, and some of the employees already have a greater workload than they can handle (Lemola 2009). At the same time, citizens have shown growing interest in more active participation in decision-making, while the digitalization of services and social media enable new kinds of services and their co-creation.

The municipal sector is under pressure to find more efficient and customer-oriented ways to organize, produce, develop, and buy services (Designing... 2009). This can be seen as a creative source of innovation for private service providers. Similarly a single person or citizen can act as a user, producer, distributor, and developer of the innovation.

Open innovation and service-dominant logic perspectives stress that in services, the attention should be on creating customer experience and involving customers and other stakeholders in the innovation process. Open innovation crystallizes the idea that **innovation takes place in a network of actors** – not within a firm and dyadic relationship between the provider and customer. The stakeholders of open innovation form the ecosystem around a service. The perspective is strongly based on business orientation, not just the idea of information flowing between different actors, from outside in and inside out in the organization. This way, **the role of the service provider becomes more like that of a co-ordinator of the innovation activity** and the service delivery of both internal and external services to the customers (Chesbrough 2003, 2011).

Changing roles in value creation and innovation activity call for a fundamental change by all the parties and individuals involved. From the ICT service provider’s perspective, we have studied the **transition from product-oriented to service- and value-oriented business logic, leading to comprehensive organizational learning challenges in terms of culture and capabilities**. Practically, this means that the deep and partly subconscious perceptions of the organization’s core task should change within the personnel. Transformation can be facilitated by exploring and communicating new core task demands and synchronized development of customer relations, management, service development practices, and service business understanding (Nuutinen & Lappalainen 2011; cf. Vargo & Lusch 2004). A comprehensive and **long-term learning process within and between organizations and actors involved in the value creation** is therefore called for.

2.2. Organizing and managing service innovation processes

It is commonly argued that the nature of services is intangible, heterogeneous, and perishable, and their production and consumption cannot be separated (Zeithaml et al. 1985). When working with services and networked actors, the characters and roles for developing, consuming, and creating value become complex. Consequently, the development of **services and service innovations requires a richer and more customer-oriented and systemic approach than is typical in product development** (cf. Koen et al. 2002).

In service innovations, employees and customers are seen as key actors (den Hertog 2010; Edvarsson & Olsson 1996; Sundbo 2011). The processes in service-providing organizations that support the creation of service innovations are also multi-dimensional and involve numerous organizational and technological dimensions (den Hertog 2010). Yet, the development and management of services should aim to have a strategic focus, to be organized efficiently and

systematically, and involve the customers in the various stages of development (Alam & Perry 2002). Sundbo (2011), however, describes how the innovation activities in organizations are currently mainly organized as ad hoc and project-based, often just with quick managerial decisions. Similarly, the organization and management of service innovation processes in firms are often rather flimsy, because they are based on single actors – employees, managers and users – in ad hoc projects.

Consequently, den Hertog (2010) addresses two current **key problem areas** in **developing service innovations**. Firstly, most of our understanding is still based on the paradigm of technological innovation in a manufacturing setting in which innovations are seen as resulting from concentrated **R&D efforts and linear, well-defined innovation processes**. Toivonen (2010) describes how these so-called stage-gate models dominate the approach. At best, these models have included the customer perspective by using customer information (Alam & Perry 2002). Lately, however, these stage-gate models have been questioned due to their slowness and inward-oriented development within organizations. As an alternative, Toivonen (2010) introduces the concept and model of rapid application. The second problem area that den Hertog (2010) addresses is that we **lack insight from effective organizational routines to manage service innovations at firm level**. He continues to say that we need to gain greater insight into the organizational routines and capabilities to introduce service innovations successfully and repeatedly to the market. The development of these alternative frameworks, concepts, and models that do justice to creating rich and multidimensional service innovations is just at its embryonic stage.

We see that organizational learning perspectives have much to offer to deepen understanding of co-creation processes by doing justice to the systemic nature of service innovations and still offer concrete frames of references.

