Co-innovation in public services: Planning or experimenting with users?

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ABSTRACT

Renewing public services is topical due to growing service needs and financial challenges in the public sector. Recent studies suggest that user-driven approaches could be an important success factor for creating service innovations. However, empirical studies of the processes have remained rare. Previously, stage-gate models of innovations – with in-depth, thorough, in-house planning – seemed to be dominant, but also rapid and open models have emerged. We address the research gap by studying: for what kinds of innovation targets are each of the two processes, planning-oriented (stage-gate) and rapid experimenting suitable, and how do they encourage radical innovations? We conducted a qualitative case study by comparing four pioneering renewal cases from two Finnish cities. All four included citizens, defined here as users, and several other stakeholders. Cases were selected as illustrative extracts of the different types of innovation approaches and processes. One city applied a more traditional planning-oriented (stage-gate) process organized by the municipality, and the other city applied rapid experimenting designed more freely by the users. They sought new solutions to the topical problem of youth unemployment, and to foster dialog between generations. Our study contributes to further development of user-driven and collaborative aspects in innovation models in the public sector.

Keywords: co-innovation, public sector, service innovation, user-driven innovation

Introduction

The role of innovation is viewed as crucial in all developed economies. Innovation increases competitiveness, and a growth strategy based on innovation makes it possible to foster employment and welfare on a larger scale. Currently, actions supporting innovation have also been increasingly emphasized in the development of public services (e.g. Albury, 2005; Hartley, 2005; Sundbo and Toivonen, 2011). At the same time, the modern, broad view of innovation emphasizes that innovations are embedded in social activities, accumulating on the basis of small, everyday actions, and resulting from an uncertain and complex process among multiple actors (Kline and Rosenberg, 1986; Lundvall, 1992; Sundbo, 1997).

This broad view of innovation is a prerequisite for the understanding of service innovations, since a service is a process that develops in use (e.g. Grönroos, 2008; Bessant and Maher, 2009). Recent innovation and new service development studies show growing mutual interest in bottom-up and user-driven innovations via social participation and combining local resources for better services (Bäck et al., 2013; Hasu et al., 2011). When the population in Western economies is ageing, economic growth is uncertain, and dependency ratios are deteriorating, public services must be produced with fewer resources, but more effectively and without endangering quality. It seems, however, that public stakeholders face challenges in the ways of developing, producing, and diffusing innovations (Carstensen and Bason, 2012; Albury, 2005; Hartley, 2005; Rogers, 2003).

In general, different types of open and more rapid innovation models are currently being sought as alternatives to in-house and planning-oriented, sequential innovation models (Chesbrough2010; Engwall et al., 2001; Toivonen, 2010). User involvement has been acknowledged to impact positively on the innovativeness of organizations; it can act as an accelerator of innovation processes, and as a source of new, more radical ideas (Alam and Perry, 2002; Blazevic and Lievens, 2008). Consequently the innovation activity is not controlled by the producing organization alone; the innovators can even be the users themselves (Heinonen et al., 2010; Sundbo and Toivonen 2011; Jeppesen and Molin, 2003; Brand, 2005).

In the public context it seems, however, that many innovation topics have remained unfamiliar. Firstly, innovation targets and the radicalness of innovation outcomes have remained under researched (Bessant and Maher, 2009; Albury, 2005; Hartley, 2005). Secondly, only a few studies have been carried out on the processes of producing innovations, and on the roles of users (citizens) in these processes (Sundbo and Toivonen, 2011; Hennala et al., 2012; Brand, 2005). Our research aims to tackle these research gaps, and has three main aims: 1) to clarify public service innovation as an outcome in terms of the target and radicalness; 2) to study the applicability of alternative innovation process models – planning-oriented (stage-gate) and rapid experimenting models – in the public context; and 3) to analyze the role of users in these multi-agent co-innovation processes.

Our study is a qualitative case study conducted in two cities in Finland. Over recent years, these cities have taken steps towards user-driven services and the involvement of citizens in co-development, at both strategic and practical levels. Four user-driven cases have been selected to represent different types of co-innovation approaches and processes as empirical examples of organizing the innovation activity. Our study thus contributes to the further understanding and development of co-innovation models from a user-driven perspective in the public sector.

