Innovation with effectuation: conceptual discussion and a case study

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Abstract

Stage-gate models focusing on the provider's R&D have been the norm in innovation processes. These models rely on strong pre-planning which is not compatible with the main issue of innovation: tackling the unknown. In this paper, we seek alternative approaches. We suggest that the broad view of innovation with its focus on learning by doing, using and interacting (DUI) provides a fruitful starting point. Combining it with the views of service-dominant logic (SDL) enables a deeper analysis of the collaborative nature of value creation and innovation. At the process level, the effectual approach is compatible with SDL and DUI: it highlights shared experience to solve problems whose answers are not visible beforehand. Thus, we consider it as a promising alternative for stage-gate models. We illustrate our arguments with a case study in the public sector. We describe an 'effectual-type' innovation process in which a city administration collaborates with initiative citizens groups.

Key words – Innovation models, the broad view of innovation, user-based innovation, service-dominant logic, effectuation

1. Introduction

In recent decades, innovation has been considered a crucial factor in the fostering of business growth and societal welfare. This emphasis is linked to the increasing rate of change and the significance of knowledge in present economies. At the beginning of the 'knowledge economy' discussion in the late 1980s and early 1990s, strengthening the knowledge base was seen as a central task. Soon it was realized that what matters is not so much the knowledge possessed by agents and organizations at a certain point of time but rather the capability of rapid learning (Lundvall and Johnson, 1994). The transfer of focus to learning highlights the significance of *new knowledge* and means that the knowledge economy is fundamentally an innovation-driven economy (Schienstock and Hämäläinen, 2001).

On the other hand, businesses, organizations and policy makers face many challenges when they implement the innovation-driven view. An issue that is increasingly discussed is the selection between the STI (science and technology -based innovation) and DUI (learning by doing, using and interacting) approaches. The former perspective focuses on processes in which science is the first step towards innovation. The latter view highlights competence building in networks and in the interaction with users, as well as employee participation. It points out that the increasing importance of science and codified knowledge in different sectors does not imply that experience-based learning and tacit knowledge have become less important for innovation. The intertwining of innovation with practice is clearly visible when innovations, including science-based innovations, are brought to the market. (Lundvall, 2007)

The DUI approach reflects the broadening of our view on the nature of innovation. This broadening started in the 1980s among innovation economists (e.g. Dosi et al., 1988) and is today included in the concepts of open innovation (Chesbrough, 2006) and innovation democracy (von Hippel, 2005), for instance. The DUI approach has also gained ground in the managerially oriented innovation research. Studies on user-based innovation (Sundbo and Toivonen, 2011) and employee-driven innovation (Kesting and Ulhøi, 2010) have aimed to concretize the collaborative ways of working that foster the coevolving of innovation with everyday activities. Despite these advancements, there are only a few

exercises that have pursued *an alternative process model* in innovation. The dominant models are still various stage-gate models based on in-house R&D activities.

The present paper takes a step forward in tackling this challenge. We examine the approach of effectuation (Sarasvathy and Simon, 2000; Sarasvathy, 2008) as a starting point to an innovation model that highlights openness and flexibility. Its particular strength is the focus on expanding cycles of competence and resource building instead of a fixed goal and preplanned steps. The effectual approach has close linkages to the basic thoughts of service dominant logic (SDL) developed by Vargo and Lusch (2004, 2008). Even though SDL has not yet been deeply analyzed in relation to the above-mentioned innovation theories, it has much in common with the innovation view that emphasizes the central role of learning – and its practice-based forms in particular. A core aim in SDL is also replacing the perspective of the producer-customer dyad with an actor-to-actor perspective (Vargo and Lusch, 2011). This transfer brings systemic considerations into the fore and is another expression of similarities to the broad views of innovation that highlight systems at various levels (Lundvall, 2007).

