In search for an innovation theory: A practical theory for inquiry and co-learning

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Abstract

Innovations are usually conceived as new technical products aimed for commercial markets. However, the interest for innovations in the public sector is increasing and accompanying this interest follows a need for deeper knowledge about public sector innovation. A co-learning program among public sector organisations has been carried out in order to enhance innovation knowledge among public administrators. One of the main ideas of this learning program is that members from one organisation study innovation work in another organisation and then share their learnings to all participants of the learning program. In order to conduct such an inquiry the participants have used different innovation concepts structured in an innovation model. This supportive knowledge has been framed as a practical theory (following pragmatist epistemology) in this paper. The paper presents how this practical theory on public sector innovation has been continually improved during the learning program. The practical theory consists of three parts: An innovation concept, a description of the innovation process and the innovation context (internal and external preconditions). The development of the practical theory has been done following principles of multi-grounding (theoretical grounding, empirical grounding and internal grounding).

Keywords: Innovation, Public sector, Practical theory, Co-learning, Multi-grounding.

1 Introduction

1.1 Background

There is a growing interest for innovation in organisations. This interest has also been expanded to innovation in the public sector (Borins, 2002; Hartley, 2005; Fernandez & Rainey, 2006; Mulgan, 2006; Orange et al, 2007; Moore & Hartley, 2008; Bommert, 2010; Potts & Kastelle, 2010; Nählinder, 2013). Innovation is originally and mainly associated with the development of technical products to be sold on commercial markets (Goffin & Mitchell, 2010; Tidd & Bessant, 2013). The translation of innovation views and concepts from a technical and commercial domain to its application in the public sector needs to be done with deliberate thought. There are important differences that need to be maintained (Mulgan, 2006). The original and traditional view on innovation is mainly concerned with technical products based on inventions and the intent to influence the creation of new consumer needs (Goffin & Mitchell, 2010; Tidd & Bessant, 2013). This is founded on an idea of expansion on commercial markets based on a fundamental profit interest. There are important contrasts to public sector preconditions and functioning. When studying innovation in the public sector we cannot think away fundamental preconditions such as democratic governance and control and principles of legality and public authority (Nählinder, 2103). The idea of market expansion in commercial firms can be contrasted to the idea of tax funds economising in the public sector. There are of course many similar traits in commercial and public innovation that should not be overseen. One such commonality is the use of information technology as one important basis for many (but not all) contemporary innovations.

Nählinder (2013) has identified a lack of understanding among public administrators on how to view innovation in the public sector. In order to develop a proper understanding of public sector innovation one needs to study examples of such innovations and perform such studies with adapted concepts and frameworks. It is important that organisations in the public sector develop an action-oriented understanding of how to innovate. This means an understanding that is well integrated in the capability of conducting innovation and change work.

This research is performed in the context of public sector innovation and especially on how such organisations try to develop an enhanced understanding of innovations. We have arranged and participated in a program for the development of such enhanced understanding among public sector organisations. This program can be characterised as an inquiry and co-learning program. One important ingredients of this program has been the participating practitioners' inquiries on innovation work in order to develop such an enhanced and action-oriented understanding. In order to conduct such inquiries, there was a need for conceptual instruments. The research presented in this paper is concerned with the study of the emergence of such proper conceptual instruments, here called a *practical theory of public sector innovation*. The use of the concept of a practical theory (Cronen, 1995; 2001) means an emphasis on the theory as an instrument for conducting knowledgeable actions; a view central in pragmatist epistemology (Dewey, 1931; Rorty, 1980). This view is on opposition to the classical mirror-view of theory, when only truth-claims are considered to apply to this codified knowledge. Pragmatist epistemology does not make a total denial of a correspondence view of truth, but claims that it is appropriate only for simple statements of small fragments of reality. For theories, and other epistemological objects (like vocabularies), there will always be issues of utility that govern their construction and assessment (Rorty, 1980).

As stated above, our focus is on public sector innovation knowledge. This means 1) such knowledge that is specific to the public sector and 2) such knowledge that is general, i.e. it pertains to both public sector and commercial sector innovation. To clarify what we mean, confer figure 1. In the developed practical theory there might be traits that are not only valid for public sector innovation. There might be traits that are generally valid (P/C in figure 1). Our scope is thus P + P/C (figure 1). It has not been of our concern in this study to differentiate between general knowledge (P/C) and what specifically pertains to public sector innovation (P).

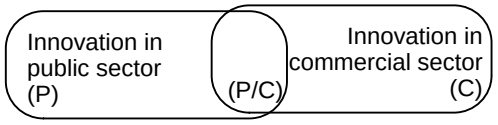

Figure 1. Innovation in public sector and commercial sector – similar and different traits

1.2 Purpose and structure

The purpose of this paper is to present an emergent practical theory of public sector innovation. This purpose includes the purpose of disclosing the development process of this practical theory; how it is empirically, theoretically and internally grounded. This combination of several grounding principles is called multi-grounding (Goldkuhl & Cronholm, 2010). The use of a practical theory of innovation has been studied in an inquiry and co-learning program for public sector practitioners. The practitioners used an initial theory during this program and our study of their application of this theory has led us to develop a new version this theory. We clarify empirical reasons for this development; i.e. different problems for the practitioners when using the initial theory and how we propose a re-designed theory to be a remedy for such problems. We call this clarification empirical grounding. The initial theory has also been investigated concerning its relation to knowledge in the innovation literature. This is called theoretical grounding. It is pivotal to characterise the emergent theory as a practical theory. It should not be assessed as a comprehensive mirror-oriented theory of innovation in the public sector. It should rather be assessed as an instrument for inquiry and learning. The practical theory on public sector innovation consists mainly of conceptualisations and a model. We will use the concepts of theory and

model interchangeably below. Our focus is on the use of the practical theory in the co-learning program. We do not make any assessment of the program as such. The learning program functions as context and empirical base for our analysis.

The idea of multi-grounding has been one important part of the research approach. As indicated, this research has been conducted in close collaboration with practitioners. Different labels can be used to describe such a research approach: Collaborative research, interactive research or practice research (Mathiassen, 2002; Ellström, 2007; Goldkuhl, 2011). The applied research approach is described in chapter 3 below. This chapter contains also an account of the notion of a practical theory. Before that, we describe (in chapter 2) the arrangement of the inquiry and co-learning program for the participating public sector practitioners. This program functions as an (empirical) context and precondition for our knowledge development. In chapter 4, we describe the initial practical theory on public sector innovation and its transformation to a new practical theory. The empirical, theoretical and internal grounding of this emergence of a new practical theory is also described in this chapter. The paper is ended with conclusions in chapter 5.