Dimensions of service innovation in the public context

Despite the rapidly growing attention paid to innovation in services, only a few studies have defined the concept itself. One of the exceptions is the article by Toivonen and Tuominen (2009), which focuses on service innovation as an outcome of the innovation process. The article provides the following definition based on the classic Schumpeterian approach: "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 derives from the added value that the renewal provides to 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)" (Toivonen and Tuominen, 2009: 893).We consider this definition applicable in the public context too, adding however that in the public sector, innovations include strong social and value aspects, and are often systemic in nature (Kivisaari et al., 2013; Hartley, 2005; Bessant and Maher, 2009). For example, if service production is decreased and costs cut in one service area, societal problems– with increasing cost pressures – may emerge in another.

In this section, we discuss in more detail the different dimensions of innovation in public services as an outcome. We focus on two interlinked dimensions: the target of the renewal and the radicalness of the renewal.

The target of a renewal – what can be changed

A model developed within the approach of New Service Development is particularly illustrative in analyzing the target of the renewal in services. According to Edvardsson and Olsson (1996), a service includes three basic components: the service concept, the service process, and the service system. The service concept relates to the way in which a solution is principally built up in order to fulfill a need; the service process describes the chain of activities to be carried out; and the service system refers to those resources required to realize the concept. Renewal in either or all of the components can act as a locus of innovation.

In public services we see the Edvardssonian model needs to be supplemented with considerations linked to the broader context of the political and regulatory environment of different levels (e.g. organizational, city, and governmental levels). The targets of development may differ among different stakeholders, and the decision-making practices and organizational cultures further complicate the situation (e.g. Bessant and Maher, 2009; Hartley, 2005; Kivisaari et al., 2013). Thus, the pursuit of renewal in public services must take account of the different, even conflicting, drivers related to policy, professional, and managerial issues.

The radicalness of a renewal – for whom is the renewal "new"

Newness is a relative concept: what is new in one context may be an everyday practice in another. In the public sector, the adoption of many innovations (e.g. applications of self-service) long used in the business environment may be regarded as quite radical renewals – some in a positive sense, others negative.

On the other hand, several researchers have argued that innovations in the public sector are mainly incremental, created by professionals to improve performance and the lives of service users (Albury, 2005; Brand, 2005; Hartley, 2005). These are relatively minor changes and adaptations to existing services and processes that are nonetheless vitally important. It appears challenging to create more radical innovations in the sense of cross-sectorial synergy building, in spite of increasing efficiency pressures. The creation of systemic service concepts and processes also seems difficult, even though both researchers and practitioners have highlighted their importance for a more comprehensive response to service users' needs (Hennala et al., 2012, Rubalcaba et al., 2012; Sundbo and Toivonen, 2011).

A further problem in the public sector is that the diffusion of innovations is often weak and local in nature (Carstensen and Bason, 2012). This phenomenon is contradictory: business innovations that should be protected are imitated much more effectively than social innovations that call for imitation. It is suggested that in public services, different networked and user-driven models would be the most effective way of creating innovations that are cross-sectorial and cross-regional (Hartley, 2005; Brand, 2005).

In addition to the analysis of service innovation as an outcome, a deeper understanding is needed regarding how these innovations can be created. Thus, in the following, we turn to the issue of alternative processes for generating service innovations in the public sector. Essentially, we focus on different user roles in co-innovation processes.

Two alternative processes for service innovations in the public sector – how to create these with users

In general, innovation and service scholars have stated that the capability of an organization to innovate depends on its ability both to cooperate internally and to utilize knowledge and competencies produced externally (Chesbrough, 2010; Jeppesen and Molin, 2003). In particular, highlighting of the role of users has prompted the search for different types of collaborative and flexible innovation models. There are two main ways in which user-driven innovation has been understood in the literature: taking user needs as the starting point of development, and perceiving users as innovators (Sundbo and Toivonen, 2011).