Our paper is mainly conceptual, but we illustrate our arguments with an example based on our case study. The example includes an innovation process that can be called 'effectual-type': some features of effectuation are apparent in it, but others are only emerging because the process is going on. The paper has been structured as follows. After this introduction, we summarize the central characteristics and problems of the STI approach, which from the process point of view is crystallized in the stage-gate model (e.g. Cooper and Edgett, 1999). In section 3, we introduce views that have paved the way for alternative ideas in the organization of innovation activities. Sub-section 3.1 summarizes the contribution of the approaches of value innovation and user-based innovation. The former highlights the significance of customer value but is restricted to the provider's interests. The latter concentrates on the role of the user, but is more a group of research streams than a unified perspective. Service-dominant logic, which involves a potential to combine the value-based and user-based views, will be summarized in sub-section 3.2. Section 4 ends the theoretical part and transfers the focus to the innovation process. It concentrates on the main arguments of the effectual approach, which we then utilize as the framework of our empirical study. This study presented in section 5 has been carried out in the area of public service innovations relying strongly on citizen engagement. Even though the public context has been rarely linked to the effectual approach in earlier studies, it is well in line with its focus on competence building in an open environment. Our empirical evidence exemplifies the active role of users and the collaborative opportunities between users and employees: it shows how citizen groups create incremental innovations and how the public professionals can support this activity. We end up our paper with summary and the concluding discussion in section 6.

2. Stage-gate models and the problem of tackling the unknown

STI based models focusing on in-house R&D have dominated the discussion about the innovation process. In big industrial companies, these processes have usually been centralized into an R&D department whereas small manufacturing firms and service providers have established projects for a specific development purpose (Miles and Boden, 2000). Both in manufacturing and service sectors, the ideal has been *a sequence of stages*: idea generation, screening, commercial evaluation, technical development, testing and commercialization. Between the stages, there are 'gates' for the evaluation of next steps. The concept and practical realization of these so-called stage-gate models have been crystallized by the representatives of the 'schools' of NPD (New Product Development) and NSD (New Service Development) respectively (Cooper and de Brentani, 1991).

A benefit of the stage-gate models has been the increase of visibility of innovation efforts. The visibility has facilitated the construction of innovation indicators based on the resources allocated for R&D (input indicators). These indicators are in use both at the organizational and policy level. They have enabled the development of systematic tools for innovation support and the measurement of the amount of this support for comparative purposes.

On the other hand, stages models are time-taking – a problem that was identified soon after their introduction as the norm and success factor in innovation. This problem was answered by a modification that is today generally applied: a parallel conduct of some stages. The use of cross-functional teams as developers is considered particularly useful in this context. The model presented by Alam and Perry (2002) is an example of this modification.

There is, however, a deeper problem that is intermingled with the problem of slowness: *does the stages view capture the essence of innovation activity*, and consequently, do the models based on this view foster innovation? Practical experience shows that the end of one innovation process is often the beginning of the next, and the stage from which the process begins varies. Several researchers have suggested that models of a spiral or circular type correspond better to the complex and recursive nature of innovation than a linear logic (e.g. Buijs, 2003). A solution that has gained ground is separating the front-end of innovation from the later stages, because experimental activity which includes abundant side steps and iterations characterizes the beginning of innovation processes in particular. Through this solution researches and managers have pursued a synthesis between creative problem-solving and rational planning: the unpredictable front-end is like an 'introduction' to the actual product development where goal-directed activity plays a central role. (Koen et al., 2001)

Despite these partial improvements, the core issue remains unsolved: how to tackle the unknown that is the most essential characteristic of innovation, i.e. *how to manage a process whose end result should be a surprising novelty*. Engvall et al. (2001) point out that while the stages models have systematized the form, they say very little about the content of the innovation process. However, it is just the content which is the main problem – the idea included is still immature and difficult to express in words. Constructing a plan for something which is not well-known and involves abundantly tacit knowledge is not a reasonable approach. Much more effective is a strategy which enables *the creation of shared experience of the object to be developed*. Innovation is not primarily an exercise aiming to solve defined problems but one of the greatest concerns is to identify which the problems are.

The creation of shared experience means that *planning and implementation are merged* to some extent. Several researchers have questioned the basic idea of stages models that planning always occurs first and is followed at a later time by implementation. Eisenhardt and Tabrizi (1995) suggest *experiential innovation models* which assume a process relying on real-time experience. They consider the acceleration of innovation a particular benefit of this approach: rapidly building intuition and flexibility are essential on the uncertain path through shifting markets and technologies.

Moorman and Miner (1998) argue that 'organizational improvisation' – the convergence of planning and implementation – is general in practice but often hidden behind a formal description of innovation processes. They identify a few circumstances in which this approach is particularly important. Firstly, unexpected stimuli, among other turbulence factors, may create the need for organizational action without providing time for planning. Secondly, this approach might be prompted when planning cannot provide all the details needed in implementation. Thirdly, a situation where much real-time information from the markets is available evokes immediate responses and thus favors the convergence of planning and implementation.

