Organizational learning in an innovation network – enhancing the agency of a municipality

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ABSTRACT

Co-operating in networked activity is one of the most topical phenomena in modern economies. It offers organizations opportunities to produce services in novel ways, create other renewals and co-create value. Earlier research has suggested that in a networked setting, learning in and between organizations is critical since networks and value co-creation are mostly based on interactions and knowledge. However, the processes aiming at knowledge creation and changes in the activity of organizational behaviour are complex, and studies focusing on the issue how the learning processes actually take place in innovation networks are rare. We contribute to this research gap by applying the theory of expansive learning in co-configuration. We have carried out participatory action research in an innovation network where actors from municipal employment services worked with young people and local SMEs, in order to develop new activities for unemployed youth. A KIBS company facilitated the process. The study found interfaces between organizational learning and innovation activities in a networked activity. These appear to be in line with the service-dominant logic, particularly with its focus on actor-to-actor relationships in value co-creation. Our study contributes to theoretical and practical knowledge about the actual processes and outcomes of interacting and learning in innovation networks.

Key words: organizational learning, innovation networks, co-configuration, service-dominant logic, public services.

1. Introduction

Networked activity and different ways of creating renewals are topical issues in both private and public organizations today. The financial turbulence and growing service needs highlight the importance of the issues. Also research on them is growing and carried out from different perspectives. First, it is argued that organizations are evolving from Porter's value chain thinking (1985) to value networks with multiple partners on several levels, co-creating value (Norman and Ramirez, 1998). Second, it has been perceived that boundary-crossing learning becomes critical in these networks because they – as well as value creation – are mostly based on interactions and knowledge (Möller and Rajala, 2007; Vargo and Lusch 2004; Engeström, 2004; Knight and Pye, 2005).

In the literature concerning the public sector more specifically it is suggests that collaboration in networks offers potential for organizational learning and renewals (Hartley and Allison, 2002). New, flexible and goal-oriented innovation networks are emerging amongst public and private organizations, and citizens. However, despite its importance, managing and enabling organizational learning is still considered somewhat mysterious (Friedman *et al.*, 2005). Due to the multiplicity of actors in innovation networks, the learning processes become even more complex. Nevertheless, we have relatively few conceptual or empirical studies focusing on the key characteristics of social

processes and outcomes of learning in innovation networks (Lampela, 2009; Knight and Pye, 2005). These studies are especially rare in the public context (Rashman *et al.*, 2009).

The purpose of this study is to examine boundary-crossing organisational learning in an innovation network consisting of public and private organizations, and of citizens as end-users. The study considers the learning taking place by emphasising the agency of the municipal organization. Thus, we aim to narrow the following research gap: although the importance of learning in innovation networks has been highlighted in earlier studies, the actual processes and roles of participating organizations have remained less studied (e.g. Russo-Spena and Mele, 2012; Lampela, 2009). We are interested in how the learning process of a municipal organization takes place in an innovation network by asking:

1. How are the objects and tools for development constructed from municipal organization perspective?
2. What are the outcomes of learning in terms of knowledge, social structures, and changes in practices
3. How is the learning process influenced by the innovation network?

The study begins by outlining the theoretical background of innovation networks and by examining how the theorizing about organizational learning – more specifically the theory of expansive learning – contributes to it. It turns next to analyze some specificities of the public sector and the boundary-crossing learning processes benefited within this context. The main findings are described after the methodology and the case of the study. The paper ends with discussion and conclusions.

2. Towards studies of learning in and from innovation networks

Research on inter-organizational networks has expanded across academic disciplines. Networks can be regarded as a context, actor or entity depending on the focus and analysis level of the study (Lampela, 2009). Furthermore, growing attention has been paid to the shift in value creation and innovation logic of organizations towards interaction and knowledge creation from a dyadic to a network perspective (e.g. Möller and Rajala, 2007; Pöyhönen and Smedlund, 2004). Originating in marketing literature, service-dominant logic emphasizes the importance of actor-to-actor relationships in value co-creation, rather than a focus on provider-customer dyad (Vargo and Lusch, 2004). Equally, organizational research has broadened the focus from dual one-to-one-relationships towards co-operation networks with multiple participants (Knight and Pye, 2005; Toiviainen *et al.*, 2009). Engeström (2007) characterizes this 'co-configuration' type of network setting as the historically most recent form of work; it requires continuous exchange and an active configuration between producing organizations, customers, end-users and other stakeholders in the network. Despite many studies focusing on learning in inter-organizational settings, there are still few studies on learning in and from innovation networks which acknowledge the shared goal. This study identifies the theory of expansive learning to be relevant for that purpose.

2.1. Defining an innovation network

Broadly, networks can be defined as a "set of interconnected nodes" where actors exchange various types of flows with others actors in the network (Castells, 1996, pp. 470). Pöyhönen and Smedlund (2004) define networks on the basis of the specific knowledge creation activity they conduct and the purposes they serve. These network types can be defined as 1) production, 2) development, and 3) innovation networks.

Innovation network differs from production and development networks firstly in regard to the strategic goal of consciously and explicitly creating new knowledge and activity (Pöyhönen and Smedlund, 2004). This is done by combining highly specialized knowledge and creating new based

on the multifaceted capabilities of the actors arranged in a novel way. The actors are heterogeneous and drawn from different fields of business including both private and public organizations. Secondly, in order to enable creativity the operational mode in this type of a network cannot be too structured or formalized (Pöyhönen and Smedlund, 2004) and the value creation system becomes emerging and complex (Möller and Svan, 2003; Norman and Ramirez, 1998). Thirdly, the network is ideally led by an actor who is most suited to coordinating the collaboration, rather than one based on a formal hierarchy and power. Finally, the co-operative relationship is sustained only until the innovation is complete (Pöyhönen and Smedlund, 2004; Tidd, 1997).

