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Abstract

The realisation that public sector innovation is imperative has not yet been matched by fully developed knowledge of how to support it. As a response to gaps in the existing theoretical and practical knowledge concerning how to support innovation in the public sector, the paper suggests a tentative model for designing innovation support in public sector organisations, the MIO model. The model has been developed as a practical theory and is based on extensive empirical research into innovation and innovation support in Swedish local government, and it is theoretically informed by an integration of innovation studies and theories on organisation and workplace learning. Rather than prescribing exactly what to do and how to formulate innovation support, the MIO model focuses on the core conditions for informed and locally embedded innovation support.

Introduction

From having been a non-issue to becoming a fringe topic, innovation has become a hot issue in the public sector. Although the public sector has always been innovative, it was not until recently that the term “innovation” has been used. Many governmental bodies in the OECD – including local governments – are now faced with the challenge of supporting innovation in their own organisations. In many cases, they lack the role models and the in-depth understanding of the term “innovation” which is needed to facilitate design of suitable public sector innovation support. In 2009, Høyer found that three different views of innovation prevailed among those working with innovation at a regional level in Norway: innovation was seen either as a new concept of an old phenomenon, as a technical term associated with profit or as a buzzword. Wegener and Tanggaard (2013) reach similar conclusions. In interviewing people working in health care, they find that innovation is used (1) as a legitimising lever (to legitimise existing practice), (2) as a methodological lever (to encourage “thinking outside the box”), (3) as a power lever (a way to position oneself as innovative and thus obtain leverage) and (4) as a lever for saving (another word for saving money). In no case is innovation perceived as a positive force that can contribute to fulfilling the organisations’ missions. These findings call for a different way of working with innovations in the public sector.

The purpose of this paper is to address the gaps in empirical and theoretical knowledge by introducing a tentative model for designing innovation support in public sector organisations. We first provide a brief overview of previous studies and perspectives in innovation studies. We then present some of the empirical observations we have made in our studies of innovation in local government in

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Sweden. Both sections provide insights into some of the theoretical and empirical gaps that inspired us to develop the MIO model. The research approach and development of the model as a practical theory are described in the third section, which is followed by an elaboration of the model in the fourth section. In the final section we make some concluding remarks.

Understanding innovation in the public sector

Innovation in the public sector is a marginal phenomenon in innovation studies (Nählinder 2013; Fogelberg Eriksson, 2014; Gallouj & Zanfei, 2013). Whereas the body of research concerning innovation in manufacturing is substantial (Fagerberg, 2005) and the body of research concerning innovation in services has come of age (Carlberg et al, 2014; Gallouj & Savona, 2009; Miles, 2005), the body of research concerning innovation in the public sector is still small and scattered throughout several academic fields (Gallouj & Zanfei, 2013; Potts & Kastle, 2010). However, research interest is also growing in the field of public administration (Mulgan, 2007; Osborne & Brown, 2013; Hartley, 2005; Albury, 2005). In a recent overview of the literature, De Vries et al (2016) has shown that empirically based research in this field often lacks connection to theory and the concept of innovation is often loosely applied.

What then should be regarded as innovation in the public sector? Kattel et al (2013) have undertaken the difficult task of comparing definitions of innovation in the public sector to reach the conclusion that these definitions differ substantially, and to such a degree that definitions of public sector innovation lack almost the smallest of common denominators. In this paper, we have used two definitions that do not originate in innovation in the public sector, one of which is taken from the influential guide on innovation in the private sector “the Oslo manual” (OECD, 2005) and the other from The Oxford Handbook of Innovation (Fagerberg et al, 2005). An alternative practical perspective on innovation, often used by practitioners and policy makers in Norway and Sweden, is that an innovation has to be N^3 : *ny*, *nyttig*, *nyttiggjort* (something new, that is useful and in use). Wegener and Tangaard (2013) also refer to N^3 , relating it to Mulgan (2007, page 6):

“Public sector innovation is about new ideas that work at creating public value. The ideas have to be at least in part new (rather than improvements); they have to be taken up (rather than just being good ideas); and they have to be useful”

All definitions point to two central requirements for an innovation: it needs to be (1) a novelty and (2) implemented. In the classic case, the manufacturing sector, this might be a (1) patented invention which (2) is brought to market. In our case, in the public service sector, this might be (1) an idea for a new public service which (2) has been implemented and put into use. Our definition of innovation is

wide enough to apply to the public sector and at the same time also links the innovation field in the public sector to other fields of innovation studies.

However, the wide definition (a novelty which is implemented) needs to be operationalised. This operationalisation needs to take into account both the character of the product output (goods or service) and the character of the sector (private sector or public sector). The concept of innovation is thus made relevant for the public sector, which Høyer (2009) and Wegener and Tanggaard (2013) show is not always the case. We call this *the double translation*.

When innovation is discussed, it is often understood as high tech product innovation: this is difficult to relate to the innovation challenges faced by the public sector. There is ample research on the first translation (from goods sector to service sector) in innovation studies (Carlberg et al, 2014; Miles, 2007). However, the second translation (from private sector to public sector as an institutional context) is seldom made (Gallouj & Zanfei, 2013), but is a growing research field. Public administration research into innovation in the public sector has developed in parallel with innovation studies, and thus has the tendency to not relate to the field of innovation studies nor distinguish between innovation in manufacturing and innovation in services (De Vries et al, 2016).