3. Approaches, model and tools to manage co-creation and learning

Our next goal is to define a model from an organizational learning perspective that describes *how the customer-oriented service innovation process in a value network is created and how it could be managed more systematically and strategically, while still emphasizing the systemic and rich nature of it*. We call our model IDEAX (Figure 1). It is characterized by iterative and social knowledge creating process mediated by concrete pilots, social media and other artifacts in order to create conceptualized and shared new competence (cf. Paavola et al. 2004, Halonen et al. 2010). It also emphasizes the strategic nature of learning (Crossan et al. 1999) and describes how the co-creation process of service innovations, especially when moving towards knowledge-intensive services, can be approached as a co-learning process. The phases of the model are described more in detail in the upcoming case study chapter.

The background of the model originates from our earlier development work at VTT, which was mainly oriented towards creating intra-organizational – yet networked – learning. The main idea was that by creating a networked way of working, evaluating its earlier practices, and combining this evaluation with the foresight of an operational environment, an organization could achieve shared understanding that leads to growing innovativeness, efficiency, and effectiveness. The previous model, called LIFE, is described in a journal article by Halonen et al. (2010). Both these models are **similar** in that they use the ideas of the expansive learning cycle by Engeström (1987, 2001). This is a reciprocal approach to socio-cultural learning (e.g., Lave & Wenger 1991; Gherardini et al. 1998) that considers learning to take place between people, and in the working environment and its situations, actions, negotiations, and use of material artifacts. This way, it is not sufficient for learning only to take place in individuals’ minds but it is embedded and takes place in the development of the activity. In particular, it is concerned with the way the whole activity system is constantly in a transformation process (cf. Paavola et al. 2004). We therefore understand the expansion as a change in the organization’s core task towards value-oriented logic co-creation with customers (cf. Nuutinen & Lappalainen 2011).

What is **new** is that we have now developed our ideas further for use in renewing the service development practices **between** organizations in a value network, in this case, between business and municipal organizations and end-users (citizens). Thus, the role of the customers and the end-users is one of co-creators of the new service concepts and processes rather than just a source of inspiration when evaluating the past activity. For the co-creation of new service concepts together with customers and end-users, we have used service design, prototyping, and social media as tools.