2 The context: A co-learning program on public sector innovation

The co-learning program started in 2013 and altogether 13 public organisations have participated in the program divided into two periods. Seven organisations participated in the first period and formed a learning circle that was working together during fall 2013; six organisations participated in the second learning circle during the following spring period.

The core idea of the co-learning program (called "Action Innovation") is to gather public organisations that have shown to be innovative and let them learn from each other. The purpose of the program is to increase knowledge in the participating organisations about local conditions and work procedures concerning innovation in their organisation. Further, the purpose is to increase general understanding of how innovation takes place in public organisations, and thereby contribute to strengthen the capacity for innovation in the public sector. Prior to this program a study was conducted, based on innovation management theory (Brattström, 2012) and action learning theory (Revans, 1982) where a first design of co-learning methodology was tested in a learning circle with 7 participating organisations (Hovlin et al, 2013).

Each organisation participating in the co-learning program brings an example of an innovation from its own organisation into the program. The purpose is to learn more from these innovation examples and share knowledge about them with others. Participating organisations' innovations and innovation work become the study objects for the other organisations in the program.

A participating public organisation form an *inquiry team* of 3-4 persons with relevant knowledge of innovation work. The program is coached and monitored by a *supervisory team* consisting of two researchers (the authors) and two consultants. Their role is to guide the inquiry teams through the program, develop conceptual instruments to aid the knowledge development; they also coach the teams in doing field work. The supervisory team is also responsible for developing aggregate knowledge based on the emerging new knowledge in the program.

The object of study and learning in the program is thus innovations, innovation processes and conditions for innovation work in public organisations. It is important to have concrete examples, experiences and actions at the core of the program. This means that the innovations brought into the program are central as well as the organisational practices concerning innovation. The character of the innovations taken into the program differs of course. Innovations could be a new or significantly improved product, process or organisational structure (OECD, 2005), most innovations studied in the program have been manifested in all those domains, sometimes having its centre in one of them.

The key to learning in the program is to mirror and compare own innovation work to others' innovation work By mirroring and comparing with others knowledge development concerning

character, processes and conditions for innovation on the local level as well as on a more general level is generated and expressed. The core learning method is explained in figure 2.

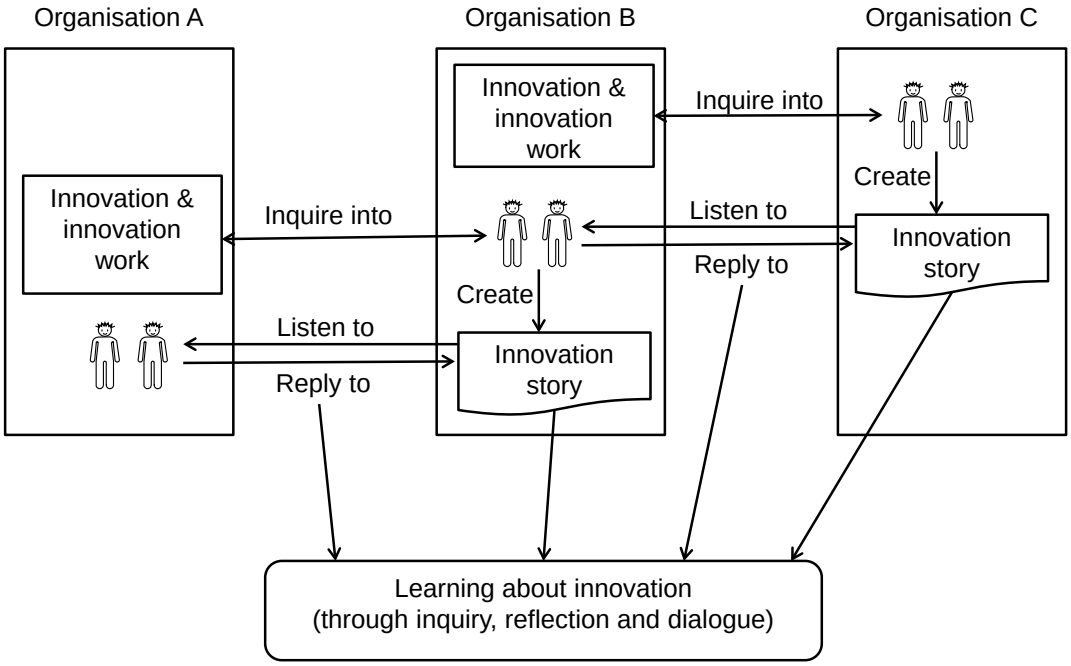

Figure 2. Core learning method in the co-learning program

In a learning circle (with 3 organisations as in the example in figure 2) the team of organisation C conduct a field study by visiting, inquiring into and making interviews in organisation B, the team of organisation B conducts their field study in organisation A that in turn makes their inquiry in organisation C (not explicitly shown in figure 2). All teams meet during three one-day seminars where they report their field work and findings, including innovation stories of the studied organisation. They also listen to the other organisations' reports. The teams advance their knowledge in the seminars through dialogue with others where concerns and issues derived from their field work and their own innovation work are the basis for reflection and discussion. The dialogue is moderated by the supervisory team who also adds their reflections and brings theory into the discourse. The overall process in a learning circle is schematically shown in table 1 below.

The program aims to generate multiple results. The program results in an increased knowledge and awareness among the participating individuals and organisations about their own, and other organisations, innovation work. A network is also created between individuals and organisations for continued knowledge exchange. There is also increased knowledge about tools and conceptualisations for innovation work. And finally there has been a dissemination of good practice on how organisations more systematically can work to build innovation capacity.

Table 1. Procedure in the co-learning program.