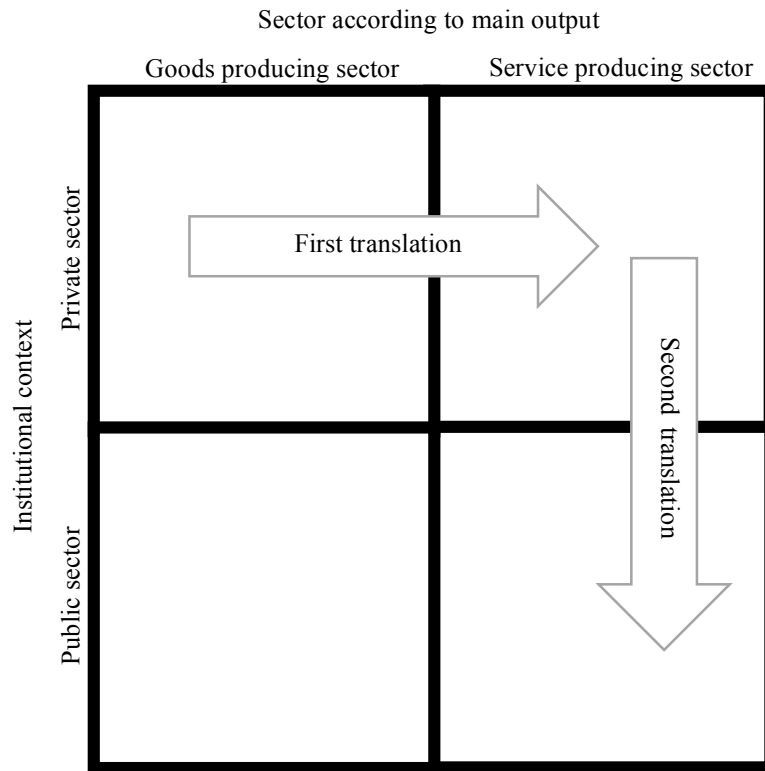


Figure 1. The double translation of the innovation concept.

The concept of the double translation is an important metaphor to understand that an innovation in the public sector is not necessarily similar to an innovation in the private manufacturing or service sectors, since the institutional context is different. Innovation in the public sector is even more complex than in the private sector, since public sector organisations must realize many and sometimes conflicting goals (Considine et al., 2009). We coin the notion of the *innovation palette* to describe the heterogeneity of innovations which are possible in the public sector. As a consequence, even innovation support may have to be different. Systematic innovation support may require other characteristics in order to also actively support innovation in the public sector.

Thus we claim that a double translation is essential if we are to understand and support innovation in the public sector. Nevertheless, we would like to draw attention to the reduction of complexity in the representation of the double translation in the stylized figure (Figure 1). Firstly, the terms goods sector and services sector build upon the classification of economic activities into primary, secondary and tertiary sector activities (Fisher, 1939). The classification thus therefore distinguishes between sectors (industries) whose *main* output is the extraction of raw materials, goods and services. There are numerous scholarly typologies and distinctions relating to innovation, and these should not be confused with the broad division of goods and services sectors. Most kinds of innovations will be found in both sectors. Services in the public sector can, for example, encompass products, processes and organisational innovation at the same time (Fogelberg Eriksson, 2014), and this is something which is not captured by dichotomising goods and services.

Secondly, the distinction into private sector on the one hand and public sector on the other, is not clear cut. Many activities, such as quasigovernmental bodies or privately run enterprises reliant upon public funding, lie in between what is presented as a dichotomy in Figure 1.

Thirdly, one important conclusion from Figure 1 is that the public sector is a service provider, and not a goods provider. In the words of Hartley (2005, p 27) the public service constitutes "...a change in the relationships between service providers and their users". However, the public sector is often reliant upon goods produced elsewhere (i.e physical artefacts such as computers or hospital beds, school books etc). Roads for example are provided by the public sector although they are not produced by it.

In sum, innovation in the public sector is characterized by considerable heterogeneity. As a result of the second translation, we coined the notion of *innovation palette* in order to be able to embrace the entirety of the innovations that emerge and are implemented in public work.

Innovation modes

While the second translation shown in Figure 1 places innovation in an institutional context ("public sector") it is also necessary to place it in an organisational context. Much idea generation, development and implementation take place on the organisational level, and likewise innovation support is developed and distributed on this level. Research on innovation (Jensen et al 2007) has pointed out that there are two main types of innovation modes, and here we use these distinctions to better understand innovation processes or modes of innovation on the organisational level. The first type is called STI (science, technology and innovation) and the second DUI (doing, using, interaction). These innovation modes are based on different types of knowledge and require different resources. The resulting innovations also differ. STI-type innovations are often based on R&D, require explicit funding and, in manufacturing sectors, are often patentable. DUI-type innovations are often made in the course of every-day work and are not given extra resources. These innovations are usually taken for granted in an organisation and stay invisible since they are not noticed. STI and DUI are not distinct categories but endpoints on a continuum. They help us to see the fact that the word innovation is commonly associated with STI, while concepts such as employee-driven innovations (Høytrup, 2010), practice-based innovations (Ellström, 2010), bottom-up innovations (Hartley, 2005), or every-day innovations (Nählinder, 2011) are connected to DUI. Whereas STI requires innovation support measures in order to be realized, DUIs are usually not explicitly supported, see table 1.