3. Sources for alternative innovation models

Focus on use value, and more broadly stakeholder value, is the core of service-dominant logic (SDL). Value-based approaches are, however, coming to the fore more generally and also within the frameworks that apply a provider-centric perspective. Many of them are influential in today's business (e.g. in the supply-chain management), and implications to the area of innovation are included in them. In parallel with these approaches, there is a growing body of research into the role of users in innovation. We start our review with these perspectives – value innovation and user-baser

innovation, and thereafter analyze how SDL takes them further – in its basic premises and in its emerging analysis of innovation.

3.1 Value innovations and user-based innovation

Value innovations represent the way in which companies typically have taken steps towards user-centric strategies (instead of 'user', the core concept is usually 'customer' or 'client'). According to the proponents of these strategies, the main question that companies should set when developing their business is: what new value can be offered to clients and how this can be done. Outperforming the competition and profitable growth are seen as the result of success in *value offerings*. If a company only concentrates on how to match or beat competitors, it easily restricts itself to the conventional context, which also the competitors know and in which all seek to obtain a competitive advantage by means of minor improvements. (Hoover et al., 2001; Kim and Mauborgne, 1999)

The strategy based on value offerings considerably extends the creative scope of individual companies and provides them with a wide range of options even irrespective of the general situation in their industry. Thus, the argument of the importance of value offerings is tightly linked to the pursuit of innovations. The idea that a company need not compete for a share of a given demand, but it can redefine clients' problems and discover hidden demand, is crystallized in the concept of *value innovation*, which has been considered particularly important for business strategies in the knowledge economy. (ibid.)

When innovations are examined as values, it is not enough to pay attention to individual goods and services, but total customer solutions are under the spotlight. In these, the arrangement or re-arrangement of existing items may be the core of innovation. Provision of total solutions often requires crossing the conventional borders: seeking operational models in other industries and combining equipment and services from different branches. Thus, a business model where the realities of clients are taken as a starting point and answered through value innovations is tightly linked with the development of networking practices. The many components that are included in value innovations, as well as long-lasting client relationships, require that value innovators have a network of partners that provides complementary assets, capabilities, products and services. (Kim and Mauborgne, 1999; Normann and Ramirez, 1998)

The approach of value innovation is user-oriented in the sense that its starting point is the benefit provided to the user. However, it is provider-centric in the sense that it does not analyze the role of the user as an active agent. Like the more traditional theories, it considers users to be important as the source of needs-based information. In practice, this emphasis has resulted in the construction of extensive systems for the gathering and storing of user information. An important advancement is the aim to transfer the focus to the elaboration of user information into *user understanding*, which requires learning processes within the provider organization. Only when the information is structured, interpreted and shared, it is applicable and can be linked the organizational strategy (Nordlund, 2009).

The actual *involvement of users* in innovation is an emerging trend. Acceleration of the innovation process has been one motive behind it: direct interaction enables the application of user information more rapidly than market surveys. Most often user involvement has, however, been linked to the stages approach both in research and in the managerial practice. This means that the provider-centric view continues to dominate. The central question has been who, when and how should be involved in different stages of the innovation process led by the provider organization. There are approaches that highlight interaction with users in the front end; other approaches emphasize the criticalness and complexity of the transition from the innovation process to implementation (Hasu, 2001; Sundbo and Toivonen, 2011).

Parallel with these mainstream views, von Hippel (e.g. 1978 and 1986) has paved the way for an alternative perspective: during three decades he has focused on studies that reveal the central position of *users as innovators*. Based on these studies, he has been able to show that users provide much more

than merely an idea for a new product. They may supply an innovating firm with product-related specifications or even a complete product design.

Newer views on user-innovators highlight *the continuance of the innovation process after the launch*. Tuomi (2002) describes this phenomenon in the context of new technology. According to him, new technologies are not completed and unchangeable artefacts, but are very often modified in use, and therefore include an element of re-invention. Technological novelties are also actively interpreted and appropriated by the users; one technological artefact can have different meanings for different user groups. Sundbo (2008) has recognized the same phenomenon – after-innovation – in the context of knowledge e-services. He states that an innovation is not completed when it is launched on the market, because customers cannot say beforehand what they want and they even have difficulties in assessing prototypes. They react by suggesting ideas for improvements when they use the service in practice.