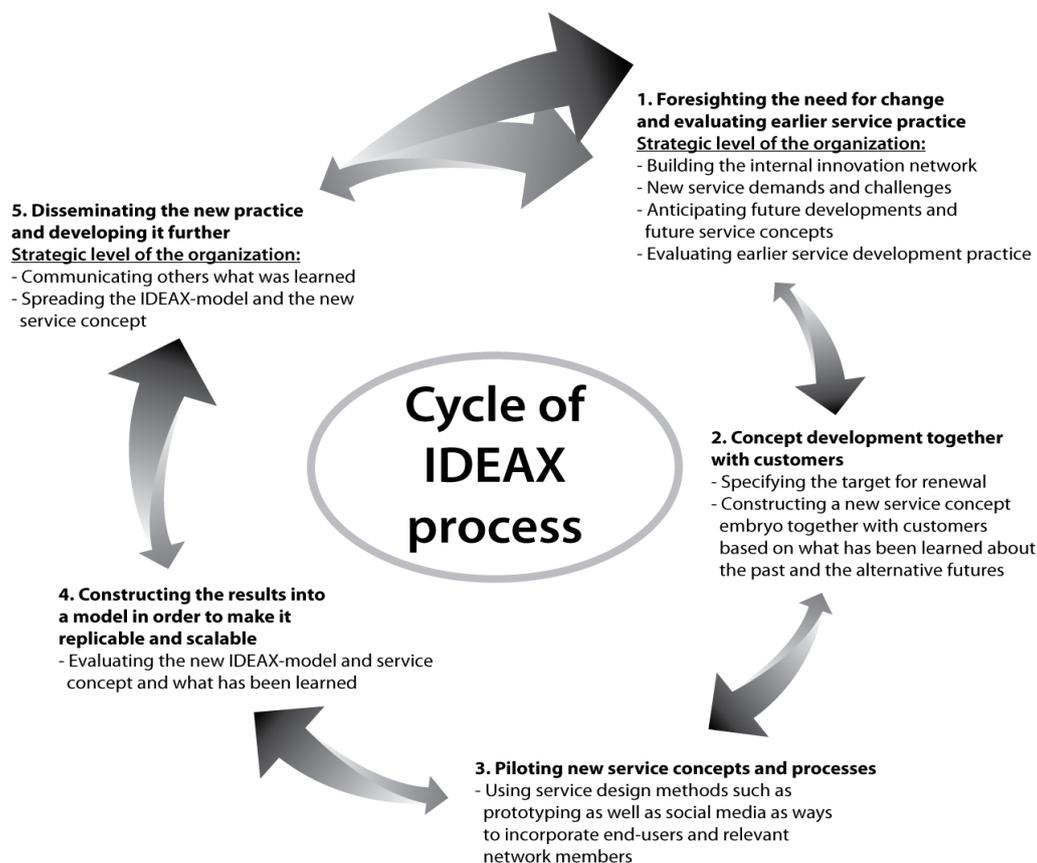


Figure 1. IDEAX model for managing and organizing the co-creative service innovation process – the learning circle of the provider

Service design can be defined as a collaborative, human-centered approach that focuses on customer experience and the quality of service encounter as a key value of success (Saco & Goncalves 2008). It aims to ensure that service interfaces are firstly useful, usable, and desirable for the client and secondly effective and distinctive to the service supplier (Mager 2009). No matter what size an organization is, services tend to be delivered through multiple departments that are designed to support their own operational efficiencies rather than deliver a holistic service experience to the users (Samalionis 2009). Service design aims to clarify the roles of users and providers in the design, delivery, and improvement of any service by utilizing holistic and co-creative visual thinking (Mager 2009, Thurston 2009).

Service prototyping is a good tool, used in service design approach, to help in decision-making. Early phase prototypes enable to test and evaluate a service concept and participate actively in the development work early on. A prototype can quickly and cheaply communicate a service proposition and prompt questions on technical feasibility, consumer desirability, and business viability (Samalionis 2009). Through visual presentations of the service, it is possible to make the immaterial visible and evaluate an abstract idea (Hämäläinen & Lammi 2009).

Social media, on other hand, can be used as an *umbrella term* to cover various user-based practices (Lietsala & Sirkkunen 2008). In most practical definitions, it has been seen as a description of *applications* (Kaplan & Haenlein 2010), enabling the exchange of user-generated content. Ahlgvist et al. (2008) have recognized the three attributes common to all social media: *Web Technologies* that enable *User Communities* to create, view and share *Content* together. It has also been seen as a *process* in which individuals and groups form collective meanings with the help of content, communities, and web technologies (Erkkola 2008). Nevertheless, all definitions of social media emphasize the essential role of users in content-related activities.

Social media has an encouraging effect on users with different experiences and backgrounds to share their opinions and ideas regardless of their level of substance expertise (Van Herzele 2004). Particularly in municipal projects the willingness of citizens to participate is usually limited, because the traditional ways are often felt to be too complicated or bureaucratic. Social media, in contrast, offers an easily accessible and informal way of participation, and adds transparency into the process. Crowdsourcing is seen as an excellent way for citizens to participate in planning and realizing projects in order to use the crowd wisdom to search for an optimal solution (Brabham 2009; Surowiecki 2004). We used crowdsourcing as a method of co-creation through social media.

4. Case study and concluding results

As our case study, we used a (still ongoing) research and development **project** in which our task as researchers was to help a large Finnish ICT service provider to create new business with the idea of more interactive, customer- and end-user-oriented service development practice(s) inside its organization and with a value network. We focused on the company’s business unit that serves the state administration and municipalities as its customers. The development work can be connected to the ongoing transformation in the software industry and lead to comprehensive changes in the business and innovation logic of companies, as presented previously (Chesbrough 2011).