Table 1. Comparison between STI and DUI. Source: Fogelberg Eriksson and Nählinder (2015), Savory (2009), Salge (2012), Jensen et al (2007).

	STI (Science, Technology and Innovation)	DUI (Doing, Using, Interacting)
Initiative	Management	Employees
Resources needed	Large: usually needs specific resources (a budget post) and organisation (project)	Small: usually takes place as an integral part of every day work
Visibility	High, since it requires extra resources/organisation	Low, since it is integral part of every day work
Diffusion	Since they are visible they are also easier to diffuse	Often difficult to diffuse since they are highly dependent upon their organisational context and often stay invisible
Typical support procedures	Innovation management Development projects	Suggestion box Continuous improvement Innovative/creative climate

STIs and DUIs are present in all three quadrants of Figure 1, but may take different forms. It is important to keep this in mind and not stumble into the false logic of associating STI with innovation in manufacturing and DUI with innovation in services. We claim that it may be particularly important to pay attention to the DUI mode since innovation imperatives in the public sector are often aimed towards broad categories of employees who are suggested to be innovative in their everyday work. In this sense, innovation processes may be conceptualised as learning processes in everyday work. Innovation and learning activities are thus understood as being embedded in work activities. These collective processes of “interactive learning” are of vital importance to the development of innovations (Lundvall, 1992). Innovation support for these kinds of innovative activities encompass creating and managing expansive learning environments (Fuller & Unwin, 2004), e.g. creating rich opportunities for employees to participate in a range of settings both inside and outside the workplace.

Supporting innovation is therefore complex, comprehensive and not easily arranged, since innovation activities are not separate processes, but intertwined in everyday work (cf. Hofstad & Torfing, 2015). It is for this reason practitioners may need guidance in how to think about innovation support, and researchers need instruments for inquiry and analysis. This is why we will introduce a practical theory as an approach which facilitates knowledge building.

Empirical experiences: problems and pitfalls in innovation support

We have conducted several longitudinal research projects on innovation in the public sector. These will be described more thoroughly in the next section which concerns methodology. We have found that although the public organisations we have researched have all had clear intentions and often mandates to incorporate systematic innovation support, to systemize innovative efforts has proven an arduous and time-consuming task. Despite good intentions with the innovation support it has not always been appropriate for the innovations desired.

In many cases, we have observed that practitioners have called for successful innovation support models ready for implementation, while in other cases, we have observed that knowledge and understanding of innovation have been taken directly from the manufacturing sector. In yet other cases, we have noted how innovation is not seen as a topic one has to learn, and no competence development has been offered. There is a lack of insight and knowledge of innovation in the organisations. If experts are engaged, they tend to extrapolate from private sector experience. Based on our research and our experience with practitioners, we have identified a number of joint problems in many of the public sector organisations we have studied and some possible negative implications of these problems, see Table 2.

Table 2. Three problems in association with innovation support in the public sector and some possible implications

Problems	Possible implications
1 Limited understanding of the term innovation and the applicability to the organisation	<ul style="list-style-type: none"> • Risk of seeing innovation as alien to the public sector. • Risk on focusing on the wrong kind of innovation (high-tech product innovation).
2 Innovation is not seen as means to a goal, but as a goal in itself	<ul style="list-style-type: none"> • Risk of supporting innovation because the organisation is supposed to and not because innovations are meeting the needs of the organisation.
3 Limited understanding of what is needed to support innovation	<ul style="list-style-type: none"> • Risk of using inadequate role models (manufacturing sector) for innovation support.

Coordinated knowledge is needed to design innovation support in a manner which avoids these three problems. In order to form a model of innovation support, we use theories on workplace learning (Fuller & Unwin, 2004; Ellström, 2010) and innovation. These different, sometimes overlapping, theories are integrated and combined with innovation studies in order to form a useful practical theory that covers the organisational dimensions of innovation support.

Research approach and methodology

Our methodology is inspired, by the interactive research approach and by practical theory. The methodology is in both cases based on close interaction with the empirical contexts.

Practical theory, which is akin to practice theory (Goldkuhl, 2006), is inspired by communication theorist Vernon E. Cronen's (2001) essay on practical theory (cf. Goldkuhl, 2010; Hultgren & Goldkuhl, 2013). Practical theory is both a methodological guide (for how to inform data collection and data analysis) and a model which is useful both in practise and for the research community. An important key concept is practical inquiry, which denotes a scientific activity that also has practical intent. Further, the practical inquiry must make a contribution to practise. The practical inquiry does not necessarily result in a practical theory, but is compatible (Goldkuhl, 2007).

According to Goldkuhl's (2007) interpretation, the practical theory comprise five constituents: conceptualisations, patterns, normative criteria, design principles and models; but he also emphasises that a practical theory may be limited to

one or a few of the five constituents. It is important to note that the specific normative criterion is an embedded feature of a practical theory.