Recent studies have also raised the question about the importance of micro-level collaboration between the users and providers in innovation. These studies focus on *the grassroots interaction of employees and users*. The encounter of employees and users often creates opportunities for the emergence of unique value constellations and may act as a locus of the *co-innovation* (Hasu et al., 2011). First, user-specific solutions provide ideas and a preliminary testing of innovations; these solutions may be developed into genuine innovations if potential for replication is identified (Gallouj, 2002). Second, collaboration with users fosters the convergence of innovation and implementation: the new opportunities perceived encourage the revision of preplanned goals (Toivonen, 2010). In both cases, rapid recognition of the applications and interpretations made by users is essential.

The value-based starting point and the emphasis on co-innovation in the approaches of value innovation and user-based innovation come close to the service-dominant logic. SDL deepens 'the philosophical basis' of these (often managerial) approaches and creates a logical linkage between the importance of value and the central role of the user. In the following, we also show that SDL has much in common with the broad view of innovation (including DUI).

3.2 Service-dominant logic (SDL)

Service-dominant logic (SDL) developed by Vargo and Lusch (2004, 2008) focuses on the process of collaborative and reciprocal value creation. It starts from the critique of the goods-dominant logic (GDL) in which the exchange of units of output (tangible or intangible products) is seen as the unifying factor in the understanding of economic activities. According to SDL, these outputs represent only temporal cross-sections in more complex and timeless value-creation networks that make up the economy and society.

SDL defines 'service' as *the process of using one's competences (knowledge and skills) for the benefit of another party*. 'Services' (plural) are particular types of products (like goods) – not primary to value creation, but conveyors of competences. In GDL, value is seen as a property of products, which is created by the provider and distributed to users. SDL argues that the provider cannot create value but value is collaboratively co-created with the beneficiary. The multiple relationships in the user's economic and social context contribute the value creation: the user integrates contextual resources with the specific input received from the provider. Before the value can be realized, *the input from a single provider has to be integrated with other resources*, some of which are obtained through the market, others based on public sources, and still others privately provided.

As a service marketing -based approach, SDL has not had a direct linkage to innovation theories. However, it includes many insights that are relevant from the viewpoint of innovation. When highlighting the importance of the resources available to actors, Vargo and Lusch (2004) point out that *resources are not, but they become*. The usefulness of any particular potential resource from one source is moderated by the availability of other potential resources from the other sources, the removal of resistances to resource utilization, and the beneficiary's ability to integrate them (see also

Lusch et al., 2010). This view has much in common with today's emphases on the importance of managerial competences in innovation, which typically includes re-combination of existing resources.

SDL is compatible with the broad view on innovation, in particular. Both approaches focus on social and systemic phenomena and both are interested in relationships and interaction. SDL points away from a view based on the dyad of the provider and the beneficiary towards a network orientation. The actor-to-actor perspective adopted by it means that the *focus is on continuous interaction, not on one entity acting on the other* (Vargo and Lusch, 2011). In the broad view of innovation, a collective undertaking is emphasized: innovation is understood as a multi-organizational phenomenon, in which a number of different actors with different skills and competences participate. The concept of systemic innovation is central in this view, highlighting the interdependencies between the networks of innovators and the institutional set-up that forms the framework for innovation. (Lundvall, 1992; Hauknes, 2000)

SDL underlines that the networks of actors are not just aggregations of relationships but complex and dynamic systems. They co-create value relationally and, at the same time, jointly provide the context through which the value gains its collective and individual assessment. A critical characteristic of these kinds of systems is that they are simultaneously functioning and reconfiguring themselves. (Vargo, 2009; Vargo and Lusch, 2011) This *self-adjusting nature* implies the existence of a learning process and links SDL to the DUI approach (part of the broad view). The close connection between innovation and learning is one of the main arguments of DUI. The proponents of this approach highlight that new knowledge is to a great extent gained from economic activities that are not explicitly aimed at its generation (Lundvall and Johnson, 1994).

As regards the role of users, SDL is even more advanced than the broad view which still is quite provider-centric. SDL changes our view on innovation more profoundly than any other theory towards the appreciation of users as central economic and social actors. Moving the focus away from the antagonism between production and consumption is a prerequisite for genuinely *user-based approaches in innovation*. As long as users are seen as a target, the 'user-based' approach is restricted to surveying their needs and interpreting them from the viewpoint of the producer. It leads to innovation processes in which the creative potential of users is neglected. In addition, the end result may be perceived as a useful novelty by the producer, but not by the user (Helkkula and Holopainen, 2011).