Consequently, when organizations and individuals operate and collaborate in different types of networks, mutual learning from interactions between the parties is needed (Engeström, 2007). However, it seems that the majority of network research comes from business-to-business networks (Provan *et al*., 2007). The motivation behind networking has thus been traditionally explained from transaction cost and resource-based theories that emphasize complementary resources and shared risks (Lampela, 2009). Consequently, networks are studied often as specific organizational forms with their formal authority structures and processes, such as alliances (Provan *et al*., 2007). This seems to apply to emerging network studies conducted in the public sector too; the focus has less been on development and innovation networks and their social, complex processes of interacting (Rashman *et al*., 2009; Lampela, 2009).

2.2. Expansive learning for the co-construction of object(s) and tools in innovation networks

Nonetheless, there are multiple views of organizational and inter-organizational learning. Learning is considered to take place in and among individuals, groups, organizations and networks, and the phenomenon is defined by many approaches (Paavola *et al*., 2004; Rashman *et al*., 2009; Karatas-Özkan and Murphy, 2010). On the one hand, learning in and from networks can be considered as a 'by-product' of each type of networks interacting. On the other hand, there can be networks aimed explicitly at learning (Knight and Pye, 2005). We found similarities between development and learning networks, where especially in the latter, the explicit object is mutual learning usually focusing on improving existing activity gradually by providing synergy among the parties (Bessant and Tsekouras, 2001; Alasoini, 2011.) Even though the goal of these networks is to learn, they are criticized often for lacking specific shared targets for the development (Bottrup, 2005). However, if the goal of an innovation network is collectively utilize the know-how of the participants, this study suggests that from an organizational perspective it could be approached as a learning process aiming at comprehensive changes in the current activity (c.f. Engeström, 2004, 2007).

These premises are essential to the theory of expansive learning that reminds the sociocultural approach (Gherardini *et al.*, 1998). This theory also examines knowledge creation and change in activity as a learning process that is similarly in the interest of Nonaka and Takeuchi (1995). Although it differs from their perspective by giving concrete frames of references and tools for the process of collectively creating new, novel artifacts and social structures, i.e. something that does not yet exist (Engeström 2004). Nokana and Takeuchi (1995) study the phenomenon as means of business competition, whereas Engeström focuses on opportunities for emancipation and agency (Virkkunen, 2009).

The central concepts of expansive learning (Engeström, 1987) relate to the object of an activity around which the subject(s) work with certain tools and mediating concepts. The starting point for learning is to understand and reflect on the object of the activity in its cultural and historical context. The idea of 'expansion' refers to the process where the subject(s) are able to question in their minds and consequently change in their concrete actions, the prevailing assumptions of the object to better meet the needs of the future. This way, expansive learning requires changes both in the mind and action of the learner. Further, important is that the (conceptual) tools enabling the

subject(s) to reflect and develop the object are intertwiningly developed along the learning process. Thus, practices, tools and learning cannot be separated from their objects (Virkkunen, 2009; Toiviainen *et al*., 2009; Engeström, 2007).

Activity is considered to take place in activity systems which have certain rules, community and division of labor. However, networked activity can generate new types of distributed, multiple, hybridized agency in boundary-crossing activity systems. An agent is one who "causes events to happen" (Virkkunen, 2006, pp. 63). It is, however, temporally embedded process informed by the past, oriented through evaluation of the present toward future possibilities (Emisbayer and Mishe, 1998). When collaboratively creating something new, like in the case of innovation networks, interaction between multiple activity systems is needed (Virkkunen, 2006).

When studying innovation networks from the perspectives of object and tools, some insights and specifics exist concerning the learning practices of these networks (c.f. Toiviainen *et al*., 2009; Kerosuo *et al*., 2011). These can expand the traditional structural and functional perspective of studying networks. When the primary target of an innovation network is the creation of shared innovation, it requires not only interaction and learning in and between different activity systems (organizations) but an acknowledged, shared object of development too. It does not imply that the development targets of the various network participants are identical, since they all have development agendas of their own (Alasoini, 2011).

3. Specifies of public sector and boundary-crossing learning processes

Characteristic to inter-organizational and networked learning is that it takes place amongst individuals and groups across organizational boundaries. Moreover, both organizational and inter-organizational learning can be characterized as dynamic, social and contextual (Paavola *et al*., 2004). Despite the growth of boundary-crossing learning studies, it seems that these concepts have remained under-researched in the public, and especially in the networked, context. Nevertheless, are important, since the public sector faces critical societal challenges and has different drivers, goals, and structures from the private sector (Rashman *et al*., 2009).

3.1. The public sector and learning studies

Public sector organizations differ in many respects from private ones. First of all, their aim is to produce 'public value' and balance different stakeholders' interests instead of maximizing the profit for shareholders (Moore, 1995). Public organizations further represent democratic practice and operate in a political environment. They are thus obligated to follow policies that have an effect on their collaboration strategies and practices (Hartley and Skelcher, 2008). Consequently, the culture of public organizations has been seen as rather conservative, supporting knowledge exploitation instead of exploration, and with little tolerance for errors. These organizations have been seen to have service-level, departmental and cultural barriers to learning and knowledge flow. Moreover, learning is traditionally seen as a controlled, top-down process rather than enabled as a border-crossing, collective bottom-up process (Rashman *et al*., 2009).

Currently, however, public sector organizations are under pressures to engage in learning and innovation, a factor deriving from changing user and other stakeholders' needs. Despite the importance noted in pioneering studies, there are relatively few studies from learning in the public services and they are fragmented. Rashman et al. (2009) were able to find only 29 high quality articles on learning in the public sector in the period 1990-2005. Knowledge-sharing and learning in this context had been mostly studied in a specific service or professional group (Vince and Broussine, 2000). In practice, there have been few intensives for networked, bottom-up knowledge creation.