Our way of conducting practical inquiry is through interactive research (Svensson et al, 2015), where we, as researchers, pose questions and formulate hypotheses together with practitioners. In this way we develop the practical theory, i.e. the MIO model. This method of conducting studies generates our practical theory.

Empirical studies in local government

The empirical studies on which we have based the model have all been conducted in Swedish local government contexts. We have conducted recurrent studies of innovation support in these contexts from 2006 until today. The studies are all interactive, primarily qualitative, and based on different research methods such as interviews, participant observation, data analysis and document analysis. We would also like to mention a theoretical paper that we developed within a recent project on innovation the public sector, since this has formed an important theoretical base for the MIO model (Fogelberg Eriksson & Nählinder, 2015). Three projects in particular have informed our work, all three funded by the Swedish Governmental innovation agency (VINNOVA). The two-year MIO-project on organisational conditions for innovation in the public sector, included recurrent discussions of aspects of the model with representatives of the two participating local governments, and found these aspects to be crucial for the establishment of operative innovation support. The Leadership lab on supporting management consultants in creating innovation support services aimed at the public sector, articulated the need for a practise-based model. The third project, a one year project Idea Gates in Local Government, acted as a test bed for the MIO model. Some of the empirical studies have been published (Fogelberg Eriksson, 2014; Nählinder, 2008; 2010; 2013), whereas results from our joint and on-going research projects still remain to be published.

The MIO model

We have identified theoretical as well as practical gaps in the understanding of how to support innovation in the public sector. We address these gaps by introducing the MIO model for understanding and designing innovation support in the public sector. The model is presented in Figure 3. It consists of a number of open questions in the form of statements, structured in a specific order into seven blocks. These blocks are complemented by a number of cross-block themes.

The model should not be seen as a simple “tick the box” but rather as the starting point of processes at several different hierarchical levels in organisations that want to systematically support innovation. The open questions form a framework for asking questions to identify knowledge gaps in the organisation. The organisation, or its actors, depict the *we* in the questions asked by the model. We implies that the model’s users need to reflect upon who *we* actually are. These

questions are the starting point for internal knowledge-building. The model directs focus onto some of the important questions that need to be answered in order to make innovation support an actual contribution to the organisation, rather than a mere symbolic response to an external pressure to innovate. This way of asking questions can be understood as a critical tool for analysis, i.e. to analyse problems before solutions are suggested. This bears resemblance to the critical approach to policy analysis introduced by Bacchi (2009): WPR, "what's the problem represented to be?"

Although the open questions may appear simple, their answers, however, are not. The main point is not to provide simple or "correct" answers to the questions, but rather to use them as prying tools to unearth gaps in the internal logic and gaps in knowledge-building. Thus, the questions are not only critical tools but also iterative tools to help design systematic and appropriate innovation support system. As a consequence, these questions are prompts for discussion rather than actual keys to innovation support.

In this way, the MIO model strives to present a basis for thinking analytically about these topics. The normative claims we make in the descriptions of the blocks and themes of the model are based on empirical and theoretical grounds that concern what can improve the practice of designing innovation support (cf. practical theory as a means to improve practice Hultgren & Goldkuhl, 2013).

Initial block: we know how innovation fits into our organisation

It is vital that the issue of innovativeness goes in line with the organisational goals and is incorporated into policy documents. The incorporation into policy documents relate to a basic assumption in organisational theory: the need for alignment and coordination in organisations (Mintzberg, 1979). Our own experience of empirical research into innovation in the public sector also points to the importance of aligning innovation support with organisational missions, policies, processes and politics – not least within a public sector setting where numerous policies and regulations co-exist. This approach calls for enrolling relevant actors and ensuring participation and collaboration, as well as supporting long-term development oriented learning (Brulin & Svensson, 2011).

It is also important not to overlook politicians in a politically governed organisation. In some of the processes we have followed, the mandate has been unclear and a great deal of time has been dedicated to relating the innovation issue to other organisational goals which suggests that these are not initially coherent. The lack of coherence necessitates a process of negotiation and learning. In some local governments, the starting point has been to incorporate innovation in other administrative systems in order to make it an integral part of the administration, rather than a marginalized project. In the organisations we have studied, we have found that it is important to be clear as to who drives the question of innovation, who is enrolled and that the issue of innovation is an integral part of the organisation and not a fringe project. As we will see, organisational fit at a management level is a

necessary but not sufficient condition for innovation support. We have also encountered cases where although there is a strong political mandate, the lack of including employees and first-line managers has been a strong obstacle.

First block: we know why we want to innovate

Innovations are new ideas which are implemented and are of use. That means that innovations are solutions to problems. Sorting out the kinds of problems the organisation wants to address by innovation may prove to be important since public organisations faces both “wicked problems” (which are diffuse and very difficult to solve, such as unemployment) and “tame” (defined problems with concrete goals, such as provide housing for refugees) (Rittel & Webber, 1973). This distinction can calibrate the expectations as to what innovation may solve. An implicit assumption is that innovations are a means, and not solutions in themselves: their main significance is in their value-addedness.