Week	Activity	Content	Instruments (knowledge support)
1	Preparation	The organisation forms a team and makes an innovation description. Commitment to participate.	Innovation description template, program description and instructions, participation agreement.
3	Start-up seminar	Introduction to innovation concepts and theory. Group discussions. Presentation of instruments and procedures.	Presentation slides, compendium with: presentation of all teams, interview guides, innovation model, report templates, schedule, procedures and literature review.
3 -8	Field work 1	Innovation case as study object. Interviews at the studied organisation (4-5). Analysis, report writing and preparing a presentation. Reports and presentation are sent in before the seminar.	Interview guide, interview guidelines, report template, presentation template, coaching from supervisory team.
10	Analysis seminar	All teams present their studies and conclusions from the inquiry. The studied team replies to the presentation. The supervisory team members present their analysis and findings from reading all reports. Discussion on findings and new questions. Instructions for field work 2.	Presentation slides with findings from teams and from supervisory team. Theoretical conceptualisations and comparisons.
10-14	Field work 2	Preconditions for innovation as study object. Interviews at the studied organisation (4-5). Analysis, report writing and preparing a presentation. Reports and presentation are sent in before the seminar.	Interview guide, interview guidelines, report template, presentation template, coaching from supervisory team.
16	Final seminar	All teams present their studies and conclusions from the inquiry. The studied team replies to the presentation. The supervisory team members present their analysis and findings from reading all reports. Discussion on findings and ways to move forward.	Presentation slides with findings from teams and from supervisory team. Theoretical conceptualisations and comparisons.

3 Research approach

3.1 Multi-grounding practice research

This research project has been conducted according to principles of practice research (Goldkuhl, 2011). This means a deliberate positioning of results to three target groups: local practices, general practice and research community. We have been collaborating with several public sector organisations as described above (section 2). The co-learning program aims at learning and improved understanding of innovation in the participating organisations (local practices). In the research project we aimed for knowledge about 1) public sector innovation and 2) how to learn about public sector innovation. This knowledge is aimed for both general practice (public sector organisations in general) and research community. The practice research approach distinguishes also between two related sub-practices (ibid): situational inquiry and theorizing. A situational inquiry aims at investigating a local practice in

order to generate knowledge that may be useful for its improvement. The approach for situational inquiry in this research is well described above (section 2). Theorizing means working with analysis of empirical data that is generated through situational inquiries. Theorizing is also seen as a support activity to situational inquiry. It supports with knowledge (instruments like methods, models and practical theories), which are useful for the conduct of situational inquiries. In this case we have been working with method refinement (in theorizing) as a support activity for the co-learning program. The continual refinement of a practical theory for public sector innovation has been carried out as part of the theorizing process. Based on a conceptualisation of practice research in Goldkuhl (2011), we have depicted the applied research process in figure 3.

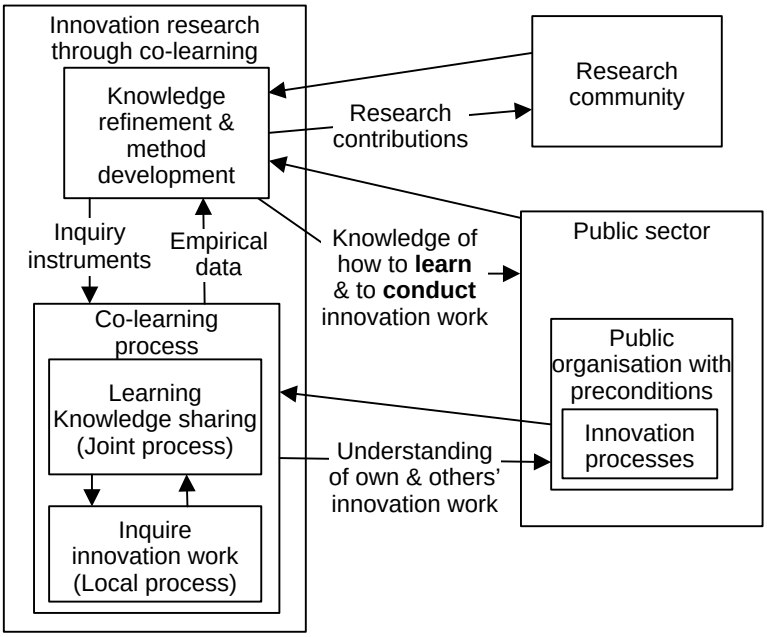

Figure 3. The applied practice research approach

The development of the practical theory/innovation model has been done following a multi-grounding approach (Goldkuhl & Cronholm, 2010). Three kinds of grounding strategies have been applied: Theoretical grounding, empirical grounding and internal grounding. We talk thus about three sources for development of this knowledge object (innovation theory). When the concept of grounding is used we mean that formulation of the knowledge object has been based on these sources as well as these sources have been used for validation. Grounding comprises thus both *generation* and *validation*.

In the theoretical grounding we have inspected literature on innovation with some special focuses (public sector innovation, innovation processes, creativity in innovation). The use of different concepts and views from the literature has made the development of the new innovation model a theory-informed process. During the continual refinement of the innovation model, we have checked different concepts and formulations in relation to what is stated in the literature (as a kind of theoretical validation). The theoretical grounding can be found in section 4.3 below.

Empirical grounding relates directly to the co-learning program. The participants in the first learning circle used the initial innovation model in their inquiries and different problems related to their use have been identified and then used as a basis for development of the new innovation theory. Improvements in the innovation model (and their manifestations in other instruments, such as interview guides) were presented to participants in the second learning circle. Observations from this second learning circle have been used for validation and further theory improvement. The new theory has thus been valued in relations to different empirical observations in order to have the emergent theory validated in relation to the existing set of empirical data. The empirical grounding can be found

in section 4.2 below. What is presented as the new practical theory below has thus emerged through these two subsequent empirical studies.

In the empirical part of this research (the situational inquiry) different methods and sources for data collection have been used. The reports produced by the inquiry teams are important empirical sources. The teams apprised to the supervisory team different difficulties during their inquiries. The seminars were important sources of data. One of researchers was particularly appointed for observation and taking field notes. The seminars have been audio-recorded in order to render possibilities to go back and exactly follow the discussions. The teams prepared presentations and their slides are also an important empirical source. After the seminars we sent out a survey to the participants. The questions were based on our explicit knowledge need concerning theory development. As said above, the first learning circle consisted of 7 organisations (cases) and the second learning circle consisted of 6 organisations (cases); in total we have these 13 cases as our empirical bases.

Internal grounding means that the emergent theory should be coherent. The theory and its different components are used to assess and refine the theory in order to make it conceptually clear and coherent. The internal grounding can be found in section 4.4 below.