Our role as researcher was to work as facilitators of the process, helping to conceptualize the case under development. The first and second author of the paper specialized in creating and facilitating the customer-oriented service development process in the ICT company and an established value network. We created the IDEAX learning model aimed at renewing the service innovation practices inside the organization, and between the customers and end-users. The two last authors brought knowledge and methods from service design and social media to incorporate end-users and relevant network members into the service innovation process. (see Figure 1.)

We conducted a case study in which we applied the action **research approach** (e.g., Argyris & Schön 1996) as a way to facilitate and analyze the service innovation process from the service provider’s perspective (cf. Yin 1994). As interventions, we facilitated the process with the IDEAX model using, e.g., service

design tools and social media. We collected data on the progress and effectiveness of the process by *participatory observations* in the workshops. Data for participatory observations were gathered by videotaping and drafting memos from our most important perceptions and reflections. The data were complemented with a few interviews of key persons from the ICT service provider and the municipal organization. In addition, content analysis was applied in order to analyze the content produced on the social media platform.

Our case concerning the service innovation process was guided through a learning process consisting of five main phases presented in Figure 1. **So far, we have realized the first three**, which will be described and analyzed as follows.

The starting point for the development was that the ICT company was looking for new business opportunities from the ICT-enabled, web, and social-media-based services. It had conducted this kind of promising pilot, but it was never realized as a new business. Despite the experience, the business unit manager who was involved was convinced that this was the future direction worth pursuing. She and her colleagues wanted to find the best way to organize the new service development to promote the direction of the business unit.

We started the **first phase of the process** by collecting a network of actors, about ten key people from different functions of the business. The internal network consisted of the business unit director, business unit development manager (project manager of the company project), executive advisor, marketing manager, ICT platform and services specialists, business consultants, and sales people for selling solutions to customers. The emphasis was on initiating networking between them and to start to form a shared understanding of the future strategy related to digital services in the public sector. Two roadmaps were drafted on future services to offer. In the roadmaps, the participants described, e.g., service needs emerging from society and markets, the push from technological development, and, finally, identified potential services to meet the requirements and create new business.

At the **second workshop**, the internal network evaluated the previous pilot experience and the lessons learned. The participants further discussed their current ways of gaining and exploiting customer understanding and using customers as co-creators. They also pondered the possibilities that social media would offer to interactive service development and as a new business opportunity. After the evaluation, they moved on to developing further the most interesting and potential innovation embryo together with customers and end-users. The project manager and her partner presented the first draft of the co-creation concept for the participants. As facilitators, we brought a frame to help the participants consider how the roles in this new co-creation concept would change if they were to work in a customer- and end-user-oriented way.

During the exercise, it was revealed that the participants were confused and had different expectations of the main goals and targets of the complex service innovation embryo. Later, as facilitators, we saw that the internal contractions

could not be solved without a **third clarifying workshop**. To facilitate negotiation in the third workshop, we presented the following conceptual frame with three different development levels and targets. We aimed to:

1. Manage and organize the service development more interactively within the ICT service provider
2. Create a co-creation concept for developing municipal services together with municipalities, citizens, and other stakeholders
3. Pilot the new interactive service concept together with selected municipalities and end-users