The application of SDL in the concrete issues of innovation is at an early stage. One of the most promising attempts is the examination of co-innovation on the basis of the concept of resource integration and the approach of practice theory. (Mele et al., 2010; Russo-Spena and Mele, 2012) Here, *practices have been interpreted as fundamental units of value creation, resource integration and innovation*. Even though these studies do not apply a linear process view, they adopt the traditional R&D thinking in the identification of the stages of innovation to which the analysis of practices is linked. These stages are divided into ideation, evaluation, design, test and launch. According to our view, also the process dimension should be reshaped, and we suggest that the effectual model is a fruitful starting point in this respect.

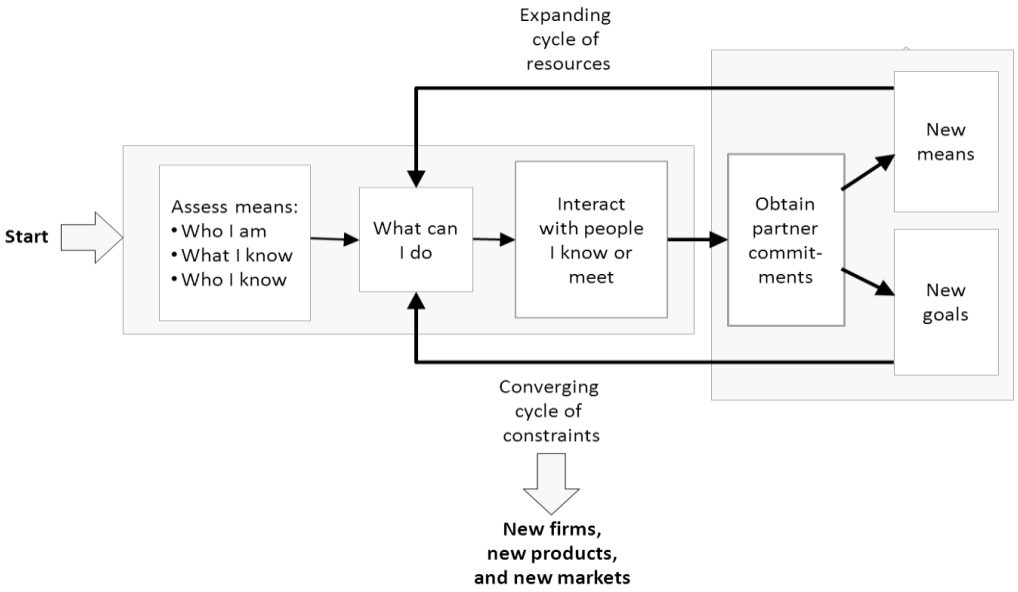
4. Effectuation: A process with expanding cycles of resources

The approach of effectuation (e.g. Sarasvathy and Simon, 2000; Sarasvathy, 2008) has its background in theories that highlight the significance of human resources, relationships and networks, and institutional aspects of the market. These theories have also been important for SDL in its foundational conceptualization, and nowadays SDL and the effectual approach utilize each other's views in their further development. For the specification of arguments of effectuation, an important source has been the empirical knowledge acquired from the behavior of successful entrepreneurs. According to the developers of the effectual view, entrepreneurship is inextricably intertwined with uncertainty, i.e. entrepreneurial expertise means expertise in uncertainty (Read et al., 2009).

Effectuation suggests the replacement of predictive logic with *a means oriented approach* to tackle uncertain market elements and *to co-construct novel markets* with committed stakeholders. It highlights that the cooperative shaping of the market, rather than a competitive scramble for (predicted to be) valuable resources, drives industry dynamics. The means oriented approach begins from available resources; goals emerge in the courses of action. An important point that the proponents of effectuation highlight is that any given resource can be made more or less valuable and more or less capable of producing long-term advantages: thus, *what people do with resources matters*. This approach clearly differs from the views that rely on linear processes, which start from the identification of an initial opportunity, set a goal, and aim to achieve it in a preselected market. (ibid)

Expanding cycles of resources characterize the activities in effectuation. There are three types of intangible resources with which the effectuator co-creates new ends: new firms, new markets, and new products and services. These are co-created through commitments with a network of partners, investors, and customer stakeholders. Also *the process of stakeholder acquisition is iterative* and reflects the basic idea of expanding resources. Successful entrepreneurs usually build stakeholder relationships directly, one step at a time, as part of the process of creating a market, firm, or product. A result is that they are able to generate rich, first-hand knowledge related to the effort and will quickly have a sense of whether the business has real promise – relationships will create the market (Sarasvathy, 2001). Figure 2 presents the basic ideas of the effectual process (the figure is a simplified version from Read et al., 2009)