Brodtrick (1998) have suggested that for inter-organizational and boundary-crossing learning to occur in public organizations it would be important to support the creation of trust, commitment and inter-personal connections between managers, professionals and service users to achieve societally valued results. Vince's (2000) main argument is that in order for public sector organizations to create an approach that supports (radical) learning, management practices ought to change towards enabling collective learning. Management decision-making should be open, relational and shift its focus from individual skills to the process of organizing and reflecting in a collective activity. Further, Thomas et al. (2001) suggest that if learning is seen as strategic for the organization it includes the idea of consciously and actively pursuing learning opportunities.

3.2. The expansive learning process and importance of cultural historical context

For public service organizations and their networks, the sociocultural approach to learning appears to be particularly relevant by enabling the creation communities that span organizational boundaries (Rashman *et al.*, 2009) providing better opportunities to solve complex societal issues. According to learning approaches related to the sociocultural perspective, organizations are seen as culturally and historically unique sites where members collectively engage in the construction of a social reality. In this paradigm, the aim of social inquiry shifts from structures or outcomes to processes – more specifically from organization to organizing and from organizational knowledge to the process of learning (Karatas-Özkan and Murphy, 2010).

Expansive learning theory approaches work activity and networks as historically and locally originated settings (Engeström, 2004, 2007; Kerosuo *et al.*, 2011). It suggests that the context and its contradictions work as the starting point for the multi-voiced process of expansive learning. When actors are able to understand the object of an activity in relation to the contradictions and begin collaborative solving them by qualitatively changing their way of acting, expansion takes place. The expansive learning process may be further characterized as horizontal and vertical border-crossing in a cyclical, iterative and long term process. Consequently, this type of learning is not a linear process (Rashman *et al.*, 2009) but a "process of ambiguity and creative chaos, involving the sense of progress" (Paavola *et al.*, 2004; pp. 563).

The cycle of expansive learning (Engeström, 1987) is a conceptual tool for analyzing and supporting learning as an expansive process. The collective process has the following phases: 1) questioning the old activity, 2) analyzing the current activity, 3) modelling the new activity, 4) applying the new activity, and 5) consolidating and reflecting the new activity and its development. In this process it becomes visible how expansive learning requires turning ideas into practice in the process of exploiting the previous activity and exploring the new. Collective reflection on concrete, experimental activity and more strategic, conceptual levels are needed in the process. This means engaging at both personal and collective level in bridging the gap between a designed future and the implementation of reality in the construction of new and shared meanings (Engeström 2004, 2007). If this type of expansive learning takes place, it can be considered rather a radical renewal in terms of object, tools, knowledge, social structures and practice (Saari and Kallio, 2011). Applying these main concepts of expansive theory we next examine empirically, how does the learning process of the municipality organization take place in an innovation network setting.

4. Methodology and case description of the study

We adopted a qualitative, case-specific research approach in order to gain deep understanding of this complex and dynamic phenomenon. The empirical material in this study is drawn from a case

in a municipal organization which was interested in collaborative developing new activities and support for long-term unemployed youth. The municipality of app. 50,000 inhabitants is located in South-Eastern Finland. The challenge of youth unemployment has grown in the region, as generally in Europe, alongside structural and economic challenges and aging in the society. The majority of firms in the area are small, typically family-owned. There is no university in the area but higher education providers operate in close collaboration with local industry. Even though it has increased recently, educational levels and R&D expenditure lags behind the rest of Finland – a factor that may be critical in the future success of the region.

The innovation network collaborated around Youth Workshops from June 2011 till September 2012. Youth Workshops is a term used in Finland for local, public organization to train unemployed youth in their life management skills, provide tailored paths to education and work, and with support and learning by doing to familiarize them to various occupations. The most common target groups are socially disadvantaged, long-term unemployed youth with varying backgrounds [1]. More specifically, in this case the innovation network comprised the following actors: a municipal *development manager* and four municipal *developers*, a *service manager* and app. ten *service workers* from the Youth Workshops, app. 30 unemployed young people (*service users*), seven local small and medium sized *companies (SME's)*, two representatives of knowledge intensive business service (*KIBS) company as an external facilitator*, and four *researchers*. Two of the researchers from University of Lapland were involved in bringing knowledge of service design to the process. The two authors of this paper were involved as action researchers during the process (McIntyre, 2008).