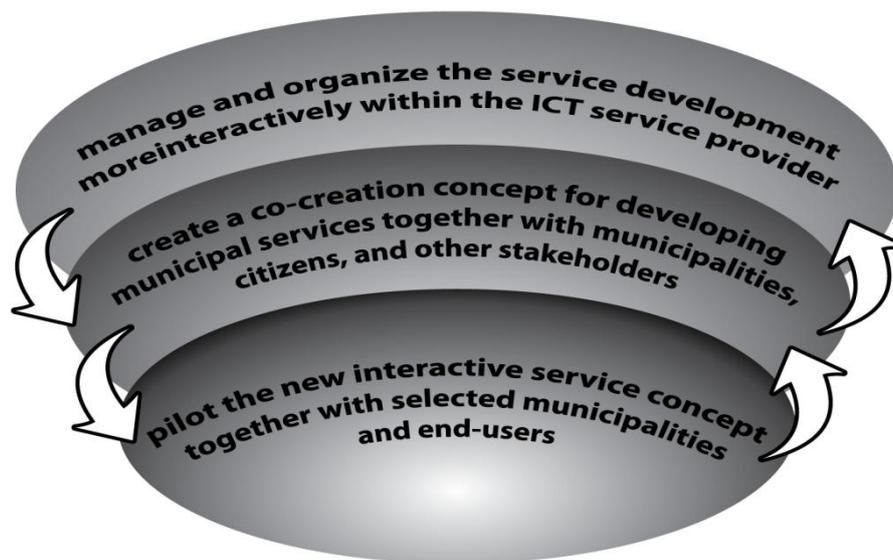


Figure 2. Service Innovation and its development levels: from concept to implementation .

We used this three-level conceptual frame to analyze the multilevel and co-creative service innovation process from a learning perspective. Next, we will present examples of the main challenges and solutions in order to tackle them at each level.

4.1. Internal challenges for the ICT company when pursuing service development more interactively

Inspiring atmosphere and enthusiasm could be noticed in the first workshop when roadmapping and brainstorming new potential services. Though a couple of people also questioned the basic business idea, or seemed to be too overloaded to commit to completely new ideas. The workshop was closed in a feedback session, however, in which people said honestly that they had been a little suspicious at first, but that they had then been inspired by ideation and negotiation. The participants left the room already looking forward to the next workshop.

The second workshop called for shared responsibility and preparation work for the participants. This way, the participants were committed to the process and oriented to the important workshop, which aimed to construct a rough, but shared, framework for the co-creation concept and piloting targets. The preparation work for the workshop was carried out successfully by the core group, but there was a lack of participants in the workshop; people did not show up or arrived late. Thus, the idea of an intensive and collaborative working session was missed. The core group was disappointed when the expected progress did not appear to be achieved. The project manager in particular felt that more “creative chaos” was created. As facilitators, we motivated her to go on communicating the draft in smaller group meetings. It soon became clear, however, that one more workshop was necessary to build a shared understanding of the internal network as groundwork for the new innovation embryo.

Thus, the third workshop focused on specifying the goals, roles, and steps of the project. The aim was to create mutual commitment and an awareness of the comprehensive learning process with uncertainties, innovative spirit, and iterative problem solving, exploration, experiments, synthesis, and feedback loops (cf. Paavola et al. 2004). We started the feedback session aiming to clear the table. We gave each of the participants a change of speech, which revealed the internal contradictions and tensions that the new project had created. They related to: 1) confusion about the person’s own roles, expectations of duties, and new competences along the process, 2) mixing different time spans in the development work with contradicting goal – short-term marketing and new long-term business opportunities (radicalness), 3) incentives and managerial support based on current responsibilities, not future possibilities within networked settings, 4) a lack of strong leadership, 5) conflicting interest in priorities between technology and a process still dominated by a product-oriented culture, and, finally, 6) which customers to serve in the upcoming pilot and whose responsibility it is.

To summarised, all these challenges reflected the early stages of the organizational learning process, started with enthusiasm, questioning, confusion, and tensions in their own expectations and between people who were not used to collaborating with each other. This kind of ideation /fuzzy front-end stage has been identified the necessity to start the innovation process (Koen et al. 2002). It is essential, however, to find the balance between “creative chaos” and goal-oriented foresighting, ideation, and seeking business opportunities. Furthermore, it is crucial to guide the process forward and not to become stuck in the ideation phase.

The presented challenges may also reflect, not only, a part of this specific innovation and learning process, but also more generally, learning challenges related to a comprehensive transition of the company going from a product- or technology-oriented culture towards a customer- and value-oriented one (Vargo & Lusch 2004; Nuutinen & Lappalainen 2011; Chesbrough 2011). This project with a novel aim also called for a novel way of co-innovation, which was not fully understood among the participants or their supervisors. As researchers and

facilitators, however, we had recognized the need for a simple conceptual frame to clarify the different levels of complex innovation and a learning process. Similarly, we found that the introduced frame (see Figure 2), built a shared understanding of the fundamental transformation needed, not only within the company but also in customer relations and the entire value network. It also provided empowerment from the internal network and managers to allow the core group to take action and move on to the customer interface.