Figure 1: The main idea of the effectual process (Read et al., 2009; simplified)



An essential part of iterative processes is *adaptive trial and error*. It is necessitated by the uncertain, systemic nature of market creation. In this kind of a situation, predictive information does not support decision making in the best possible way; more reasonable is relying on strategies that enable direct control, co-creation, and transformation of situations towards positive outcomes. Quickly realized small successes and small failures help avoid the risk that some action would put the entire effort in jeopardy. Preparedness to considering alternative markets and changes in value propositions is a pattern that should be actively embraced, even if it necessitates product or strategy change. (Sarasvathy and Kotha, 2001)

Even though setting the goal and proceeding towards it in systematic steps is not an efficient way to tackle the unknown, an alternative approach must include enough structure to support the utilization of resources and to foster collaborative creativity. This can be achieved via *framing the problem* in hand comprehensively: *using a framework or schema within which specific decisions and their linkages to other decisions can be contextualized*. The ability to group problems into fundamental categories and relate them to other problems results in knowledge architectures that link multiple decisions in the task domain over time, with feedback and interpretation – *not isolated decisions*. (Read et al., 2009)

The approach of effectuation has not been explicitly linked to the theories of innovation. However, this kind of linkage would be highly beneficial. We argue that the main principles of effectuation are applicable, not only in the market context, but also in the public sector where the need for innovation is as urgent as it is in private companies. Thus, we illustrate with a case example how a public innovation process could be understood as an effectual process.

5. An empirical study in the public sector

5.1. Context and methodology

In our empirical study, we have examined how the effectual approach could be applied in a situation where a public authority facilitates the emergence of incremental innovations by encouraging citizens' initiatives and by providing a small amount of resources to the development of these initiatives into novel services. The research context was a middle-sized Finnish city which launched a so-called 'mini-pilots' project in 2010. This project created a model to engage citizens, companies, third sector organizations and city employees to develop new municipal services. The basic idea was to produce a considerable number of small innovative solutions, which the actors could plan and produce themselves. Testing of this model started in two neighbourhoods. During the project, the mini-pilots expanded to cover the whole city, but the majority of them were still carried out in the original areas. The mini-pilot project lasted two years; it ended in autumn 2012. By the end, approximately 120 pilots emerged in the city. Some of them are still continuing and have also expanded. At the same time, the city officials are systematizing the experience gained to scale up the innovative practices.

In order to be accepted as a mini-pilot, the applicants had to fulfil two requirements. First, there had to be at least two actors representing different groups: for instance, a company and a group of pupils, or a group of elderly people and a group of young people. Second, the idea included had to be new, beneficial and replicable. Regarding the contents, there were not specific restrictions because the aim was to encourage the emergence of a variety of mini-pilots. In other words, the actors were allowed to define the problem themselves and then implement the solution in the way they found most suitable. In this way, the city officials could receive a great amount of feedback and ideas about the needs of service users. A project manager was hired to coordinate the project and a steering group was established to ensure its realization. The financial support for each mini-pilot was 500 euro.

An illustrative example of the mini-pilot projects is the various activities aiming to increase dialog between the generations: make the seniors to interact with children and youth. Here, the concrete activities included, among others, common nature excursions, story-telling sessions, 'cafe corner' kept by pensioners in the public premises for youth, and ICT lessons given by young people to seniors. Both generations benefited each other with their own competences, and the younger generation became in a natural way familiar with the living of former times. Most importantly, the pensioners got meaningful tasks and the young people support in their growth, which can be expected to promote welfare and prevent the social problems, diminishing the pressure towards publicly provided services.