Innovation activity in the public sector has, for its part, long relied on somewhat stiff sector specific, political, and top-down mechanisms, rather than flexible and empowered bottom-up practices (Carstensen and Bason, 2012). However, ggradually, the situation is changing: both employees and citizens (defined here as users) have become more active in innovation (Bessant and Maher, 2009; Hartley, 2005; Hasu et al., 2011).

However, there is a lack of research in different co-innovation models in the public sector from process and user-driven views (e.g. Brand, 2005). In the following, we explore two alternative innovation process models called a planning-oriented (stage-gate) and rapid experimenting.

Reliance on planning managed by state authors

Innovation activity in public services is characterized by political, multi-stage planning-orientation prescribed by laws and pre-defined decision-making procedures (Carstensen and Bason, 2012). The democratic decision-making system especially in the Nordic countries has supported public welfare and local participation, but resulted in incremental innovation activity. The involvement of citizens in innovation activities has been legitimated by the means of representative democracy, formal procedures of hearing, and service-specific feedback mechanisms (Hennala et al., 2012). Service users have been thus seen as rather passive informants when ideating or evaluating existing services (Lehtonen and Tuominen, 2012; Brand, 2005). In that way, the opening public service innovation model resembles, in many ways, the planning-oriented (stage-gate) model discussed in innovation studies.

The traditional approach towards the innovation process relies on pre-planning, and organizes development in a sequential manner. In the literature, this is usually referred to as a stage-gate approach. The following main phases are generally separated: 1) the emergence of an idea at the fuzzy front end; 2) the development of the idea; and 3) the application of the idea to the markets, and thereby to the users (de Jong and Vermeulen, 2003).

The stage-gate models have, however, been criticized for their slowness and inflexibility. Their provider-centric nature has been considered particularly problematic for services in which close contacts with users are essential. Furthermore, the order of stages often differs: innovation can start from a change in practice, instead of from a specific, recognized idea (Toivonen, 2010). It has also been pointed out that stage-gate models focus more on the structure of development, not on its content (e.g. Engwall et al., 2001). This focus is manifested, for example, in the fact that the outcomes are expected to be implemented within a pre-defined time frame (Strandvik et al., 2012).

However, stage-gate models have been modified based on the critique. Alongside the increased understanding of the innovation potential of users, newer models have been developed in a more open and flexible form. The most important modification is that of Alam and Perry (2002), who show how the input from users can be utilized at each stage of service development. In the public sector, urban planning provides good examples of users playing an active role in such a planning-oriented co-innovation process concerning their daily environment and related services (Bäck et al., 2013).We apply this view in our empirical study when examining co-innovation processes that proceed systematically from idea to launch. The process is managed by the cities, but they seek novel ways to involve users.

Emphasis on rapid experimenting and empowering users

Even though co-development with users has been increasingly discussed in recent literature, the participation seems challenging in public service development in practice (e.g. Brand, 2005; Hartley, 2005; Smith and Fischbacher, 2005). However, users have shown increasing interest in societal issues and a willingness to take an active part in decisions related to their day-to-day life and environment. While e-government solutions present top-down services that support current political processes, for example, social media may create new possibilities for bottom-up innovation (Bäck et al., 2013). The variety of roles of users in innovation and their resource potential are gradually realized in order to serve increasingly complex user needs and to seek effectiveness with diminishing public resources. However, we suggest that in order to encourage user involvement, more agile and bottom-up models of co-innovation need to be explored and exploited.

Alternative innovation process models rely on rapid experimenting: the emerged idea is tested immediately in the markets. If it receives approval, the idea is developed further. In this way, the innovation process is integrated into service practice and into co-development with users (Toivonen, 2010; Heinonen et al., 2010). Knowledge-intensive co-innovation is characterized by dynamic interaction among different interest groups or individuals occurring in practice through concrete and collaborative experimenting, experience and renewal. Rapid experimenting focuses on the development of the content (Engwall et al., 2001) and the right timing of the renewal (Strandvik et al., 2012).

The rapid application model seems to be, however, rarely studied in the service context, and even less so in public services. Indirectly, the emphasis on users as innovators means that the power in the development is shifted to the users who "own" the innovation process (Heinonen et al., 2010; Brand, 2005). However, the nature of the process and the interaction with the provider has not been explored in detail in such a situation. Our case studies aim to narrow this research gap. Our main research questions are: 1. for what kinds of innovation targets are each of the two innovation processes suitable? and, 2. how do these two co-innovation models encourage radical innovations?