3.2 Practical theory

The concept of a practical theory emphasises the theory's practical value and usefulness. The theory is seen as an instrument for understanding and action (Cronen, 1995; 2001; Craig & Tracy, 1995). Practical theories are described by Cronen (1995, p 231) in the following way: "They are developed in order to make human life better. They provide ways of joining in social action so as to promote (a) socially useful description, explanation, critique, and change in situated human action; and (b) emergence of new abilities for all parties involved." Practical theories should help us to see objects, aspects, properties and relations which otherwise would be missed. "Its use should, to offer a few examples, make one a more sensitive observer of details of action, better at asking useful questions, more capable of seeing the ways actions are patterned, and more adept at forming systemic hypotheses and entertaining alternatives" (Cronen, 2001, p 30).

This means that a practical theory may be an appropriate instrument for conducting inquiries; i.e. to help inquirers to observe and to conceptualise what has been observed in appropriate ways. A practical theory can also be an instrument for practitioners struggling to manage and improve their practices. Craig & Tracy (1995 p 252) state that "the ultimate test of such a practical theory is not … its capacity to explain an existing reality but rather its usefulness for practice and reflection". An innovation theory as a practical theory can be an instrument for people trying to learn more about innovation through inquiries and dialogues, as the case of the focused co-learning program (section 2). It can also be an instrument for practitioners to manage and improve their innovation practices.

Goldkuhl (2007) has, based on the works by Cronen (1995; 2001) and Craig & Tracy (1995), elaborated the constituents of a practical theory. A practical theory can consist of conceptualisations, functional patterns, normative criteria (values), design principles and models. In this research context, the first and the last part are the most important. Conceptualisation means what phenomena (objects, activities) that are considered to exist in practices; including properties of such phenomena and relations between them. This follows also the characterisation of a theory made by Schatzki (2001). A theory can be "systems of generalizations", "typologies of social phenomena", "models of social affairs", "accounts of what social things are", "conceptual frameworks" and "descriptions of social life couched in general, abstract terms" (ibid, p 4). Goldkuhl (2007) describes a model (being one part of a practical theory) as "illustrative crystallizations of a practical theory aimed as analytic instruments when applying the theory. A model is a graphical or a tabular description of some important aspects of the practical theory. Such a model may guide researchers or practitioners to observe, understand, analyze, evaluate and redesign phenomena within practices." (ibid p 141).

If translated to this context (of learning about public sector innovation), a practical theory means ways to conceptualise and emphasise certain phenomena in innovation practices and ways to visualize such conceptualisations in models. A practical theory may be a part of "inquiry instruments" for inquirers (researchers and/or practitioners) in situational inquiries (figure 3). It can also be a part of end results from the research process aimed for different target groups; for researchers as "research contributions" and for general practice as part of "knowledge how to learn and conduct innovation work" (figure 3). In the next section we will describe the elements of an initial practical theory and its emergence to a new and improved practical theory.

4 The emergence of a practical theory of public sector innovation

4.1 From one theory to another

When the co-learning program (see chapter 2 above) started, there existed an innovation theory as one element of the knowledge support to the participants. When we use the notion of a (practical) theory here, we focus (as said above in section 3.2) on conceptualisations and model. The analysis framework for the participants was described as a graphical model consisting of different concepts. This means that we treat this model (and its appurtenant concepts) as the core of the practical theory. This model was intended to govern the participants in their interviewing, analysis and production of reports. The model is described as an "innovation house" (figure 4). At the bottom there is a foundation consisting of innovation strategy. At the top, there is a "roof" consisting of the generated innovation. In the middle there are three types of activities forming an innovation process.

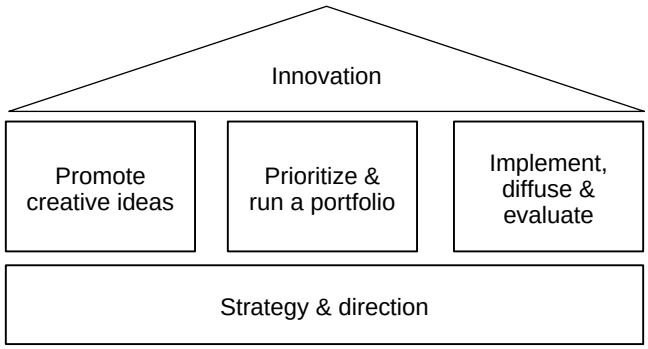

Figure 4. The initial innovation model (from Hovlin et al, 2013)

This innovation model was a slight revision of an earlier model presented by Brattström (2012). The main revision is that commercial parts of Brattström's original model have been left out. It seems also that Brattström's model has been inspired by other innovation models. This will be furthered treated below in section 4.3.

The presented innovation model (figure 4) was used together with interview questions and other knowledge support during the participants' interviewing, analyses and report writing. The participants (especially in the first learning circle) encountered different difficulties during their work. We could also identify that some of their results (reports, presentations and dialogues) did not reach expected quality. One main issue was that it was hard to pinpoint and characterise the studied innovation in the other organisation. Based on the collection of different types of data (the participants' reports, presentations, discussions at seminars, survey responses) we identified problems in their inquiry and learning processes. These identified problems triggered us to produce a revised innovation model. Different identified problems will be treated in section 4.2 below (empirical grounding). Parallel with this empirically based analysis, we conducted a literature review. We studied a selected portion of innovation and creativity literature as part of a theory-informed scrutiny of the initial innovation model. This will be treated in section 4.3 below (theoretical grounding).

When investigating and re-designing the innovation model we made a division into three parts:
1. The innovation (types, parts)
2. The innovation process (activities)
3. The innovation context (preconditions)

This follows the three parts of the "innovation house"; 1) the roof, 2) the middle and 3) the foundation. Each part was investigated if it was exhaustively described and well conceptualized in the model and its appurtenant descriptions. In each part we added more concepts and nuances. The reasons for these changes will be described in section 4.2-4.4 below. The new innovation model is found in figure 5.