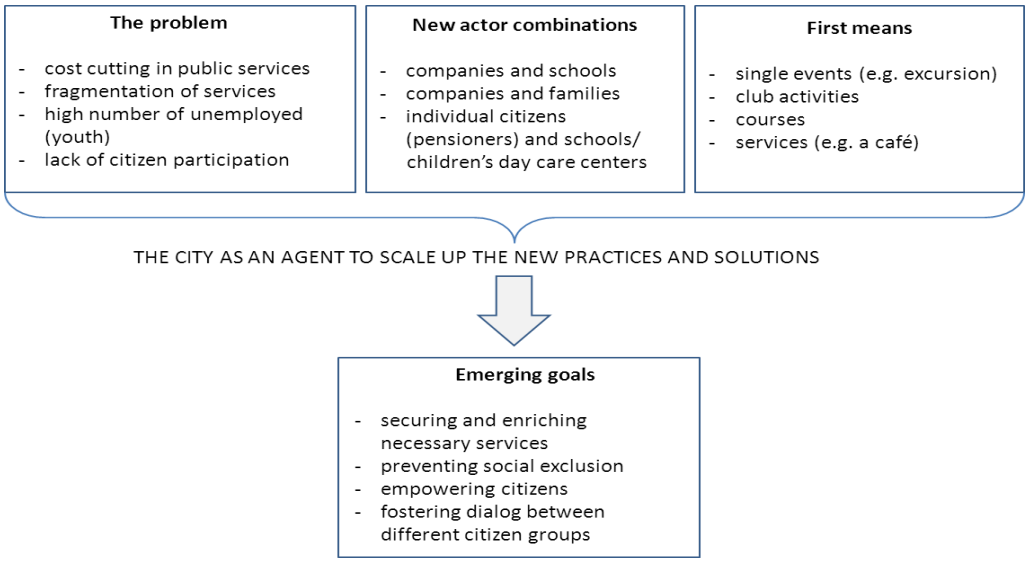
The city compiled versatile documentary data about the mini-pilots. This data was in the form of case reports that covered 103 mini-pilots and included basic facts of them. We used this data as the starting point in our study. In addition, we had the opportunity to observe some workshops that were held as a

part of mini-pilot project. In order to get deeper knowledge, we carried out 17 interviews between January and May 2012. Eight interviews were carried out with the project's steering group members and eight with mini-pilot actors. The former were mostly single person interviews and the latter were group interviews. The citizen agent was interviewed as well. The interviews were semi-structured and focused on the topics that we could not examine on the basis of documents. In particular, we wanted to map the experiences of the benefits and challenges in the mini-pilot process, and the effects of the mini-pilots – the latter including also the broader effects at city level (a topic about which the steering group members were able to tell). In the interviews, we focused on the mini-pilots that were ended or progressed far, included a potential to produce long-span and extensive benefits, and were carried out by a versatile network of actors.

5.2. The application of the effectual model in the data

The mini-pilots project shows several features of the effectual approach. Via this project, the city aimed at finding *new resources* for solving the existing problems and also succeeded in this aim. Actually, the composition of the actors was very versatile: it included companies, public organizations (e.g. schools, libraries, retirement homes), non-profit organizations (e.g. child and youth organizations, sports clubs, pensioners' associations), and individual citizens. *Framing of the initial situation* was emphasized as the starting point instead of setting a fixed goal. The idea included had to be something new, beneficial and replicable, and the actors had to find another party to collaborate with. Otherwise the actors could define and regenerate the process themselves. Flexibility and the lightness of bureaucracy were highlighted. This added momentum to the effort and was an important characteristic of the project in which the manager was a public organization. The activities initiated were *small-scale trials* that as such do not solve big issues but provide elements for tackling them if the new practices experimented (e.g. for the increase of local collaboration) and the new services developed (e.g. an educational course) are combined, scaled up and disseminated in broader contexts. Figure 1 summarizes the effectuation-based features of the mini-pilots project. The problems, actors, means and goals have been concretized with illustrative examples.

Figure 2: Effectuation-based features of the mini-pilots project



Generalizing and disseminating the results of mini-pilots is a task of the city. This work includes two main elements from the viewpoint of effectuation: *promoting the expansion of the resources and institutionalizing the new good practices*. Our interviews show that above-mentioned work is still at an initial stage, but the city officials have recognized some directions that guide it. First, identifying more carefully the innovative ingredients in the mini-pilots that are linked to the improvement of

public services is a prerequisite for the generalisation of these types of outcomes. Second, the need to increase efforts in the search, combination and use of various resources came out clearly. This need concerns the collaboration with the private and third sector stakeholders, but it also concerns the more efficient use of physical infrastructure. The project revealed that the public facilities were underutilized. Schools and other buildings were only open during the office hours, while many citizen groups urgently needed space for their activities. Third, fostering the spirit of community was the focus of several mini-pilots. The feeling of togetherness was considered important in the prevention of social exclusion, and it was also perceived to promote the interest of citizens in their environment – both the physical environment and the local culture.

6. Summary and concluding discussion

This paper has aimed to provide starting points for modeling the innovation process in a way that corresponds today's view about the nature of innovation better than the dominant stage-gate model. The paper is mainly conceptual collecting together views that have been developed separately but include elements whose combination could form a basis for such an alternative model. We suggest that the so-called broad view of innovation – which highlights that learning by doing, using and interacting (the DUI model) plays a central role in innovation – is the first cornerstone in this model. The second cornerstone is service-dominant logic (SDL) which brings the value perspective to the fore and removes the provider-centric bias. SDL-based innovation research is at an early stage, but many of the basic postulations of SDL are in line with the broad view of innovation.