The overall development object was agreed by the network as being "to create new collaborative modes of working between Youth Workshops and local SMEs'. Acquiring active work experience with possible employers was seen as one of the key issues in reducing unemployment in the region; new and closer ways of collaboration were highlighted. In addition to the agreed development object, each of the network actors had their own more specific objects. They are demonstrated in Figure 1. based on the researchers' interpretations.
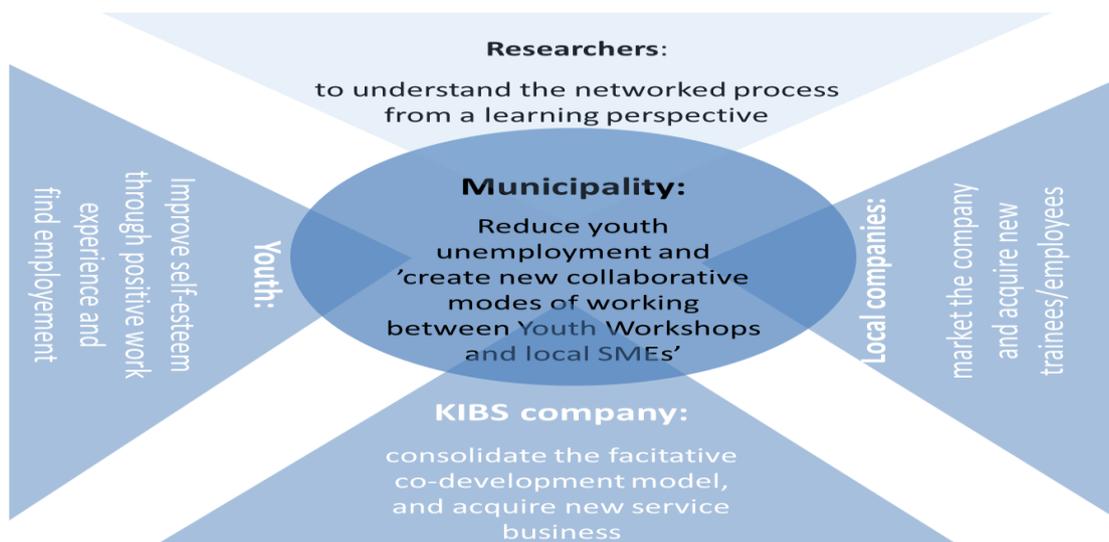
Figure 1. The innovation network with its agreed vs. actor-specific development objects.

The study was carried out as participatory action research (McIntyre, 2008). As such, it made use of interviews, participatory activities with observations and memos as the means of data gathering. The six interviews with the key personnel from the municipality conducted immediately after the collaboration was finalized between, June and September 2012, were used as the main data. The six

interviewees were the development manager, two municipal developers, the service manager, and two service workers (youth supervisors). The interviews aimed to reflect the year-long co-development process by allowing the interviewees to evaluate phase by phase the aims, tools, main lessons learned and the critical influences. The two service workers were interviewed simultaneously as a pair, all the others were interviewed individually. The interviews lasted from one to two hours and were recorded and transcribed. To study the boundary-crossing learning practices qualitative analysis based on theming and categorization was developed by utilizing the central concepts from the innovation network studies and expansive learning theory described. The analysis framework is presented with the main findings.

5. Main findings

The innovation network utilized in practice the term 'co-development' to describe the collaboration on renewing the Youth Workshop's practices target-oriented, facilitated by the KIBS company. In this study we explore the 'co-development' in an innovation network as a learning process. In order to answer to the research questions empirically, the learning process of the municipality was constructed utilizing the central concepts of the expansive learning (Engeström 1987, 2004, 2007). This is demonstrated in the Figure 2.
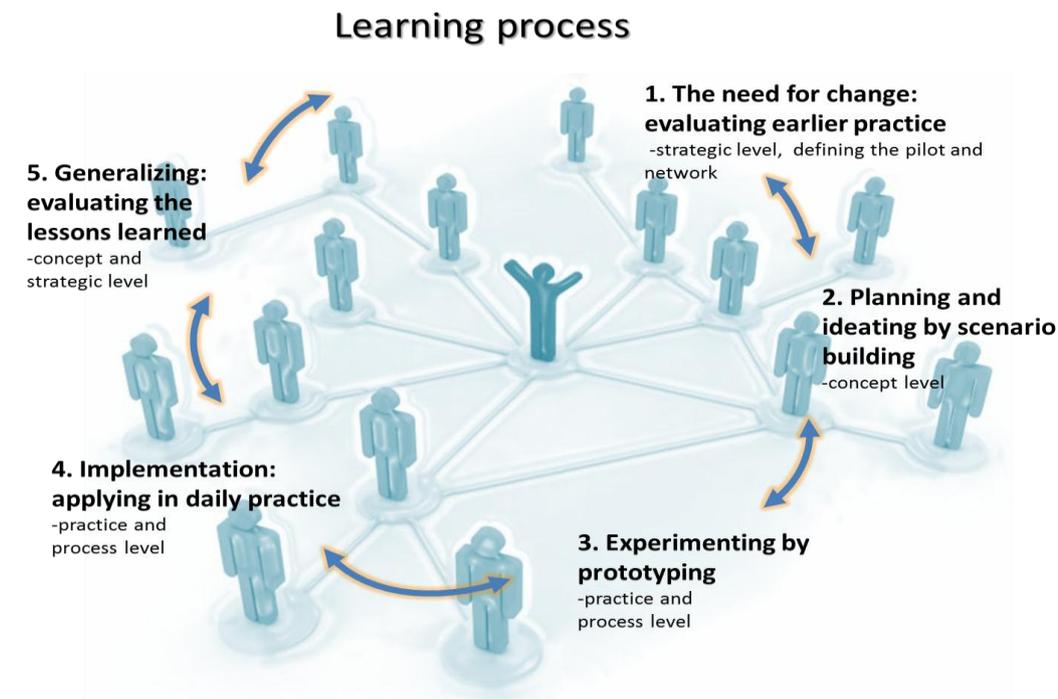
Figure 2. The learning process of the municipal organization in the innovation network.

The main learning phases (Ficture 2.) can be described as follows: 1) identifying the need for change through development-oriented evaluation of earlier service practice, 2) planning the new activity by ideating and building scenarios, 3) experimenting with the new activity by prototyping, 4) implementing of the activity by applying it in daily practice, and finally 5) generalizing and evaluating the lessons learned.

In the following we describe phase by phase, how the learning process of the municipality organization took place in an innovation network setting. More specifically, we answer to the three research questions.

1. How are the objects and tools for development constructed from municipal organization perspective?
2. What are the outcomes of learning in terms of knowledge, social structures, and changes in practices
3. How is the learning process influenced by the innovation network?

Next, we describe what was done in practice in the network and learned by the municipal actors present in each phase. In the phases also detailed result Tables 1-5 summarizing the findings are presented and some quotations are used to illustrate the key interpretations by the researchers.