The organisations we have studied are unclear about their objective to innovate. Often, innovation is seen as an HR-related question (Nählinder, 2013), i.e. that the possibility to innovative is part of being an attractive workplace for employees. In other cases, we have observed that the imperative to innovate has been seen as a track that is separate from organisational development. In yet other, the decision to innovate has been taken on a strategic level, but it has been unclear for the organisation what innovation is supposed to achieve. In other words, the reason to innovate has not been related to solving or taming the wicked problems facing the public sector. Innovation tends not to be the response to the challenges of the organisation, but something unknown. As will be shown, this has important implications. Innovations may also be introduced as garbage-can-solutions (Cohen, March & Olsen, 1972) in public organisations, i.e. innovation is seen as a solution looking for problems – not vice versa.

Even if the objective to innovate is clear at a strategic level, it might not be the case at the operational level, as seen in quote 2 below. It is very important that first line managers are involved in the discussion about innovation. Otherwise, the question of innovation is seen as something extra, not in line with the organisational mission.

“We haven’t worked like that, with innovation. Nothing? It is all about budget matters for me in my role, how much funding is available? What do the politicians want from us that we don’t deliver? I don’t think that our employees are on track yet, not within the administrative services at least, maybe more so in other units. We need to start to open up for this also at the managerial levels” (local government Director)

A distinction is sometimes made between innovations which are predominately aimed at improving the internal organisation and innovations aimed predominately at improving services for the citizens. The latter is sometimes referred to as

social innovation (Bekker et al, 2013). Discussions regarding the degree to which improvements should benefit employees or the public also occur, with the underlying notion that the focus of innovation should not be to improve the internal processes of the bureaucracy, but rather to focus on its benefits for society and the citizens. If the organisation demands only one type or the other, this must also be reflected in the design, and of course be communicated to the potential innovators.

Second block: we know what an innovation is in our organisation and we can give examples

Innovation in the public sector may differ from innovation in the private sector. The understanding of innovation must be suitable for the public sector as an institutional context, as was discussed in conjunction with the thought figure of the double translation (Figure 1). The examples shown in Table 3 constitute a palette of different public sector innovations. The innovations presented in the table are all real examples and have been selected to provide an overview of the multitude of innovations that may exist and/or supported in the public sector. If the organisation is not aware of the multitude of innovations that exist, it lacks the opportunity to make an informed decision as to what types of innovations are needed.

Most of the examples in Table 3 are organisational innovations (defined by the OECD 2005 as the implementation of a new organisational method in practices, workplace organisation or external relations) and service product innovations (defined by the OECD 2005 as the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses). Example #1 is a goods product innovation and has the same definition as service innovation. It is rare for the public sector to produce goods, hence goods product innovation, such as the catheter underwear in Table 3, are rare. Organisational innovations, service innovations and goods innovations are support with the same support mechanisms, as we discuss below.

Some of the innovations are large innovations whereas others, such as #4, are small every-day innovations. In designing innovation support, it is paramount to make clear whether it should prioritize small every-day innovations of a DUI-type or larger innovations which require special investigation and explicit resources. These two extremes will need different types of support, as discussed below.

Table 3. An innovation palette: Six different types of innovation in local government. Source: Fogelberg Eriksson & Nählinder (2015).

Short description	Innovator	Type of innovation	Innovation process
1. Catheter underwear Underwear with a special pocket for urine bag.	Assistant nurse	Goods product innovation. A new product to offer to patients.	STI-inspired process
2. Mobile pap test bus A mobile unit for offering pap tests	The option was investigated in internal documents	Service product innovation. A new “offer” to the women in need for a Papanicolaou test.	STI: the problem of the low rate of women undergoing scheduled Papanicolaou test was presented in an internal report. This was presented as a possible solution.
3. Tax return app		Service product innovation. A new way of doing taxes.	STI: formal innovation process. The app was supported through the organisation’s innovation support system.
4. Wii for seniors. Using the game console Wii to activate elderly at a residence for elderly people	“Just someone working there”	Service product innovation. A new “offer” to the residents of an elderly care facility.	DUI: The employee brought a console from home and installed it and simply tried to see if it activated the elderly.
5. Gender equal snow removal A system for removing snow which prioritizes vulnerable road users (i.e pedestrians and cyclists) and not motorists	Collective	Organisational process innovation	DUI with support from a project that supported the expansive learning of employees by introducing a new perspective to the core processes of snow removal as a public service.
6. App warning for higher sea levels	Citizen	Service product innovation	An idea that was never put into practice, i.e. not in use.

Third block: we know what type of innovations we need and which to support

Public organisations have a substantial innovation palette. The type of innovation that organisations demand has an impact on the type of innovation support required, and this needs to be considered in decisions about innovation support.

Service product innovations, organisational innovations and goods product innovations

It is not uncommon for public sector organisations to design support processes for goods product innovation. This may occasionally be called for in the health care sector, but if organisational innovations or service innovations are needed, special attention should be given to design support for these, since they are not automatically supported by goods product innovation support. While goods product innovation tends to follow the path of deliberate, planned innovation in projects that are separated from ordinary practice, service innovation may very well take place as an unintended consequence in the service practice which is recognized as innovation afterwards (Toivonen, 2010). One of the features of service production is that the client/customer is involved. If innovation is to take place, it requires a management that is unlike that of administrative or strategic management (Torfing, 2012). If the organisation wants to support service product innovation – not least since service dominates in the public sector - it must also consider how these will be included and procured.