The conceptual frame was adopted as a guideline for the multi-level service innovation process. The project manager and core group found *a suitable customer very interested in piloting the new service innovation embryo*. The customer for the ICT company was a city, known as one of the forerunner municipalities in Finland as regards customer and user orientation. Our value network thus consisted of the ICT company as the *facilitator* of the evolving service innovation embryo, the municipal organization aiming to *renew its service practices* towards end-user orientation, and the *citizens as end-users and active co-creators*. The aim of the development in the municipal was established to be playground in the city centre that attracted, particularly, children with families, to come together. The motive for choosing a concrete and well-defined target *was to enable the development and testing of the co-creative innovative processes* in a limited time frame. The city also aimed at learning and gaining *a more general model* how to realize these kinds of processes in the future with other development targets.

Before any end-users were activated to be part of the process, much preparation work had been done. A so-called *back office network* consisted of the ICT company core group, key representatives from the municipal organization, such as the development manager, architects specializing in green areas and building infrastructure, and researchers. For the pilot, the network defined rough front and backstage phases with main tasks and roles for each. The main conceptual and managerial expertise belonged to the ICT provider. However, soon it was noticed that the network need a *moderator to moderate the everyday negotiations in the web platform that was created to enable the co-creation with the citizens*. This clearly reflects the new competences and means that our case co-creation process called for all the parties involved, not just those from the ICT service provider.

4.2. The role of the moderator as an example of the emerged service concept

The role of moderator was identified as essential when negotiating the main roles for the co-creation pilot process with the back office network in the very beginning. The municipal involved had just conducted a pilot project to launch social media as an important tool to enhance transparency and the involvement of citizens in local decision-making and development. An important lesson learned from the project was that a moderator is essential in *guiding* discussions and co-creation on the web platform. The back office network had a mutual agreement that a moderator should be a *local*, and thus be very familiar with local issues and supporting successful involvement of citizens. The importance of local knowledge in decision-making has been stressed in previous studies (Van Herzele 2004). A

person with previous experience of developing local user community web services was found to take responsibility as moderator.

The moderator appeared to be “the right man in the right place”, because despite investing in multi-channel marketing via popular municipal websites and other local forums and relevant focus groups by email and posters, our pilot with a lively website for the *ideation phase did not seem to reach citizens on a broad scale*. Spurred by the back office network, the moderator soon adopted an active role of sparring and guiding discussions and modifying the content along the process. The case of the moderator thus provides a concrete example of completely new competences, culture within the local authority, with sector-specific duties and development practices as well as an evolving local culture of participation in public decision-making.

From the ICT company’s perspective, this kind of local knowledge is crucial when piloting as well as developing emerging service concepts that are generic and applicable to different purposes and customers. Thus at the same time as facilitating and co-creating the emerging innovation process for a concrete pilot target, here the playground in the city centre, the ICT company had to take into account the way these solutions contributed to the emerging generic service concept.

To summarized, the moderator example illustrates that the traditional roles of actors have become increasingly blurred in an emerging networked service concept and business model. From the learning perspective this pilot provided the ICT service company with possibilities to explore and exploit: a) the kind of new competences and services this kind of new concept needs and b) the best ways to produce these services for different purposes and customers. When taking into account the importance of local knowledge, resource use, and involvement of end-users, the main role of the ICT company could be as co-ordinator of a complex and networked co-creation process with the main conceptual and managerial expertise. Thus the main challenge for ICT service provider was, while managing concrete piloting, to conceptualized the lessons learned from the pilot iteratively such a competence easy to apply and communicate internally and externally in different settings, and thus to guide the innovation activity. (cf. Paavola et al. 2004; Nuutinen & Lappalainen 2011; Chesbrough 2011).