5.1. Phase 1: Identifying the need for change by evaluating the earlier practice

A few years before collaboration began in the innovation network, the municipality's strategy had been formulated towards user-orientation by emphasizing local participation in the development of the service. User-oriented development pilots had been conducted and their lessons learned were analyzed. The development manager had been acting as the driving force and was eager to further utilize the models and encouraging experiences gained in order to set new development targets. An open bid for external facilitation on renewing the Youth Workshop's practices was won by the KIBS company. Researchers joined the new collaboration in order to analyze and support the co-development process.

In June 2011 the external facilitator and researchers conducted an interim evaluation of the history and previous development work of the Youth Workshop services. It revealed that renewing the company collaboration was not only a politically charged issue, but it implied critical contradictions concerning the historic-cultural context. Within the given challenges, 'collaborative modes of working between Youth Workshop services and local SMEs' were formulated as the development object. It was reinforced when the municipal developers and a researcher went to interview local SMEs and youth regarding their development needs; both were interested in collaborating but on new terms.

Table 1. Identifying the need for change – development-oriented evaluation of earlier practice

Learner	Learnings					Contributions / contradictions *)
	Aims	Tools	Knowledge	Social structures	Practices	
Development manager	Deciding the shared development object:	(Interim) evaluation of renewal work.	External facilitation is needed for partnering and user-orientation.	Continuing collaboration with KIBS, researchers.	Establishing the collaboration (agreement).	*) Strategy work, critical evaluation of history of local Youth Workshop activity, political pressures.
Developers	Renewing collaborative modes of working between Youth Workshop services and local SMEs.	Peer-interviews of local SMEs	Taking the role of an entrepreneur: needs, experiences expectations, limited resources.	Establishing relationships with KIBS and researchers.	How to contact entrepreneurs.	Good earlier experience with KIBS and researchers.
Service manager		Interviews of service users			Reframing co-development process and establishing steering board.	*) The municipal development manager launched the collaboration.
		The co-development approach	Getting familiarized to the co-development approach.	Building closer relationships with entrepreneurs		Reflective discussions with KIBS and researchers.
						Entrepreneurs, researcher as peer-interviewer, company contact person from employment services.
						Young people with their own aspirations.

Consequently the need for change and the main object were shared by different actors in the municipal organization. The main historical, cultural and political contradictions were also shared:

1) The main actors to advise service users, the service workers, working with very short and temporary work contracts while the aim is building partnership relations with SMEs based on long term commitment and trust.
2) The object/orientation of Youth Workshops had been rather "closed" while increasing demands for company collaboration; a call for openness and mutual goal setting.
3) The public image of Youth Workshop activity was not attractive to SMEs while working-life orientation was defined as the main object of the activity.
4) The main tool was public finance, which according to EU regulations prohibit close and mutual value-creation modes with SMEs such as subcontracting (distorting market based competition).

Despite having shared views, the parties also had different actor-specific objects and tools. The developers already had their own project as a tool to renew Youth Workshop activity. Consequently, the role of the external facilitator aroused some confusion among the developers:

> "Before our co-development, I worried that we should have the main internal conditions within Youth Workshop resolved before putting effort into external communication. We hadn't finished the work when we heard that it was time to get concrete results with the support of an external facilitator. From my point of view it sounded like an extra project manager".

This can be interpreted as the fifth main contradiction, concerning development tools; the external facilitation (tool) offered by the development manager reflected somewhat insufficient dialogue between top-down and bottom-up developers. Interim evaluations and the interviews of the local SMEs and service users served as important tools in creating mutual trust and understanding of each other's needs and interests in collaborating. By conducting the interviews with the study researchers, the municipal developers learned how to build closer contacts with SMEs in their daily practices; new knowledge, practices and social structures were created.

In addition, the municipal developers and the service manager became familiarized with the co-development approach, developed earlier within the same city, through the influence of the external facilitator and researchers. The group reframed how to co-develop in practice in the innovation network in order to better suit their specific needs; the local actors and their knowledge were key.

5.2. Phase 2: Planning and searching by ideating and scenario building

In November 2011 at the Youth Workshop's premises, an initial ideating session for the innovation network was organized by the municipal developers, the external facilitator and researchers. Altogether 25 people were involved. Based on the material ideated at the session, the researchers from the University of Lapland formed a scenario from the renewed co-operation forms on an open web platform. All network parties were invited to comment and ideate it further. During following seven weeks there were altogether 900 visits in web platform.

Table 2. Planning and searching – ideating and scenario building

Learner	Learnings					Contributions/ contradictions *)
	Aims	Tools	Knowledge	Social structures	Practices	
Developers **Service manager** **Service workers**	Informing, co-ideating. Motivating, creating contacts with SMEs.	Workshop, collaborative web-platform Co-innovation via web will be tool for future.	Face-to-face co-ideation; lots of ideas, inspired co-sprit. Awareness from closed towards open orientation. Mutual understanding of needs, interests and expectations in practice.	Getting to know each other, trust building. More attractive marketing and strategic contributor needed. Pre-coaching for service users needed.	"Best practices"/ guidance for future utilization of social media.	KIBS, researchers. Service users, service workers, representatives of local SMEs and entrepreneur association, KIBS, researchers. *) Insufficient local marketing regarding co-ideating with network parties – new way of working.

Analysis revealed that the initial ideating session served to motivate, inform and co-ideate within the newly established innovation network. Municipal developers, the service manager and workers agreed that the main lessons learned were mutual understanding concerning the needs and expectations of each party, the alternatives for collaboration practices, and how this inspired a co-spirit. Although the important aim of creating many new company contacts was not yet achieved, the first few company representatives involved were seen as a valuable start. When building critical social structures, marketing for SMEs and pre-coaching service users were also mentioned as important lessons learnt. At best, these kinds of 'safe encounters' were seen to provide the service users with ideal learning opportunities for company collaboration.