STI and DUI

In the public sector there is often a working system of STI-support (investigations and developmental projects) but the organisation seldom considers this to be innovative activities nor part of their innovative strategy. Support for STI is often very different from support for DUI. As described above, STI usually demands explicit support and resources to result in innovations, whereas it is more rare that DUIs are supported explicitly, and therefore more often are not encouraged. If the organisation demands DUIs, special attention must be given to design support for these since they are not automatically supported via STI-type support. The organisation also must be aware of already existing innovation support systems, such as traditions of investigating issues, lean, continuous improvement, quality management or suggestion boxes, since these need to be taken into account and related to innovation support. Innovation support should ideally not result in the duplication of work. The coordination between different DUI supports is often a major issue at the operational level, where, as Høyer (2009) describes it, the term innovation is often seen as a new buzzword for an old phenomenon.

In some of the examples in Table 3, the innovations were the result of DUI-processes, whereas in others, STI-processes were used. There is a connection between the design of innovation support and the type of innovations that emerge. If we are unaware of the innovation palette, and we are not clear about what type of innovations we need or want to support, we run the risk of designing an innovation support which supports the “wrong kind” of innovations. This was the case with example #1, where an innovation support system was designed to support goods product innovation. However, this required that the actual production of the product took place outside the public sector, and the product was not purchased by the

public sector once developed. It therefore created no value-added to the organisation. In terms of N³, the catheter underwear was both new and useful, but never used were it was developed.

Fourth to seventh block: generating, developing, implementing and diffusing ideas

The first three building blocks are fundamental and form the basis for discussions on innovation in an organisation. The answers to the first three questions could be regarded as a road map to expedite the operational phase.

Blocks 4 to 7 build upon the definition of innovation presented previously and distinguishes between an idea and its implementation. We have also added an extra step to separate the new idea from its development in accordance with N³. Often, work is needed to make the idea implementable. Therefore the generation of an idea (block 4) is not the same as the development of an idea (block 5) and the implementation of an idea (block 6). To these blocks we have also added the diffusion of an idea (block 7).

This division of the innovation process into four different blocks should not be confused with actual innovation journeys which very seldom are linear, see Figure 2. The division into different blocks is made for analytical reasons, since it makes the model a tool that enables and facilitates analyses of different aspects of the innovation process.

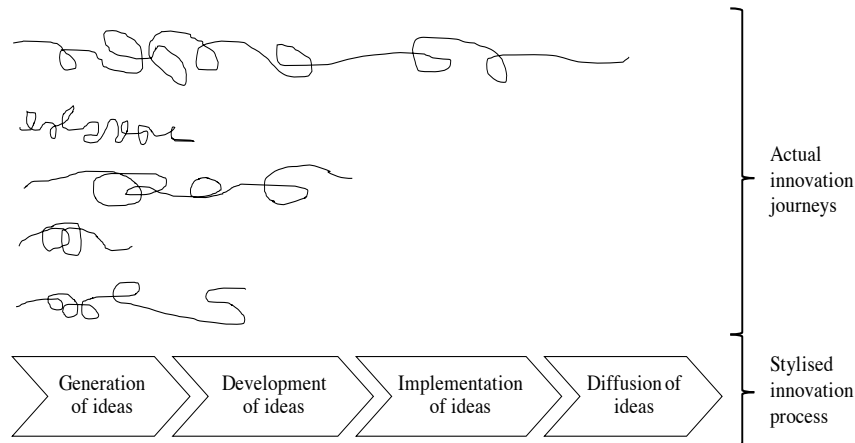


Figure 2. Innovation journeys and the ideal type innovation process. Source: Fogelberg Eriksson & Nählinder (2015).

In the centre of blocks 4-7 we have placed the individual, that is the innovator herself. The individual innovator is not necessarily a solitaire. Instead, innovation is often a collective endeavour. In mainstream innovation studies, the innovators

as such are not discussed for several reasons, one of which is the notion that innovation is a complex phenomenon which does not take place in isolation (Malerba, 2002). Since innovation is often seen from a systemic perspective, the actual innovators are second to the system that enables innovation. Implicitly, however, the innovator is part of an organisation and since STI-innovation is seen as the product of R&D, R&D engineers are crucial to innovation. The structure of knowledge creation in services, not least public services, makes R&D-departments and engineers in the public sector scarce (Hipp & Grupp, 2005). Therefore one difference between mainstream innovation and innovation in the public sector is that the question of who is seen as innovative needs to be addressed. We also want to point out that the innovators are often the same people in block 4 and block 5, i.e. the people who generate ideas also develop them.

In this context, we also want to mention the innovative capacity of the general public. If the organisation demands a larger involvement from the public or more open innovation, this needs to be taken into account. Example #6 in Table 3 was an idea generated by a member of the public which was not developed and implemented at the time. For further reference, see Kallio et al (2013) who discusses two models designed to incorporate the public into the innovation process.