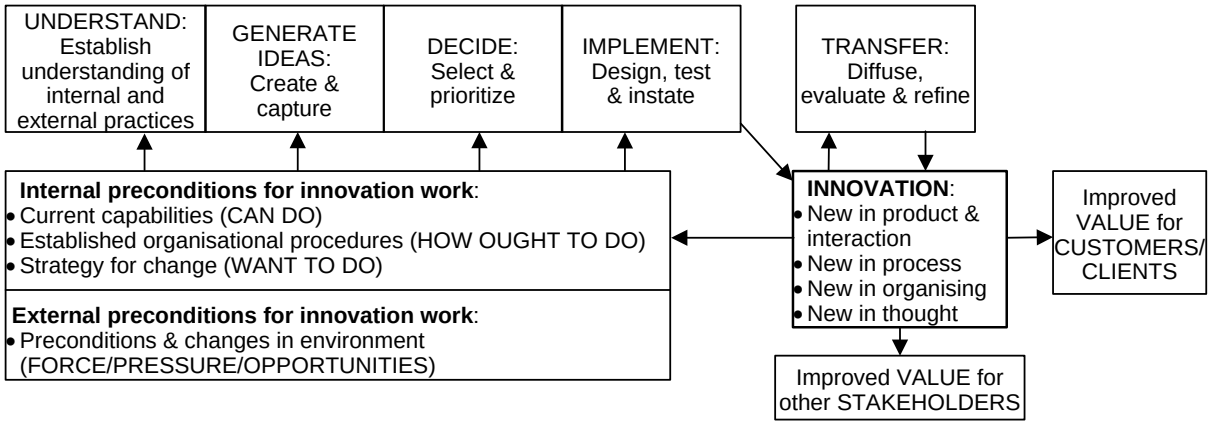

Figure 5. The new innovation model

The innovation process is divided into five phases (activities) instead of the three in the initial model. We added a new phase before about *understanding internal and external practices*. The third phase "implementation" has been divided into two phases; one *implementation* phase and one *transfer* phase where the innovation is diffused and maintained through continual refinements. Transfer means a transfer both in place (diffusion) and in time (refinement). The different phases has been re-conceptualised and re-labelled. Reasons for this will be described below (section 4.2-4.3).

As indicated above (and also described below in section 4.2), the participants had problems to identify and characterise an innovation in the studied organisation. This was due to an unclear innovation conception and too blunt interview questions that did not help the participants to clearly reveal the innovation. This led us to add different types and aspects of innovation. This will be further discussed in section 4.3 below. We also added improved value for customers/clients and for other stakeholders as explicit notions (boxes in the model) in order to emphasise the desired effect of the innovation.

In the initial model, the innovation context was restricted to "strategy and direction". In this enhanced model we expanded this to an encompassing designation of innovation preconditions of both internal and external origin.

As can be seen from figure 4 and 5 there are differences in shape between the models. The shape differences are, however, of secondary importance. The differences in contents are what is essential and what has been communicated to the participants in the learning program. The modifications in shape follow our aim to clarify the distinctions between the different parts of the innovation model; see above (this section) and below (section 4.3 and 4.4).

4.2 Empirical grounding

The initial innovation model was tested empirically through the teams' use of the model. Their use and problems in using the model become apparent both in their reports and in the dialogue in seminars. In the reports it was evident that they had difficulties in producing knowledgeable results due to lack of support for the analysis of the data they retrieved from their field work. In the seminars we

experienced that participants lacked possibilities to relate emergent insights and dialogues to the model and needed a richer foundation for dialogic knowledge development. Also we researchers lacked features in the model in order to relate issues and concerns that were brought into the discussion.

Defining, delimiting and characterising innovations

At the first analysis seminar it was evident that the teams had significant problems with demarcating and defining the innovations that they had studied. Also in their role as providers of an innovation, the teams were puzzled over how to describe the innovation and what change elements that constituted the actual innovation. All organisations had problems to define, delimit and characterize the innovation. One team called their studied innovation simply "*a cultural change*", although it actually consisted of several concrete changes. Another team focused on parts of an innovation that the host organisation thought was irrelevant. Yet another organisation wrote in their report "*It has been difficult to determine which the innovation is. On a concrete question we have received various answers. One person perceived that it was the way of working […] according to another person it was the new environment that was the innovation.*". A fourth organisation had focused on a minor detail of a larger context that was the actual innovation according to the host organisation. At the seminar there were lively discussions about what actually constituted innovations. Especially there was a lack of clarity concerning the question of if it was the process or the product that was the innovative core.

There were two organisations that in particular had made changes in the overall perspective and objective on how to do things. Their innovations concerned explicitly new mind sets regarding their identity and commission. They had, over a long period of 10-20 years, transformed their organisations and manifested the new ideas in processes, structures and products. There was a clear need amongst participants to understand how different parts and characteristics were related and fitted together. Our conclusion was that we needed to provide a more sharp definition of innovation and a more detailed conceptualisation of what actually constitutes an innovation and its organisational character. This includes a radical change in thought as one prominent part of an innovation.

An innovation story that make innovation comprehensible as an ongoing organisational process

An innovation story is a narrative about one organisation's innovation that the team writes on the basis of their interviews and complementing documentation. The story covers the process from idea to implementation and describes what happened during the process and who did what. There should also be a description of the innovation and promoting and inhibiting organisational factors. At the first seminar there were surprisingly detailed stories concerning the conception of the innovation. The historical descriptions were rich when it came to the circumstances and what had happened when the innovation idea came into place, even though those beginnings were 10-15 years back in time. The most striking trigger in the innovation story of one participant, the Swedish Tax Agency, was that it all started with that the well-known director Ingmar Bergman was picked up by a tax bailiff and police at theatre rehearsals in 1976. This harsh treatment made Bergman move abroad causing headlines in Swedish newspapers. This started a debate of the role and identity of the Tax Agency, both inside and outside the authority, leading to the paradigmatic transformation from a feared tax bailiff to a modern service authority.

We understood that the teams had a need to make the course of actions comprehensible and that it was important for their learning to understand and describe those actions as ripple effects in organisational action. In all seminars it has been evident that an innovation story is very important for the members of both the study team and the host team. In order to understand and discuss the innovation as an ongoing organisational process we had to develop a better conceptualisation in support for this need. One example is that when teams where describing promoting and inhibiting organisational factors those belonged to different phases in the ongoing innovation process. In order to make sense of such factors we needed to relate the factors to the relevant innovation phase. For example the inhibiting factors "*resistance from employees*" and "*altered power relations*" are related to the implementation phase and the promoting factor "*creative climate*" relates to generation of ideas while the promoting

factors "*endurance*" (the ability to be persistent until you see the results of the new implementation) and "*understanding consequences of changes*" relates to the transfer phase in the new innovation model.