Co-ideation was continued via the collaborative web-platform tool, moderated by the municipal developers with the support of the external facilitator. It appeared that the web-platform enabled follow-up, co-ideating and critical discussion, but despite attempts to do so, did not attract further iterative development from the service users or the SMEs. The municipal developers and service workers agreed that the web-based co-ideation was too structured in terms of content, and the adopted process perspective was unfamiliar. The platform was however seen as an important network tool, especially for the future, and related new knowledge was created. Consequently, emerging practices and the guidance of the external facilitator were critical lessons learned for the future, as summarized by one municipal developer:

> "For us [the web-platform] was not yet a familiar way to interact, but the experience reinforced my view that it will be the tool for the future… The content, to be honest, with [unfamiliar] phases and titles were confusing for those not involved in the core network. Such tight and clear content would serve a developed team organization, but for workers and young people the process-thinking may be unfamiliar"

5.3. Phase 3: Experimenting by prototyping

In February 2012, the researchers from the University of Lapland formed core development ideas and collaboration paths to be trialled in practice based on co-ideating. A prototype sessions using technology-assisted role-playing was organized at the local employment office's premises. All together twenty people attended the five prototyping sessions over two days.

Table 3. Experimenting by prototyping

Learner	Learnings					Contributions/ contradictions *)
	Aims	Tools	Knowledge	Social structures	Practices	
Developers Service manager Service workers	Testing new ideas and simulating identified problems related to collaboration in order to find better solutions.	Prototyping; technology assisted role playing. Inspired prototyping method could be applied for many co-development purposes.	Summary of development actions Critical mutual benefits to be pursued and co-created with companies. Inspired future hopes, expectations for service users.	Open, critical collaboration between service users and service workers. Only one entrepreneur involved, but was a success. For service users, safe and inspired arena for learning company collaboration	Mutual synergy between different occupational areas within Youth Workshop activity. Sharing best practices in partnership / company collaboration Inspiration for new customer forums.	Service users, service workers; mostly unique, mutually positive experience. Researchers as facilitators. An innovative entrepreneur. *) Marketing skills vs. entrepreneurs' time to participate *) Suitable amount and way to pre-coach service users to participate

The municipal representatives shared the same aim, namely, to test the ideas related to the new collaboration practices. The tools applied to prototyping were also found to be highly inspiring and could be applied to other development targets in the future. The researchers facilitating the technology-assisted role-playing were seen to be skillful in challenging participants and in forming conclusions from the results. Their summary of the development actions was earmarked for further development and gradual realization with the support of the municipal developers. Prototyping also opened up critical mutual benefits to be pursued with the SMEs. It also enabled sharing best practices in partnership-style company collaboration, as one service worker described:

> "From June to the end of the year we actively developed customer collaboration. As a result we have adopted as a daily practice the collaboration mode we shared in the prototyping session. The SME customer had to visit us at the [Youth Workshop's premises] across three meetings… and the entrepreneur and service user got to know each other. Personal relationships are important, and critically, it helps the entrepreneur to understand the kind of organization and people he/she will be collaborating with. At its best it has led an entrepreneur to ask, how quick I can hire these young people?".

In terms of social structures, the prototyping enabled both service users and service workers to learn open and critical collaboration. For service users it provided a safe arena to test their aspirations, to learn social participation and collaboration practices with local SMEs. Even though there were only a few representatives from local SMEs, the synergy between different occupational areas at the Youth Workshops was noticed. It served as significant untapped resource and potential for all stakeholders, as described by one municipal developer:

> "Thanks to the entrepreneur we identified opportunities for collaboration across [Youth Workshop] service areas. The entrepreneur spotted its importance and the facilitators also saw the opportunity, despite initial thoughts that the entrepreneur and youth ICT group would not match up. It was a great solution for all participants."

Prototyping also inspired the creation of new customer forums as networked development practices, and led to lessons learned around how crucial local knowledge and skills are in creating the commitment needed amongst network participants.

5.4. Phase 4: Implementation by application in daily practice

The KIBS facilitator made more detailed suggestions for renewed company collaboration practices. With the support of the municipal developers, these tools were applied in daily practice with selected SMEs in April 2012.

Table 4.Implementation by application in daily practice

Learner	Learnings					Contributions/ contradictions *)
	Aims	Tools	Knowledge	Social structures	Practices	
Developers Service manager Service workers	To adopt renewed collaboration model in practice and utilize internal synergies to serve customers.	Guidance in modelling case-specific customer collaboration process. Renewed general collaboration model. Shared, explicit model for company collaboration will be *needed* to familiarize new staff.	Better personal awareness and emerging mutual understanding of the customer collaboration process.	New partnership style customer relationships, as valuable reference and experience of internal and external synergies.	Emerging practices to provide broader services across occupational areas.	Case customer, service workers, service users and company contact person from employment services. The external KIBS facilitator. *) Varied customer needs and personalized practices of service workers was inhibiting critical reflection and building shared practices.

The aim of the implementation phase was shared and realized with selected customers; by process-modelling, the development needs of the practical collaboration activity were reflected upon and conclusions drawn by use of a renewed guidance tool. Both municipal developers and service workers involved said that the reflective implementation in practice enhanced personal awareness and emerging mutual understanding of the company collaboration processes, as follows:

> "I found it useful to elaborate the work as sub-units, which has deepened my understanding of the entirety. It would definitely be good to have some models for work and collaboration with company customers. With the help of these models new workers would also know how to work."