4.3. Crowdsourcing in social media as an example of piloting co-operation with end-users

The moderator’s role in fostering the discussion took place entirely on the social media platform, where the crowdsourced tasks were also carried out. In this sample, we talk about the main phases of the co-creation process on the social media platform, though our process included also face-to-face workshops. The main phases were ideation, scenario building, voting, prototyping, and a feedback session.

In late September 2010, we had the first workshop with the citizens. An open invitation was sent to anyone with an interest in co-creating and designing a playground together. The main goal of the workshop was firstly to start the ideation of the playground and, secondly, to gather the thoughts on a web service for co-creation, mutual idea generation, and communication in this context. The ICT company and subcontractor had prepared the first version of the web platform ahead of the workshop. All the material created in the workshop was transferred straight to the platform, and ideation continued there completely open to the public. These new members of the design team were invited to comment on the ideas by sending invitations to different channels and social media groups.

In the beginning of the open ideation phase on the platform, very little conversation was generated. Magnusson, Matthing, and Kristensson (2003) argue that it is not enough just to involve ordinary users; the way it is done is important. End-users have to be activated to problem solve. The back office group recognized and fixed a few problems, which increased the amount of conversation significantly. 1) The moderator’s revision process of the messages sent by the users was removed. A “question of the day” was started to publish to motivate citizens to follow and comment on the discussion more regularly. A visual map of the main phases of the co-creation process was also added to the front page of the web platform to inform the users better about the process and to support long-term involvement.

The idea generation phase lasted three weeks. The results were set into the end-user evaluation in a vote and a radical increase was seen in the number of citizens involved in the project. This happened at least due to few factors: 1) knowledge spreading via word of mouth and continuous multi-channel information 2) easier methods for participation as the platform was developing and the ideas and options were narrowing down.

To summarize, there seemed to be growing interest in using social media in municipal decision-making in order to increase transparency and active involvement by citizens with much potential and growing interest to take part in local issues and service development. In our pilot, social media and crowdsourcing were used to activate the users to participate: create mutual ideas, share experiences and knowledge, and evaluate and vote for the best ideas. Although crowdsourcing on a web platform can be seen as an enhancement to end-user participation, it must not be seen as a replacement for the traditional public participation methods, but as an additional approach to it (Brabham 2009).

Co-creation converts the market into a forum in which dialogue between the consumer, companies, and different networks can take place (Prahalad & Ramaswamy 2004). By piloting co-creation, it is possible to test the new roles of customers and professionals in real life and gain experience and knowledge of possible forerunner ways to produce services. A mutual learning process can be obtained, when doing a concrete service innovation project together: professionals gain a deeper understanding of the users’ real needs, and users learn more about the possibilities and restrictions of the underlying technology

(Magnusson et al. 2003). We learned that it is important to find relevant target groups as well as to build general, conceptual contributions along the concrete pilot project in order the results to be apparent to all stakeholders also in the long term.

5. Conclusion and discussion

This paper focused on describing *a complex customer- and end-user-driven service innovation process in a value network from the service provider’s learning perspective*. We introduced the IDEAX model as a systemic, theoretical, and practical framework describing how to organize and manage this kind of co-creation process.

In our empirical study, we presented a three-level conceptual frame that was found to be useful for defining the complex and multi-level development target together with the ICT provider and customer. We firstly focused on creating an interactive and networked service development practice in the ICT provider. Secondly, we moved on to creating a co-creation concept for developing service innovation together with municipalities and end-users. Finally, we piloted the service innovation concept. We found that the multi-level frame worked as a feedback loop, as the testing level (level 3) further defined the service and co-creation concept (level 2) and supported fostering of the interactive management model of the new service development in the service-providing firm (level 1).