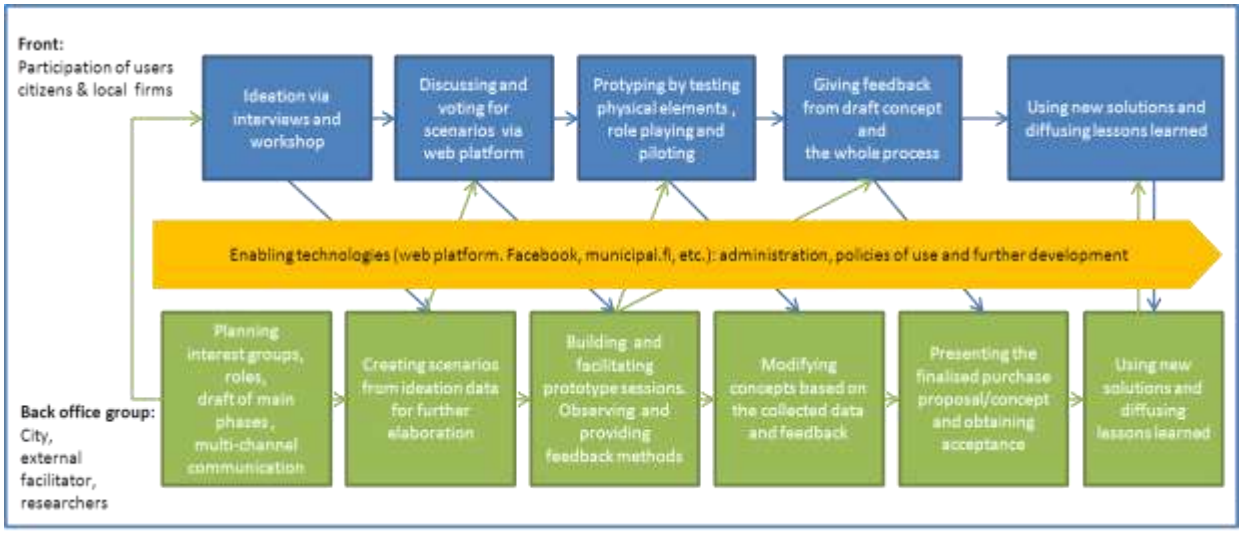
Research design: aim, context, and methods

For our study, we applied the case study approach (Yin, 2009). Based on our research target, the four cases in two medium-sized Finnish cities were selected as illustrative extracts of the different types of innovation approaches and processes. These cities have pursued user-orientation in their strategy and their intentions have been considered as pioneers in different national forums. Through these pilots, both cities sought new solutions to the topical problem of youth unemployment, and aimed to foster dialog between generations. Four cases were conducted between August 2010 and May 2012. Common criteria in the case selection were the following: 1) the innovation process included a multi-agent network consisting of city representatives, citizens, and local SME companies; 2) the development work had been finalized to allow examination of the nature of the process; 3) some novel and replicable elements had been created as an outcome; 4) the cases brought benefits in a wider range than just for their developers, and included an interesting model for co-innovation.

The *cases A and B represent planning-oriented (stage-gate) processes* (Figure 1). Case A was about co-designing a meeting place in a city market square. Case B focused on a new model for employing youth in collaboration involving local SMEs and unemployed young people themselves. The aims included both practical end results and the creation and testing of a general model of co-innovation. In addition to a development manager, the city representatives were managers, designers, and advisors related to the developmental targets. A technology-oriented KIBS (knowledge intensive business service) company, interested in offering new kinds of services for the public sector, acted as an *external process facilitator*. The city representatives and the facilitator formed a *back office group*, which managed and provided facilities for the co-innovation process. In Case A, the co-innovation process was open to all citizens; in Case B, the participants consisted of young people, their advisors, and representatives of local SMEs.