Furthermore, the novelty in the implementation phase was that it represented the new partnership-style customer relationship, and thus served as a valuable reference and experience related to internal and external synergies. It also called for the creation of new collaborative practices between parties involved as one service worker stressed:

> "In the company collaboration, we already apply the main phases you described, but also more specific steps. This has been such a great collaboration case. Altogether the collaboration within Youth Workshop services has been super! This was a new kind of collaboration mode, where we had the specific responsible person from the company too".

Therefore, the need for a shared and explicit model for guiding company collaboration was agreed, especially for familiarizing new staff and building internal synergies. However, the varied customer needs, strong personalized practices, and turnover in staff resources still appeared to inhibit critical reflection, diffusion of new concepts, and the building of shared practices, illustrated as follows:

> "Certainly modelling [company collaboration] was useful at a case level…however, that may not have been acknowledged in the Youth Workshop. But in principle it is important that it [the process model] guides collaboration even when the staff is changing".

5.5. Phase 5: Generalizing by evaluating the lessons learned

Approximately one year into the network collaboration, the study authors interviewed the municipal actors involved regarding their experiences. Subsequently, in September 2012, the municipal developers, the external facilitator and researchers organized an evaluation session. The co-development and the central learning outcomes were reflected upon from the different perspectives of the participants. From this reflective dialogue, suggestions for further development were made.

Table 5.Generalizing by evaluating the lessons learned.

Learner	Learnings					Contributions/ contradictions *)
	Aims	Tools	Knowledge	Social structures	Practices	
Development manager **Developers** **Service manager** **Service workers**	Reflecting lessons learned throughout the process and for the future.	Evaluative Interview. Co-development approach to apply for all employment services. Renewed, shared tools for company collaboration.	Openness and know-how of alternative and purposeful ways to co-develop. Clarified mutual benefits in company collaboration. Individual success stories of service users.	Positive image of Youth Workshop among stakeholders. New, valuable customers based on partnership. Increasing collaboration with different sectors of municipality; positive boost, references. Valuable references and experiences to enhance innovative collaboration with SMEs.	Diffused co-development practices. Emerging practices to build internal synergies within Youth Workshop and partnership style relationships with local SMEs.	Political decision making: providing long term resource base. The innovation network. *) Complex changes influenced by local political decision making, EU regulations (finance). *) Difficulties in follow up and directing the co-development from strategic perspective. *) Highly challenging to create mutual commitment and combine different interests. *) The unclear role of the external facilitator (based on pre-expectations).

Based on the reflective interviews and the evaluative session, municipal developers and service workers agreed that the main lessons learned in terms of knowledge, social structures and emerging practices were related to building partnership-style relationships with local SMEs and synergies within the Youth Workshop organization. Therefore, the main shared object, renewing collaborative modes of working between Youth Workshop services and local SMEs, had been, step by step, achieved, as they summarized:

"Even if we did not gain many partnerships, we got the basics of how to build them including those actual cases."

"All these materials and the web-platform are useful and a big help for us. We discussed the summary of the prototyping phase with developers and noticed positively that some issues had already been implemented. There are a lot of good suggestions for development which we have to support service workers to adopt".

From the outset, it was acknowledged that the shared development object would meet challenges due to its complex political and historical-cultural context and in terms of the difficulties of the different parties in committing to the co-development. However, even though concrete outcomes were still at the level of piloting and emerging expanded Youth Workshop activity, they brought a broader positive boost by means of internal and external networking and synergy building. Consequently, Youth Workshops gradually renewed their image in the eyes of stakeholders, from service users to political decision makers, as one developer summarized:

"There's a positive development spiral. We have renewed the main internal conditions [within the Youth Workshop] and at the same time developed collaboration with SMEs. Altogether, we have proven our credibility to the city. Consequently, they made the crucial decision [to appoint] six permanent service workers for the next year…".

In addition, all interviewees mentioned that the networked process had developed their competence with new, tested and re-modified tools for co-development in a more networked and user-oriented way, as one interviewee said:

"It provided new concepts and tools, such as the web platform. We learned practices that are not our daily practice yet, but instructive and future-oriented…[after structural changes] a lesson learned could be utilized not only in Youth Workshop renewals but more broadly in employment services."

Therefore, even though there were difficulties in the dialogue between the network participants, interviewees agreed that the co-development process in the innovation network had also contributed to the expansion of the entire activity system (the city). All network parties had increased their competence in partnerships and user-orientation at practical or strategic levels of the activity system. The role of the municipality is seen as transforming gradually from administration and control to enabling citizens as individuals or members of communities, organizations and companies to co-develop and produce services collaboratively, as one interviewee said:

> "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 are used to starting development work with the attitude of administrate/fix/control, instead of starting with the needs and resources our citizens have. In the future the role of the citizen will increase. We have to identify their resource potential and encourage its utilization in a totally different way."

6. Discussion

The purpose of this article is to study organisational learning in an innovation network consisting of public and private organizations, and citizens as end-users. The study is topical since there are relatively few studies concerning the complex social processes of organizational learning in innovation networks. We used the theory of expansive learning as our theoretical starting point in co-configuration (Engeström, 2004, 2007). We emphasize the perspective of municipal organization. Our main research question was: How does the learning process of the municipal organization take place in an innovation network?

The study adopts is reasoning from the argument that if an innovation network collectively utilizes the know-how of the participants in a novel way, from an organizational perspective there is a learning process aiming at comprehensive changes in the current activity (c.f. Engeström, 2004, 2007). Expansive learning theory gives a concrete frame of reference to the process of collective creation of novel artefacts and social structures (Engeström, 2004). Adopting the perspective of expansive learning allowed us to go beyond the traditional structural perspective of network studies.