The trigger

It was interesting that several of the studied innovations seemed to have been triggered by random incidents. And also that the timing had played an important role. Coincidences (as for example; encounters between people (as Bergman, a tax bailiff and a police), an exhibition, money in a project, research findings) in right combination with internal or external preconditions for innovative work suddenly makes the timing right for a new idea.

We also saw that most innovations were triggered as a solution for a problematic or unwanted situation. But some of the innovation processes had exploitation of opportunities as fuel.

Value for whom

Most organisations did not have a clear view of who their customer was for the particular innovation under study. To begin with the concept of customer is blurred in the public sector. Most of the teams were not comfortable with using the concept of customer or client to address the receivers of their services. Instead they preferred concepts like citizens, patients or users. If we go back to the definition of innovation, an innovation must have added some value for some customer (OECD, 2005). For most organisations it was problematic to define what customer that had received what value and talked instead more general about "*internal efficiency*", "*thinking in new terms*", "*being innovative and creative*". A few were not having this vague idea of who the client was, one example is a participating library organisation that had changed their interpretation of their commission from "*increase the use of the library*" to "*reduce the non-use of the library*". They had a clear picture of the client group – the non-users and also why it was important to make them read more. Another example was a hospital that during the latest 20 years had built a "*secure movement system*" where care staff and patients worked together when patients were moved physically. For the hospital team it was clear that the recipients of the innovation were both staff and patients. The value of the new way of working was evident; they had removed repetitive strain injury within staff and pressure sores on patients.

Creativity vs. structure

In the dialogue between participating organisations we became also aware of that there was a "romantic" idea about creativity related to the concept of innovation. This made us realise that we needed to deal with the concept of creativity and relate this idea to a more mature conceptualisation of an ongoing process of innovation where creativity could be related to relevant phases and where structure and systematic work also has its place in the innovation process.

Discussion on validation

The new innovation model was gradually designed during and after the first learning circle in order to handle identified problems with conceptualising the innovation and the innovation process. In the second learning circle the new model helped to be more precise in the concepts and terms used and also to be more consequent in the use of the concepts and terms. The conceptualisations in the model were injected in the second learning circle in several ways:

- In the invitation to participate in the program
- In the program description
- In our presentation slides in the seminars
- In instructions for the field work (on how to interview, analyse and report)
- In the interview guide (both new questions and better precision in formulations)
- In the dialogues between the participants during the seminar

In the second learning circle we experienced that the participants had been able to perform empirical field work of higher quality. They were able to identify and discuss, in a clear manner and related to

the model, what they had observed. This was in contrast to the first learning circle where we experienced confusion and sometimes reporting of idealisations and wishful thinking concerning the studied innovation processes. The teams in second learning circle could better identify the innovation and the innovation process in the studied organisation. In the first learning circle the teams identified promoting and inhibiting organisational factors, but it was difficult to relate them to different phases in the innovation process; in the second circle they easily pointed out those factors according to different phases in the model. Overall we saw a conceptual improvement that made it easier for us and the other teams to compare the results of the field studies, i.e. to identify similarities and differences. We perceived that this made all of us go a little further in our analysis and understanding. Even if we think the improvements are substantial we still think that there is room for more improvements. One example is that we are not yet satisfied with how the teams reflected on "value for customer"; in the second learning circle we only saw two of the teams having an elaborated understanding on customer value in relation to their innovations.

4.3 Theoretical grounding

The development of a new innovation model was not only inspired by empirical observations, as described above. The development process was also theory-informed. We investigated the theoretical bases for the initial model and searched for different theoretical sources that could guide us to develop an improved model. We describe the selected theoretical sources below following the division into three parts (the innovation concept, the innovation process, the innovation context). The selection of theoretical sources was mainly done based on themes identified through the empirical work. Practical and conceptual problems guided us to search for relevant literature.

4.3.1 The innovation concept

The initial innovation model (Hovlin et al, 2013) was based on a division into mainly three types of innovation: Product innovation (covering both goods and services), process innovation and organisational innovation. This division followed the so called Oslo Manual (OECD, 2005) where four types of innovations were categorised: "An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations." (OECD, 2005 p 46). The adaptation to a public sector context implied that the "marketing method" type of innovation was downplayed. In Hovlin et al (2013) there is an explicit reference to a Norwegian official report (Norges Forskningsråd, 2012) on innovation where types of product, process and organisation innovations are emphasised.

Even if it often seems appropriate to speak of *types* of innovation as made above, this might be problematic in some situations. The type of innovation view put forth as these three (or four) types as distinct types can be misleading, i.e. that one specific innovation is of one specific type. Goffin & Mitchell (2010) use the concept "dimension of innovation" when introducing their innovation typology. Tidd & Bessant (2013) use the concept "innovation space" to describe their typology. It is modelled as a circle and described as the "4Ps of innovation space" (ibid p 25); see figure 6.

Another similar model is the "innovation radar" (Sawhney et al, 2006) with as many as 12 dimensions, although several of them seem to be commercially oriented. With inspiration from these models, we would like to re-frame the innovation concept. We would like to avoid talking about *type* as a main division ground. Instead, we prefer talking about dimensions or aspects, emphasising that a specific innovation may cover several dimensions and not only one. This is a view of innovations as *multi-dimensional*. Such a view follows also the emphasis of pursuing a comprehensive and systemic change in innovation endeavours (Fernandez & Rainey, 2006). This view is also more in line with what we saw from the empirical material accounted for in section 4.2 above. Such a view should guide an inquirer to *search for different dimensions* of a specific innovation instead of positioning it as one of several possible types. Even if the Oslo Manual builds on a divisional view of innovations in separate

types, there is actually one comment that goes in the multi-dimensional direction: “However, many innovations may have characteristics that span more than one type of innovation. It can be both difficult and misleading, in terms of types of innovation activities undertaken by firms, to categorise these innovations as a single type.” (OECD, 2005 p 53).