The first two authors of this article have been involved in cases A and B from their planning to their current state. These two empirical case studies were carried out in the form of participatory action research (McIntyre, 2008) as a way of supporting the external facilitation, experimenting with changes in service development practices, and analyzing the development. More specifically, the roles of the researchers in these cases were to *support the dialog among the network parties* by bringing supportive methods to different phases of the process, such as to ideation and prototyping. The researchers conducted interviews of the involved key city representatives, service users, SME company representatives, and the external facilitator. Materials from the workshops, including memos and observation documents, were used as supportive material.

Figure 1: Outline from the Main Phases of the Co-innovation Process in Cases A and B



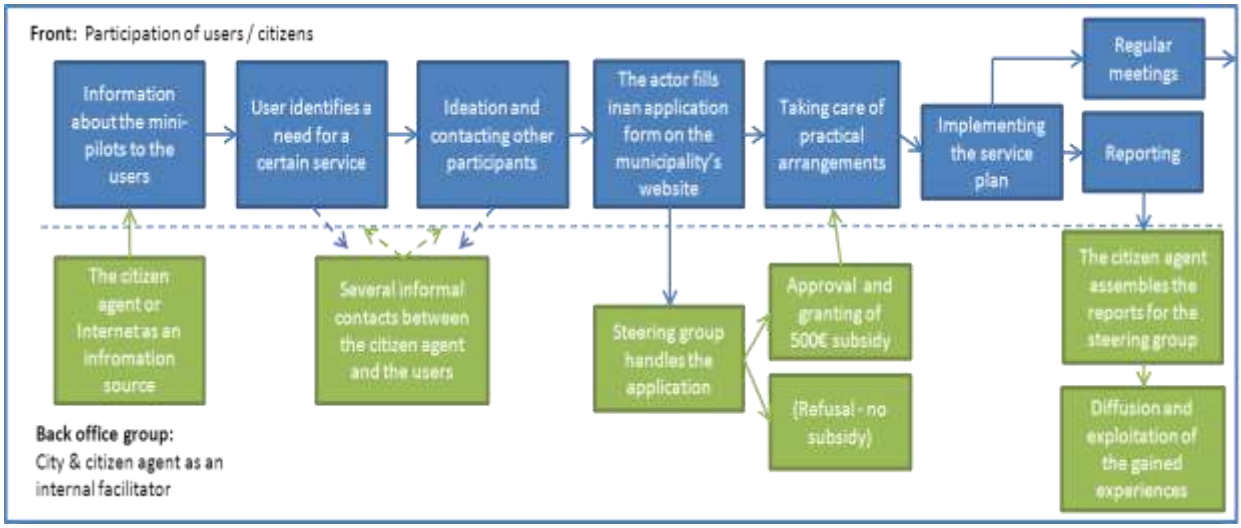
Source: The authors

Cases C and D represent examples of rapid experimenting (Figure 2). They were selected based on the selection criteria from a broader group of 'mini-pilots' being carried out by our second case city and its citizens. Case C is a 'life-cycle café' maintained voluntarily by senior citizens once a week, in facilities for young people. The young people correspondingly help the seniors to learn IT skills. Case D is called a 'sports club' and is also run voluntarily, by two young men. The club is targeted at activating young men who are in danger of or who are already displaced. The city has developed mini-pilots into novel experiments for citizen empowerment. Two or more groups of people can start an experiment that must result in some novelty in a process, product, or service. If the application for a mini-pilot experiment is approved, the city grants the actor €500 to execute the plan. The key elements of the mini-pilots were low bureaucracy in the application and reporting process, and user ownership of the innovation process. The city has employed an *internal facilitator*, or 'citizen agent', for the experiments. Her responsibility is to meet the citizens face-to-face, and inspire and encourage them to develop their own community themselves via mini-pilots. The citizen agent is the main source of information for the managers in the city, and also for the citizens.

In cases C and D, the third author worked as the researcher. Interviews of the key actors (mini-pilot actors of citizens as users, and the steering group members as city representatives) formed the main material. Based on this material the researcher rendered blueprints of the mini-pilot processes (Bitner et al., 2008). Other documents, such as memos from the observed meetings, mini-pilot applications of the users and reports, were used as complementary research material.