Based on our empirical findings, we can describe how the objects and tools were constructed phase by phase, this being suggested also by the theory of expansive learning (Toivianen et al., 2009). The co-construction of the shared object for different parties was evolving during the whole learning process. Our empirical study also revealed the learning outcomes in terms of knowledge, social structures, and emerging practices (c.f. Engeström, 2007). The presence of the innovation network contributed in multiple ways both to the learning process and emerging practices alongside the process. Those novel tools and social practices that were benefited were co-developed in the network and thus co-creating value in the local context (c.f. Vargo and Lusch, 2004). However, due to the political and historic-cultural context, the learning process was complex and contradictory. Also, most of the practical and conceptual tools were produced mainly by the influence of the facilitating KIBS company. Thus, they were not yet ready to be utilized in a way supporting the expansion of learning into daily practices. However, the mental models of participants were opening in many ways.

Furthermore, we were interested how the prevailing activity of the municipality changed was. According to Virkkunen (2006), agency depends on the actors' beliefs concerning their capacity to master conceptual and practical tools, and on social relationships of collaboration in the community. The study's results lead to the conclusion that the municipality's agency was essentially strengthened during the process. In particular, the capacity of the municipal developers increased in terms of conceptual and practical tools, as well as in terms of social relationships and practices. In other words, the municipal developers learned how to tackle the concrete development task at hand (Youth Workshop), and they also learned at the conceptual level "how to create an innovation

network to co-develop new knowledge and practices". In this way, the developers began to create what might be termed a hybridized agency, which was previously in the hands of the municipal development manager, but there were challenges in its implementation into local action (Virkkunen, 2006). Our study demonstrates the need for multiple learning cycles at different levels and in different activity systems in a municipal context (c.f. Vince, 2000). It confirms that long-term learning processes of strategic importance are needed in order to learn how to create more complex constellations of complementary specialities in order to master more complex objects (c.f. Virkkunen, 2006; Toiviainen *et al.,* 2009;. Thomas *et al.*, 2001).

Furthermore, our study describes how the work done with the innovation network contributed on changing the view of the municipal organization regarding its own role: instead of an administrator, it can increasingly perceive itself as an active agent enhancing collaboration in future networks. This perception may foster the emergence of virtuous circle: bringing a network of actors together to create something new by collectively utilizing the know-how of the participants may increase the opportunities of corresponding activities in the future. This enhances the municipal organizations capacity to innovatively learn 'how to learn'. Thus, learning from the past (exploitation) and learning for the future (exploration) enables the co-development and legitimisation of innovation-oriented practices that are especially important in the public sector (e.g. Saari and Kallio, 2011; Halonen *et al*., 2010; Vince and Broussine, 2000; Vince, 2000; Rashman *et al*., 2009).

7. Conclusion

From the theoretical viewpoint, an important point in our study is the found interface of the theory of expansive learning (Engeström, 2007) with the research on innovation networks (e.g. Pöyhönen and Smedlund, 2004). Also a shared object pursued by the means of co-configuration has been rather rarely studied earlier. Our study showed empirically how the organizational learning process taking place in an innovation network can be approached as an expansive learning process (c.f. Kerosuo *et al*., 2011). Our study supports the view that organizational learning aiming at the creation of new activity does not proceed linearly, but it is a complex, time consuming process with multiple cyclical, overlapping phases. Furthermore, the study supported the essential premise of co-constructive nature of tools as an inseparable part of the expansion in terms of knowledge, social structures and practices (Engeström, 2007; Toivianen *et al*., 2009).

Consequently, when the learning takes place in an innovation network, the network and the learning process are simultaneously constructed and realized as a result of interacting. This means that structures and processes are no longer in the control of any single party but co-developed and co-created. Essential is then for the organizations (this case the municipality) to take into account the other network parties objects for development and find the common object to co-construct. This perspective has linkages with the service-dominant logic regarding the importance of actor-to-actor relationships in value co-creation rather than a focus on a provider-customer dyad (Vargo and Lusch, 2004). In line with this study's findings from the learning perspective, service-dominant logic emphasises how at the same time as the complex and dynamic systems of actors interact and relationally co-create value, they jointly provide the context through which value gains its collective and individual assessment (Vargo and Lusch, 2011). These linkages provide a fruitful basis for further research.

Practical implications of the study relate to managerial and developmental aspects in the public sector. It is argued how the management practices in the public sector should move towards enabling radical, collective learning of a strategic importance in order to support the resolution of complex societal issues (Vince, 2000; Rashman *et al*., 2009). This study's collective learning process aimed at the creation of new knowledge and activity in an innovation network. It proved challenging but produced learning outcomes particularly related to a reinforced capacity in the

municipal actors. It showed how the learning process itself is local by its nature (c.f. Knight and Pye, 2005). Legitimations from managers are needed, and support from facilitative actors is enhanced, but the learning process itself must be collectively created by the local actors.

The action research approach provided a rich and deep understanding of the learning process and its outcomes (McIntyre, 2008). In terms of content validity, the researchers were able to analyze, interpret and test their interpretations throughout the year-long collaborative process, in the dialogue within the innovation network. Thus, this study's research was improved by triangulating the results between the researchers and case study participants (Kvale, 1996). In terms of conceptual validity, the framework seems relevant too. Even if being an empirical case, results seem to have transferability by the means of general conclusions considering relevance of theory of expansive learning in a networked setting. As is typical of action research, the authors of the study as researchers were involved in the process and by questioning and challenging made interventions without providing solutions. Instead, it was agreed that the KIBS company and other researchers played more active and facilitative roles in the learning process.

Endnotes:

[1] The definition of Youth Workshops. See more: http://www.nuorisotakuu.fi/index.phtml?l=en&s=5076

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