Similarly, that progress could be analyzed as the first three phase of the innovation process in order to make the emerging service concept replicable and scalable in the ICT provider. Furthermore, we see that the *co-creation process of service innovations, especially when moving towards knowledge intensive services, can be approached as a co-learning process*. Our learning approach is characterized by iterative and social knowledge creating process mediated by concrete pilots, social media and other artifacts in order to create conceptualized and shared new competence (cf. Paavola et al. 2004, Halonen et al. 2010). The special attention was paid to the main learning challenges related to a comprehensive transition from a product- or technology-oriented culture towards a customer- and value-oriented one (cf. Vargo & Lusch 2004; Chesbrough 2011; Nuutinen & Lappalainen 2011). As the main results, we conclude *three main challenges*.

First, we conclude that the ICT firm is undergoing the kind of *transition* that calls for a profound *learning process* in the organization, at the operational as well as the strategic level, which changes the organizational culture, at the same time. The respective transition towards a customer- and value-oriented organization could also be identified in the municipal organization, relating to comprehensive changes in the core task of organizations in their dynamic environment (see Nuutinen & Lappalainen 2011). Traditionally, professionals have been characterized as the persons “who know best” the subject under development and work independently with it. If the expert organizations are going to change their

mindsets and operations towards customer- and value-oriented ones, *practices* need to be developed collaboratively and services co-created together with customers and end-users. We also found evidence to support the fact that the role of the ICT service providers can change towards *co-ordinating* the service innovation processes with the main conceptual and managerial expertise (cf. Chesbrough 2011). The challenges perceived in our case company greatly reflected this comprehensive transition.

The second conclusion relates to the *changing roles* in the service innovation processes. We found that, in particular, big organizations offering services had the resources to co-ordinate the processes and create the necessary networks. Our case organizations learned that they did *not need to do everything by themselves*. The ICT provider noticed how it could use the local resources to co-ordinate the innovation process, particularly the moderator’s role proved to be valuable. New role divisions also created business possibilities for local entrepreneurs and associations. In big organizations, however, a major challenge related to the learning achieved in this kind of pilot is to bring the experiences back to the conceptual and finally to strategic level of the organization and use them systematically to improve the organization’s knowledge and practices (cf. Crossan et al. 1999). In our IDEAX model, this kind of learning is included in the upcoming phases.

Our third conclusion is that the organizations should find *more rapid, open and user-oriented ways to develop services* in and between the private and public sector and the end-users (cf. Toivonen 2010). We found that co-creation and interaction supported by *service prototyping and social media are good tools* to develop better services and to co-create value in this kind of network of actors however. Interaction between the organizations and the end-users can be realized in any phase of the process (cf. Alam & Perry 2002). Our case study indicated that using these new tools brought many opportunities regarding new, more open ways to work between the parties and to change the roles to produce the services. In the paper, we also aimed to offer new insights into developing Finnish municipal services in a more interactive, user-oriented, and effective way.

Our study was conducted as a case study in which we applied the action research approach (e.g., Argyris & Schön 1996, cf. Yin 1994). Complicated phenomena relating to the organizations, such as learning processes, require a qualitative research approach that enables the human activities and social processes to be tackled. It is typical in the case, and especially in the action research approach, to understand the studied organizations, their processes, and interaction in a holistic way, in a real environment where the multidisciplinary approach is benefited. The researcher and the research process are themselves the criteria on which to judge the *validity* (Koskinen et al. 2005). In this case, the validity is strengthened by describing in detail how the case proceeded and data was collected. The analysis was also conducted in a group of researchers circulating the ideas.

Further studies are needed to analyze co-innovation in value networks in different contexts and to stretch the analysis all the way to the end-users. It states that

knowledge-intensive business services (KIBS), typically enabled by ICT tools and platforms, have the most important role in the growth and internationalization of service sectors. These services have in common, for example, their innovation orientation, ability to create new innovations in close contact with customers, and mediating/diffusing these innovations to other organizations (Lemola 2009; Toivonen et al. 2008). We found that there is a need to acquire a deeper understanding of the input of KIBS into their clients' innovation processes and the ways in which these collaborate and co-learn during the processes. Like Lemola (2009) summarizes the investments aimed at the innovativeness and learning of these organizations primarily to create prerequisites to compete successfully also in the future.

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