Both the broad view and service-dominant logic focus on *economic and societal phenomena*, not on managerial issues that we anyhow have to tackle when discussing the innovation process. Thus, we suggest two other cornerstones that can be used in the development of the *actual process model*. Among the innovation theories, recent user-based approaches provide justification for the integration of planning and implementation and for the opening of the in-house oriented innovation practices. Finally, the effectual approach provides a process model that is based on the recursive (instead of linear) view and is in line with the emphasis on learning. Even though it is not originally an innovation theory, it can be brought to this context.

Figure 3: Linkages between four perspectives contributing to an alternative innovation model

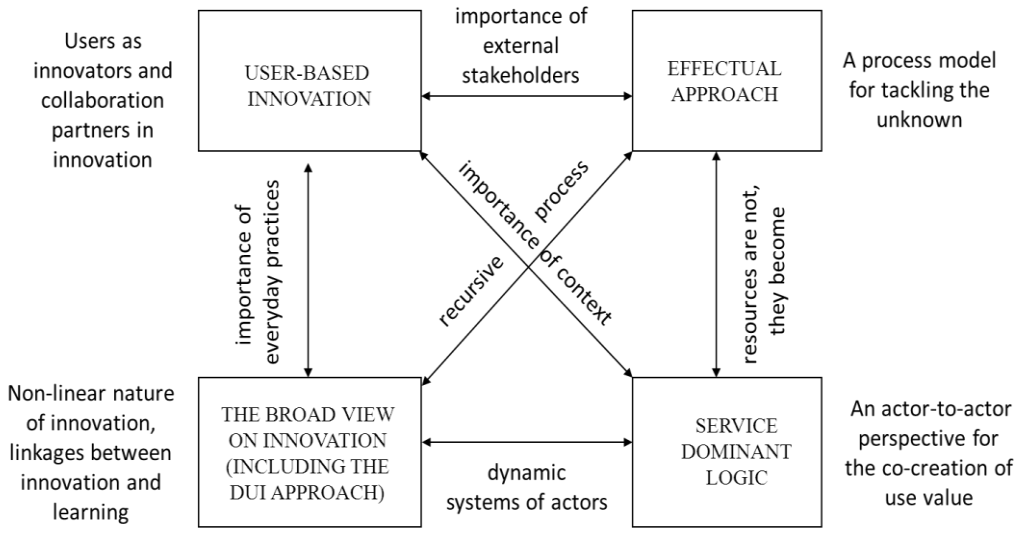


Figure 2 also depicts the 'bridging' topics between the four approaches. In this respect, the figure is simplified; in most cases there are several common elements and we have just pointed out the most apparent ones. The systemic view is a factor that is central in both the broad view of innovation and service-dominant logic. The former has concentrated on innovation systems in particular, whereas the

latter analyses value creation as the basic economic activity taking place in dynamic systems at different levels. Within innovation theories, both the broad view and user-based approaches highlight that innovations are not limited to scientific contexts and are not extraordinary events, but embedded in everyday collaborative activities. The importance of broad collaboration across the organizational borders links together user-based innovation and the effectual approach. The process model suggested by effectuation as favorable in tackling the unknown is very similar to the process that the broad view describes natural in innovation: recursive and complex. A common topic between SDL and effectuation is the focus of resources, more specifically the way in which resources are used. Finally, the importance of context is emphasized by SDL and user-based innovation, in particular.

In our paper, we have examined the applicability of the effectual approach in more detail because it is the only approach among our 'cornerstones' that explicitly provides a process model. After the theoretical analysis of this framework, we suggested that its main principles are applicable, not only in the market context, but also in the public sector. We have illustrated with a case example how a public innovation process could be understood as an effectual process. Even though the resource expansion included in the effectual model is still going on in our case, it confirmed the reasonability of the effectual approach. Room for improvisation as well as courage and tolerance towards failures were highlighted as particular important factors that favoured the emergence of novelties. Our example is also interesting from the viewpoint of SDL, because it is based on the idea of citizens as innovators and public professionals as facilitators in this process – a central attitude that service providers should apply according to SDL. Institutionalization of the new practices is a topic in which our case can provide interesting material in the future.

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