In all four cases, the interview topics were related to gauging interviewees' opinions on the co-innovation process and outcomes. Topic formulation was guided by the nature, benefits, and challenges of different process models discussed in the literature.

Figure 2: Outline from the Main phases of the Co-innovation Process in Cases C and D



Source: The authors

Questions were asked related to how the collaboration was conducted, what phases it had, what was novel or difficult, what different roles there were, and what was produced as outputs. The total number of the interviews used in this study was 59 (in cases A and B 48 people and in cases C and D 11 interviewees). Interviews were tape-recorded and later transcribed. Firstly, we analyzed individual cases and identified case-specific features. Alongside this, we built a comprehensive picture of their co-innovation processes (see Figures 1 and 2), including the roles of the main interest groups and the outcomes. Secondly, we compared the cases by defining similarities and differences between cases according to our research questions. The qualitative analysis was conducted iteratively through classifications, and testing and redefining empirical data through dialog with the theoretical constructions of co-innovation.

Main results

In order to answer our research questions, we built a framework combining process and outcome perspectives of co-innovation in public services, derived from the theoretical background. In Table 1 the main empirical findings are presented.

Table 1 illustrates empirically the main differences between planning-oriented (stage-gate) and rapid experimenting co-innovation approaches in terms of their development targets, radicalness of renewal, and roles of the involved users, municipalities, and facilitators. Interestingly, the experiences and views of the interviewed users, city representatives, and facilitators were quite in line with the suitability for public service co-innovation of these different approaches. The role of SME representatives was not a focus of this study, being involved in only cases A and B.

Table 1: Main Findings from Co-innovation Process and Outcome Perspectives

Types of co-innovation process – HOW **Dimensions of innovation outcome:**	**Co-innovating with users (planning-oriented stage-gate model):** Case A "Meeting place for market square" and Case B "Networked youth workshops"	**Co-innovating with empowered users (rapid experimenting model):** Case C "Life-cycle café" and Case D "Sports club"
The target of renewal – WHAT	Users ideated the targets and tested alternative solutions within a given framework provided by the city representatives and with given means, such as in workshops, trough collaborative web platform, and prototype sessions.	The target was to be defined rather freely by the users based on their needs (necessary to apply from the city: if accepted, €500 was granted as a renewing resource) and level of commitment.
	Users acted as informants and collaborators in innovating.	Users were innovators and owners of the processes.
	The target related to the service concept and networked co-innovation process: Case A had a mundane and Case B a more abstract target. The latter resulted in challenges in the collaboration and long term user commitment: in order to work, changes are required in the service system.	The target related to the service process, concepts, and new ideas for renewal in the service systems: novel solutions for developing and producing single services, despite rather operational targets. Users executing the new solutions concentrated on mundane, but nonetheless topical, issues.
The radicalness of the renewal – TO WHOM	Applicability of the created co-innovation process: to the city for the local multi-agent networks and respective city contexts. Responsibility for local diffusion was taken by the city development manager, who also shared the co-innovation model with her colleagues in other cities. The external facilitator created new business on the strength of the interest in marketing the co-innovation model for other cities.	In Case C the service itself, and in both cases C and D the way of producing and ideating the service. Both cases were local and reached a relatively small group of stakeholders. However, there were altogether over one hundred "mini-pilots", and the city communicated the approach actively on the web and in national forums for boosting public service innovations. The role of the internal facilitator in encouraging and inspiring was highlighted. The key challenge is how to learn from the experiments, both within the city and more broadly.
	The focus in the cases was on time framing – the development of new solutions in the long run. The challenge is to maintain user motivation in the long process.	The focus was on the right timing – to co-innovate solutions for topical daily issues that are motivating for the users.
	Requires more resources for development from the city's perspective, rather than that of users. The challenge is to combine top-down and bottom-up interest and activities.	Requires more resources for development from the users' perspective, rather than that of the city representatives.