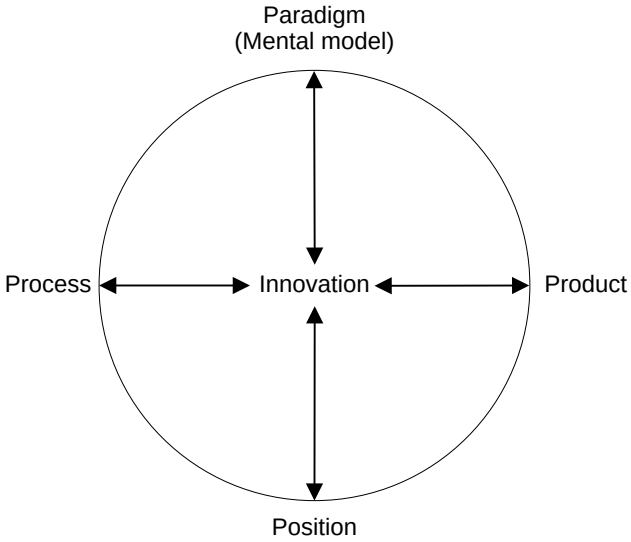

Figure 6. The 4Ps of innovation space (from Tidd & Bessant, 2013 p 25)

This led us to re-define the innovation concept through re-framing innovation types to innovation dimensions. Our point of departure is that an innovation, in principle can be characterised as something possibly new in product, new in process and new in organising. Our position is not that all these dimensions need to be covered by one innovation. We have refined two of these dimensions (process, product) by adding some more conceptual nuances to them. This will be described below.

In this investigation we also added one dimension to the three earlier ones. One of the 4Ps by Tidd & Bessant (2013) is “paradigm”, i.e. a shift in mental model. Verganti (2009) puts forth the *change in meaning* as a key characteristic of successful innovation. This implies for example a changed view of a product; a *new interpretation* of what a kind of product means. This is a *change in thought*. With inspiration from these theoretical sources and the innovation examples from the co-learning program, we have added “new in thought” as one important innovation dimension. This altered way of looking at innovation has led us to create a new model focusing innovation space (figure 7). This is a complementary model to the main innovation model (figure 5) that covers also the innovation process and the innovation context.

This innovation space model is developed with inspiration from the model of Tidd & Bessant (2013); figure 6. New in thought corresponds to the paradigm component. This means a change in perspective and objectives. The product dimension from Tidd & Bessant (2013) has been expanded to also include other parts of the interface/interaction between the providing organisation and its customers/clients. As described by Sawhney et al (2006) it is important to re-think “customer interaction across all touch points and moments of contact” (ibid p 78). With inspiration from Goldkuhl (2007) we here state that interaction covers all actions and objects in the interface between the provider and the customer/client as proposals, agreements, delivery, pricing, payments and assessments. Further, the process dimension of Tidd & Bessant (2013) is broken up in two dimensions (new in process; new in organising) following the initial innovation concept and also divisions in OECD (2005). New in process may include changes in activities and supportive instruments of material and/or informative character. New in organisations may imply changes in competencies, roles and relations.

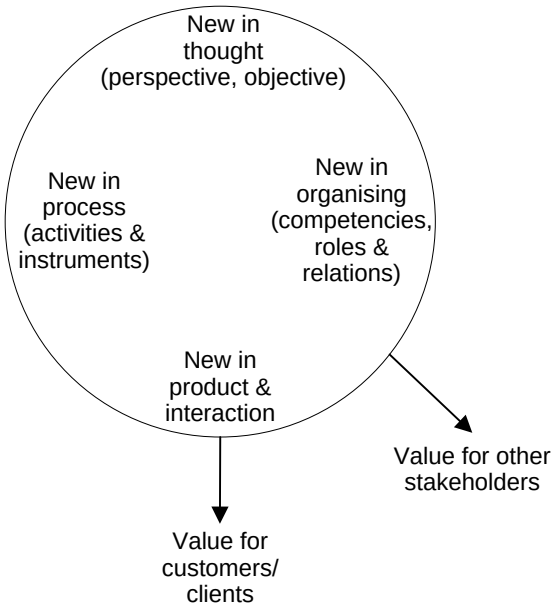

Figure 7. An innovation space model

With our focus on public sector innovation we have taken away the market position dimension. We have also added outside the scope/circle "*value for customers/clients*". This is done to emphasise that innovations should lead to positive effects for customers/clients. In the innovation radar model of Sawhney et al (2006), user experience is mentioned as one of the innovation dimensions. We have also added "*value for other stakeholders*". In a public sector context, it is important to be well aware of other stakeholders and how an innovation affects those (Borins, 2002).

The ordering of dimensions in the model is also made in a deliberate manner. First (the top), there is a change in thought. Then, there needs to be shifts in internal processes and organising (in the middle) in order to create new/changed products (at the bottom). The potential value for customers/clients is outside the circle/scope of the organisation since it is beyond its control.

4.3.2 The innovation process

The initial model consisted of three process stages: 1) Promote creative ideas, 2) prioritize and run a portfolio, 3) implement, diffuse & evaluate. It is not clear from Hovlin et al (2013) or Brattström (2012) why these stages were chosen. This staging of processes seems to represent a "common-sensical" knowledge of the innovation process. There exist several models that describe the innovation process in similar ways. In Goffin & Mitchell (2010) the innovation process is divided in these steps: Idea generation, prioritization and implementation. In Tidd &Bessant (2013) the innovation process is divided in four steps: Searching (for ideas), selecting, implementing and capturing. This means that a fourth step of capture is added here. A similar model can be found in Hansen & Birkinshaw (2007). A more sophisticated model is described by Orange et al (2007). This model consists of two cycles: 1) a pre-innovation cycle and 2) an innovation cycle. Each cycle consist of several steps. Pre-innovation consists of idea search, selection and pilot implementation. A possible move to the innovation cycle is made through an explicit evaluation stage-gate. The innovation cycle involves further requirements definition, designing and building as part of a full implementation process.

The three-stage model of innovation (figure 4) has been expanded to five steps in the developed model (figure 5). A new stage has been added before the idea stage: *Understand*. In many models of creativity and problem solving, there exist initial stages of problem understanding (Lubart, 2000). This can be seen in classical models by Dewey (1910) and Wallas (1926) and also in many later models, e.g. Treffinger (1995); see also an overview in Lubart (2000). The classical four-stage model of creativity by Wallas (1926) consists of the following phases: Preparation, incubation, illumination and

verification. The preparation phase involves an initial problem definition. In Dewey's model for problem solving there are two stages before formulation of a solution: Experience of a difficulty and problem definition (Dewey, 1910). The importance of a preparatory and problem-focusing phase is accounted for in innovation models as well. Mulgan (2006) describes the process for social innovation to start with understanding needs. Verganti (2009) emphasises the importance of "listening" and "interpreting" as initial processes of innovation.