Fourth block: we have a clear understanding of who will generate ideas

This fourth block focuses on the *generation* of ideas. The generation of ideas is closely connected to the creative climate, and this is believed to be crucial for generating ideas (Ekvall, 1996). However, the term innovative climate is sometimes used as a synonym for creative climate, and as a result, creativity becomes a false synonym of innovation. These understandings do not take the definition of innovation presented in the introduction into account, innovation=idea+implementation, and presumes that lack of creativity alone is the culprit (Kastelle & Steen, 2011). If we believe that the presumed innovators lack ideas, the creative climate needs support. In many of our studies, we have observed that the management level tends to discuss employees as uncreative, whereas the same employees describe the lack of interest in the ideas they present. We have also observed on one occasion how a major drive for innovation was reduced only to creativity enhancing exercises.

Fifth block: we have a clear understanding of who will develop ideas

At this point it is crucial to be precise about who is supposed to be the target of the measures facilitating innovation in the public sector. The ideal innovator must be unearthed and scrutinized in order to understand who she or he is, what freedom to innovate she or he has, what challenges are central and what motivates these innovators. If the organisation knows who the target innovator is, it may also develop a clear understanding on him or her and what support he or she needs in order to fulfil his or her innovative potential. Previous studies have addressed the idea that the gendered context of innovation may have an impact on both who receives support and the kind of support offered to innovators (Lindberg, 2014).

Being aware of the different conditions that innovators may face in their innovation journeys also calls for flexibility in giving innovation support. In a study of health care employees, the female innovators were considered to need more encouragement to innovate than their male colleagues and were also more likely to end their innovative endeavours prematurely (Nählinder, 2010).

Most ideas need some kind of development. STIs are usually developed along separate tracks such as in the governmental investigations and developmental projects like that in #2 in Table 3. In these cases it is also often clear who is supposed to be innovative. This is more problematic for DUIs, however. One of the properties of DUIs is that they seldom receive resources and they also tend to be the concern of everyone. This means that the development of ideas for DUIs is a very sensitive phase, which could be alleviated through the attitude and responsiveness of first line managers. If first line managers are involved, see innovations as useful tools to improve work and have the power and are able to support learning and ideas, these ideas are more likely to be developed into innovations. However, this is not always the case, as we saw in quote 2. It is also of utmost importance that the employees have resources such as time for reflection and time to develop and test their ideas at their disposal during working hours in order to develop their ideas. This is seldom included in local government innovation support.

Sixth block: we have a clear understanding of who will implement ideas

An idea needs to be implemented to become an innovation. This has proven to be a problem in many of the projects that we have studied. Although it is important that ideas are selected, as is discussed below, it is also important that the ideas selected do not fail without reason. One contributing solution to success is that the relevant actors are involved early in the process. We have identified three situations when good ideas fail to be implemented.

- Service product innovations which are intended to improve the quality of services often cost money and require a budget. This is less problematic in the private sector, since ideas are only developed and sold if they generate profit. However, in the public sector, extra services are a pressure on the budget. A new service would therefore typically meet some resistance if it is not evident that it will save money. A support system aiming to support service product innovations must therefore also decide (in an early phase) if the value added by the service innovation is inline with the added costs. A discussion to this effect took place within the Australian government's Public Sector Innovation programme (2012).
- Large organisations create a silo-mentality. If the innovation process has taken place outside the realm of the intended implementer, the implementation is likely to meet resistance.

We have observed on numerous occasions that the development of an idea has taken place in a separate project, with little contact with the environment in which it is to be implemented. An innovation support aimed at large-scale innovations must take extra care to involve the potential implementer.

- Some organisations see the possibility to be innovative as more important than the innovation itself. In these organisations the implementation of the idea is beyond the scope of the organisation. This has been observed in multiple local governments where innovation has become an HR-question of employer branding of the type “we offer interesting jobs”.

Additional themes

Figure 3 present the seven blocks on the left of the tentative MIO model. These blocks constitute the left column of the figure. However, this column alone fails to capture the complexity of innovation support. The other columns (or themes) highlight issues which are only touched upon in the seven blocks. These are discussed comprehensively below.

Efficient innovation support needs an expansive learning environment.

In order for innovation support to operate efficiently it needs to take organisational structural forms and organisational learning into account (Lam, 2005). Innovation may be considered as a learning process and is thus dependent upon the learning environment, i.e. the workplace/organisation. Research has shown that an expansive learning environment is more conducive to innovation than a restricted one (Fuller & Unwin, 2004). An expansive learning environment is characterized for example by a high degree of participation, teamwork, supportive management and planned reflection. This encourages and supports innovative thinking. Example #5 the gender equal snow removal of table 3 shows how an expansive learning environment was conducive for innovativeness, and provided a basis to the generation and development of ideas.

Therefore supporting innovation is not a limited task separated from core processes and organisational structures, a quick fix, but arduous work involving the whole organisation. Innovation support encompasses structural aspects such as the division of labour, organisational processes including participation, leadership, power, authority, and also cultural factors like trust and openness as well as subjective factors such as competence and self-confidence (Ellström, 2010b). While enhanced innovativeness is but one benefit of an expansive learning environment, it is also a complex challenge which takes time and resources. When innovation is introduced into the public sector as an issue, this calls for changed managerial practices and new ways of organizing work in order to enhance the conditions for innovation. In this sense managerial practise and innovation support are dynamically interrelated in creating conditions for an expansive learning environment.