Source: The authors

Based on the analysis, it became clear that the planning-oriented (stage-gate) and rapid experimenting types of innovation processes have different logics. *Planning-oriented stage-gate models* enable the systematic involvement of users in the innovation process, and create a structure for collaborative development. The power of organizing was

left to the city but applied participative methods served several aims and preferences of interest groups. Thus, in addition to practical renewals, the approach encourages more open and mutual dialog between city's employees and users, in addition to some company representatives. For the city's employees, exploration of participatory practices, new competencies, and shifting of work roles from sector and expert-orientation toward user- and network-orientation were enabled. As one interviewee mentioned, public officials can lose touch with peoples' everyday lives, and these approaches enhance equal dialog and mutual respect for each other's competence and experience.

Users also found the new co-innovation processes and methods inspiring. In Case A, the prototype exhibition for children was extremely popular and was described as providing a concrete opportunity for user experience, as two participants, a parent and a senior citizen, summarized:

'Children also appreciate being heard, they were very enthusiastic about giving their vote and commenting on the playground being developed'.

'*There's still a lot of prejudice between people and public authorities…It's not easy for people to be active participants because the means available are so distant from their daily life…but I've seen it working here, we just need more of these kinds of opportunities to break the boundaries'.*

In Case B, the application of technology-assisted prototyping helped unemployed young, their advisors, and SME company representatives to: '*understand service encounters from different views and discuss problems and development needs openly and collaboratively'* –as an interviewed advisor said.

However, it became visible how planning-oriented approach requires a lot more activation from the service providers' (city's) perspective. Even when developed in a more flexible and user-driven direction, planning orientation demanded significant resources and time. In the cases A and B, an external facilitator was involved and it was considered important. Without, the approach would have required the city representatives involved to possess strong co-development and strategic capabilities. Thus, our analysis supports the views that in this approach, problem clarification, process facilitation, and diffusion of innovations can benefit from new types of supportive actors (Kivisaari et al., 2013; Brand, 2005). The development manager of the city summarized well the broad vision behind these two cases*:*

'*I see that the approach where administration is more like an enabler and one actor of multi-agent networks will be the future. Unfortunately today we used to start the development work with the attitude that administration fixes, instead of starting with needs and resources our citizens have. In the future the role of citizen will be increasing. We have to identify their resource potential and encourage utilization in a totally different way'.*

Based on our empirical analysis, the *rapid experimenting approach* on its part seemed to be suitable when seeking active user involvement in local service development and enforcement of community spirit. However, the benefits and outcomes of this kind of activation seemed diverse. For example, a senior citizen, who is an active volunteer in the life cycle café (case C), mentioned:

'(Despite being local) this is also some sort of youth work done for the city, because they don't have to employ anyone to coordinate this. This is an addition to youth work and in that sense, this is really good.'

The coordinator of the sports club (case D) described the resources required and benefits gained of a mini-pilot in the following way:

'Even such a mini-pilot, when it is started, it demands a proper work contribution from me and it also needs to be well organized, a mini-pilot is much bigger than the 500 euros. There are so many partners in cooperation, benefactors and everything…'

In a similar way, another active volunteer in the life-cycle café (case C) said:

'These [mini-pilots] are remarkable. I can't stop thinking about the great impact that this whole project has had, especially here in this area, even though this was not about a big amount of money…'

Actually, in the cases of rapid experimenting it was shown how the role of the user is empowered not only for co-innovation, but also for the service production effort. The citizens took in a novel way responsibility for ideating and organizing the local services. This way the relationship between the users (citizens) and the provider organization (city) renewed more radically than compared in the planning-oriented cases. However, it became clear how this approach requires internal user motivation and development needs. In addition, when applying user-driven rapid experimenting, it seems that benefit can be derived from new facilitative actors; their role merely appears to differ slightly from the planning-oriented approach, becoming one of encouraging the users. This way the city can empower the users not only to ideate but also to organize and execute renewals (c.f. Brand, 2005).

Conclusions

Despite the growing interest of practitioners and theorists toward public service renewals, in other words innovations, studies examining the processes of creating innovations and the roles of users (citizens) in these processes seem to be rare. We narrowed this research gap by studying both theoretically and empirically, as illustrative extracts, the applicability of two types of user-driven co-innovation processes to public services: a planning-oriented (stage-gate), and a rapid experimenting process empowering users. We firstly asked, for what kinds of innovation targets each of the two innovation processes were suitable, and secondly, how these two co-innovation models encouraged radical innovations.