In the initial model (figure 4), the idea phase was described as "promote creative ideas". We found this designation as too restricted. Our suggestion is instead to describe it as "*generate ideas: create & capture*". It is important, following the thoughts from the open innovation approach (Chesbrough, 2003), to acknowledge that all ideas need not come from the organisation itself. It is pivotal to scan the environment in order to *capture* potentially interesting ideas.

In the implementation phase, we have included the sub-activities of *design* and *test*. Ideas do not present themselves as full-fledged innovations. There are necessary steps of visualising and refining a creative idea into something ready to instate in the organisation (Lawson, 2004). Verganti (2009) label his approach to innovation as "design-driven innovation". It is often important in the design process to work with prototypes and pilot installations in order to test ideas in small, but somewhat realistic settings (Mulgan, 2006; Orange et al, 2007).

We have also singled out a fifth phase (labelled transfer) as activities after the innovation implementation. Making this a separate and distinct phase is one important contribution of the new innovation model. Another contribution is introduction of the sub-activity *refine*. In his process of social innovations, Mulgan (2007) has added a stage after diffusion and assessment labelled "learning and evolving". He describes this final phase in the following way: "In a fourth stage, innovations continue to change: learning and adaptation turns the ideas into forms that may be very different from the expectations of the pioneers. Experience may show unintended consequences or unexpected applications." (ibid p 154). It is important to see that it is necessary to have a maintenance view on innovations in the public sector. Innovations need to be cultivated and continually refined. Denning (2004) emphasises the virtue of being persistent as one of the key attributes of a successful innovator.

4.3.3 The innovation context

In the initial innovation model (figure 4), there is a "foundation" consisting of strategy and direction. This can be seen as the designated innovation context. In the original model of Brattström (2012) this context is designated as innovation strategy. As mentioned above, Brattström's model has resemblances with innovation models in Goffin & Mitchell (2010) and Tidd & Bessant (2013). In these other models, the view of the innovation context is broader. Tidd & Bessant (2013) speak about the need for an innovative organisation besides having an innovation strategy. Goffin & Mitchell (2010) have an even broader conception by adding a people component to organisation.

Amabile (1988) has studied and conceptualised creativity as part of innovation processes, and hence relations between individual creativity and organisational arrangements. The organisational preconditions include organisational motivation (a strategic component) and management practices. In individual creativity, expertise and skills are emphasised, thus capabilities of the individuals. In our developed innovation model (figure 5) we have made an action-oriented division into three preconditions: 1) Strategy for change and innovation (a component of organisational motivation), 2) established organisational procedures (organisational arrangements of prescriptive force) and 3) the current capabilities (i.e. what people can do).

All these preconditions are of internal character of the organisation. To such internal circumstances, we have added external preconditions. To perform innovative changes, it is usually necessary to have a good view of external circumstances. This is clearly so in commercial firms, and so also in public sector organisations. In the open innovation approach (Chesbrough, 2003), the importance of an inflow of external ideas into the organisation is emphasised. It is however not only ideas that needs to be furnished into the organisation. In order to develop viable innovations, there is a need for broad

knowledge about different external preconditions. Costello et al (2013) describe an innovating organisation to be part of an innovation ecosystem where other organisations and public policies play important roles. Confer also Bommert (2010) about the needs for public sector organisations to apply a collaborative and inter-organisational approach to innovation. In Hovlin et al (2013) different incentives for public sector innovation are identified. Several of these are external. In our characterisation of external preconditions, we have mentioned three aspects: Force, pressure and opportunities. By force we mean the legal and political force that coerces the organisation to direct their work in certain ways. The concept pressure expresses something does not have coercive force, but a strong influence from the environment; e.g. citizens as clients that express certain expectations and demands on the public organisation. There can also exist different external preconditions that may function as potentials for change if exploited (opportunities).

4.4 Internal grounding

We have aimed for a *conceptually clear* and *coherent* model. This implies also that structure of the model and the character of the different model components need to be designed in a thoughtful way. An action-oriented conceptualisation is used as a foundation for our division into different parts: Preconditions, actions/processes, results and effects (Blumer, 1969; von Wright, 1971; Goldkuhl, 2007). The components of the model have been clearly designated as belonging to one foundational category. There is a division into external and internal *preconditions*. There exist five explicit *process* components, each with a label. These process components are subdivided into sub-processes. The *result* of these processes is the innovation. The innovation has *effects* on customers/clients. The emergence of the new theory has several sources as described above. It can be seen as an amalgamation of different empirical and theoretical sources. It should not be considered as a hodgepodge of these different influences. The action-theoretical basis has helped to create an internally coherent framework.

5 Conclusions

This paper has contributed with a practical theory on public sector innovation. The practical theory should be conceived as a contribution on how to view innovation processes and innovations in the public sector. Through the descriptions of the theory's emergence (in theoretical and empirical grounding), the paper also contributes with conceptual transparency to the theory; why certain constructs have been favoured instead of others. The focus is on the *use* of different model constructs for inquiring and learning about innovation.

In relation to the initial theory, this new theory gives a richer view of public sector innovation. It brings an enhanced understanding which can be summarised as follows:

- A more elaborated view of the innovation process; with explicit designations of activities such as practice understanding (problem definition), idea capture, designing, testing and refinement.
- The need to investigate the multi-dimensional space of innovation; i.e. not considering public sector innovations as of separate innovation type, rather the opposite way to consider an innovation as covering different aspects of change.
- A shift in temporal view of public sector innovations; to see innovations as ongoing organisational processes with recurrent evaluations and refinements.
- An elaborated view of organisational preconditions for innovation; covering organisational motivations, procedural arrangements and creative and other entrepreneurial capabilities of individuals.
- A view of external preconditions that can bring both force/pressure and opportunities to the innovation process.

This practical theory aims to be an instrument for investigating and learning about public sector innovations and the innovative capabilities of public sector organisations. This has partially been

validated through this study of 13 cases, although further evidence is needed. One idea of this practical theory is that the guided learning should contribute to the development of innovation capabilities. The practical theory should also be possible to use as a design theory (Gregor & Jones, 2007) to guide the development of innovations. These topics (the development of innovation capability and the use for pursuing innovation work) are elements in a research agenda for further studies of this emergent practical theory. Future research will thus study further use of this practical theory in different situations and contribute to its continual development.

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