BLOCKS	THEMES			
7. We have a clear understanding of how the idea will be diffused in and between organisations	1. Efficient innovation support needs an expansive learning environment	2. Efficient innovation support needs managers that are positive to innovation	3. Efficient innovation support must allow for ideas to ramble	4. Efficient innovation support includes selection of ideas
6. We have a clear understanding of who will implement ideas				
5. We have a clear understanding of who will develop ideas				
4. We have a clear understanding of who will generate ideas				
3. We know what type of innovation we need and which to support				
2. We know what an innovation is in our organisation and we can give examples				
1. We know why we want to innovate				
0. We know how innovation fits into our organisation				

Figure 3. MIO model.

Efficient innovation support needs managers that are positive to innovation.

Managerial support is crucial for change to take place and become sustainable (Brulin & Svensson, 2011). Managers on all organisational levels need to be involved to create favourable conditions for innovation. First line managers particularly play an important role in the innovativeness of the employees (cf. Wallo, 2008): as these managers are often the first to hear the idea and it is they who have the operational power to create an environment which is conducive for innovation. This group of managers often control resources which facilitate innovation, such as the possibility to develop the idea fully or partly during working hours, or even leave the workplace for a short meeting about the idea. They may also have the resources to implement the idea into an innovation. The first line managers are crucial, but, however, often lack the authority to follow the idea up (Andersson-Felé, 2008). In our research, we have observed how first line managers often are regarded (by the employees) as an obstacle to innovation, while at the same time, they lack the resources, the mission and the competence to support innovative ideas from the employees, as shown in quote 2. For example, one first line manager recalled that she systematically listened to the potential innovator and then would ask him or her to develop the idea before further action was taken. No resources or other encouragement were given, and this had a negative impact on future innovative suggestions.

Efficient innovation support must allow for ideas to ramble.

Most ideas are developed by the people who generated them. In the case of DUIs, these same people also implement the idea. However, in some cases it is not possible for ideas to be developed and/or implemented by the same individuals. In these cases, the ideas need to move freely or “ramble” in the organisation, as for example #6, where the idea came from a member of the public. Other ideas are easy to generate but need a great deal of resources to develop. In our experience, efficient innovation support must be able to facilitate idea rambling and also provide appropriate resources to support innovation.

Efficient innovation support includes selecting ideas.

An important, but often overlooked property of innovative ideas, is that most of them are not fit for innovation. Not all ideas are useful ideas. Ideas must be selected, so that only useful ideas are developed and then implemented into useful innovations, as seen in Figure 2. This can be done formally in some sort of stage-gate process. What is regarded as a good idea depends upon the reason the organisation has given for innovation and on the type of innovations it may support. The selecting of ideas must be done swiftly and objectively, and in a manner that does not discourage potential innovators from presenting ideas in the future (cf. Kastle & Steen, 2011).

Designing innovation support

The blocks and themes of the MIO model have been comprehensibly described. The model aims to ask questions which may help organisations to consider what needs to be done. Of particular importance is to understand how knowledge needs to be developed in order to design innovation support. We would, however, like to emphasize that the MIO model is a tool for asking questions, and that it does not in itself provide the answers. Answers need to be provided in relation to the different organisational contexts innovation support is introduced. In that sense, the model is not a blueprint for a public sector innovation support system.

In a recent workshop (December, 2015) of local government civil servants who were granted funding to develop innovation support systems, blocks 1, 2 and 3 were first presented in a lecture, then discussed in groups, whereupon the local government civil servants were asked to respond to four questions. It was clear that it took some effort for them to relate the blocks of the model to one another, i.e. align the support system to 1) the reason to innovate, 2) the ideal innovator and 3) the ideal type of innovation. It takes time and knowledge for reflection and problematisation to take place. Our empirical experience shows that if organisations discuss and sort out blocks 1-3 prior to their introduction to innovation support, this creates a more solid base for designing systematic and adequate innovation support.

Innovation support may be organized as a special project or a special organisational unit, but may also be distributed throughout the organisation. On a number of occasions we have seen how organisations have initiated their work on innovation by discussing particular IT-systems which resemble electronic suggestion boxes. They have not discussed what to do with incoming ideas or why the organisation should spend energy on innovating. These organisations tend to see innovation as an end in itself and not as a means for organisational development. In such cases, the support systems for idea collection may not prove very efficient since these systems are not embedded in the organisational and institutional context.

Concluding remarks

It is possible to make an informed decision about innovation and innovation support in the public sector. However, in line with the reasoning behind the concept of the expansive learning environment, we would like to emphasize that innovation support must invest not only on management and strategic planning, but also at expansive learning environments of the operational level. Working with innovation support must go beyond simple projects and requires a thorough organisational effort.

However, this work necessitates learning, problematisation and reflection about the issues that the MIO model suggests:

- How innovation fits into the organisation
- Why innovation is needed
- What an innovation is in the organisation
- What type of innovations are needed and how these could be supported
- Who will generate ideas
- Who will develop ideas
- Who will implement ideas
- How the ideas will be diffused

Reflection on these issues creates conditions for the public sector to make a double translation and thus make innovation a meaningful tool with which the public sector can fulfil its mission. Innovation may thus become a means to efficient organisational development rather than be reduced to a rhetorical goal in itself.

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