To conclude, our case studies firstly reflect how both of the applied co-innovation approaches demonstrate the ongoing shift in paradigm in Nordic public sector toward more open and equal interaction between city representatives, citizens, and local companies (Bäck et al., 2013; Hasu et al., 2011). Further, the *planning-oriented co-innovation process* seems to create a situation of learning *with* the users; thus mutual dialog and respect for each other's competence and experience must be learned. In rapid *experimenting process empowering* the users, the task for the city then becomes learning *from* the users – their novel ways of innovating and producing the service. Common in both cases, that was especially noticed in the cases of experimenting, the role of the city actors is to *bridge* the lessons learned to the more strategic city level, in order to create more profound changes and effectiveness. This way the processes of co-innovating can become more systematic and strategic that has been seen as one of the most important challenges in innovating in public sector (Carstensen and Bason, 2012).

Secondly, we can conclude how it seems that *the complexity in a target of renewal*, its specific characteristics, and the magnitude sought after, defines the nature of suitable co-innovation activities. The planning-oriented (stage-gate) approach seems more suitable for rather complex, strategic development targets that can attract investment in the co-innovation process as such. Rapid experimenting seems to better suit local activation, where the citizens take responsibility for conducting the renewals close to their own interests.

However, our empirical results suggest that in the user-driven rapid experimenting processes, more *radical seeds for innovative outcomes* were generated. Thus, it seems that by empowering users (citizens) ready to solve issues close to their own objects without a strong presence of the state actors it is possible that more innovative solutions may occur (Glor, 2005). Moreover, this resulted in the rapid experimenting cases as a more radical renewal in the *relationship* between the service provider and the user in developing and producing the service. Thus, based on our results –and in addition to the discussion of to whom the service is "new" – the *change in the logic* of producing and developing the service appears to refer to the radicalness of renewal in the public sector (e.g. Vargo and Lusch, 2004; Grönroos, 2008). Our research findings therefore bring new insight to the topical question both in theory and practice of how to support the creation of radical innovations in the public context (Bessant and Maher, 2009; Hartley, 2005).

In practice, even though the studied cases were local, for example, solving the issue of displacement at the personal and city level, they also engaged in the topical, national issue of youth displacement. *The role of the researchers* has been to both support and clarify the local co-innovation processes through their research, and to increase understanding of them in national and international forums. In addition, both cities have openly shared their experiences in national arenas. The question of radicalness (to whom innovation is "new") and diffusion seemed to be therefore strongly interlinked in the public context (Hartley, 2005).

For further research, it will be interesting to examine how the "explicit" use of these kinds of co-innovation models could enhance the dialog between bottom-up and top-down processes, and consequently support more radical and systemic changes in the long run at organizational and even at political and regulatory levels. For example, there were more than a hundred rapid experimenting pilots in our second case city. These provided significant potential and seeds for local diffusion, and even legitimation for more user-driven production and development models in the political agenda, and in future daily practice (Albury, 2005; Smith and Fischbacher, 2005). Overall, as the main managerial implication, it seems that there is a need in the public sector *to be more aware and make more visible* the different development impulses, targets and alternative innovation process models, and *to utilize* more effectively the resources of users and local communities (Carstensen and Bason, 2012).

Our results are tentative but promising; case studies provided rich understanding of the studied phenomenon (Yin, 2009; McIntyre, 2008). The four studied cases were used as illustrative extracts of different ways and outcomes of user-driven co-innovation, and reflected with the theory. In terms of validity, our research was improved by building a strong interplay between the theory and the cases. Moreover, we were triangulating the results between the researchers and case representatives (Kvale, 1996).

Theoretically, our framework of outcome and process perspectives of co-innovation in public services seems relevant. Hence, this article opened up new perspectives on user-driven co-innovation processes in the public context that we suggest to be one important, emerging research area to be discussed more in-depth. However, it appeared that the concepts of service innovation take poor account of the social aspects of innovations in the public sector, such as the possibility of influencing local and societal issues and enforced community spirit, which was one of the key findings in all the cases (Rubalcaba et al., 2012). In future studies, the criteria could be expanded in this direction.

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