

Public Libraries as Social Innovation Catalysts

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Abstract: Public libraries urgently need to reinvent their role in society. Through social innovation, libraries may adopt new functions and roles and even act as innovation catalysts in networks of increasingly interdependent stakeholders from different sectors. We investigate how to design such inter-sectoral public library innovations that are embedded in existing organizational practice and are both sustainable and scalable. We outline a practical social innovation sensemaking method based on a combination of a social innovation collaboration network model and process model. We show how we did an initial validation of the method using the results of two exploratory workshops with professionals in the Dutch public library world. We discuss the implications of this approach for expanding the role of public libraries from providing access to collections to becoming social innovation and community catalysts.

Keywords: Social Innovation, Public Libraries, Sensemaking, Scalability, Sustainability

Introduction

Public libraries are in an existential crisis, urgently needing to reinvent their role in society. For centuries they used to focus on the physical book. However, developments such as the Internet, multimedia, and information overload instead of scarcity, have led many to believe libraries are superfluous in the present Knowledge Society. Still, while library patrons like to see libraries' digital services expand, they also feel that print books remain important (Zickuhr et al., 2013). How to make sense of these apparently conflicting trends?

One approach to reinvent the role of the public library is through social innovation. Libraries all over the world are changing their role from serving as "containers for books" to acting as agents in innovative community empowerment processes (Andersen et al., 2013). In analogy to academic research that should shift from being "research for communities" to "research by communities" (Gurstein, 2011), libraries should move from "service design for patrons" to "service design by communities". Social innovations can be defined as new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations (Murray et al., 2010). Social innovation as a process aims to have multiple stakeholders work together on joint economically and socially sustainable solutions for societally relevant problems, co-creating value for all stakeholders involved, as well as contributing to the common good. Public libraries are hubs in networks of overlapping communities of interest, practice, and collaboration, supporting and connecting them in many different ways. Through social innovation, many new opportunities for libraries can be created, by making them think in terms of new knowledge functions and roles, instead of merely giving access to "collections and buildings". As trusted institutions deeply embedded in society, libraries could even play a leading role as social innovation catalysts, acting as hubs in increasingly interdependent networks of cross-sectoral communities and institutional stakeholders.

Social innovation is a continuous process of building and meshing relationships, activities, tools, and content. It is not so much about doing individual projects, but about linking and scaling them, by increasingly connecting stakeholders, ideas, and resources through meshing existing and new communities of interest, practice, and collaboration. Instead of thinking in terms of competition and zero-sum games, social innovation aims to provide context to existing organizational efforts, in order to jointly create added value and increase the size of the pie. However, how to do this in practice? Many social innovation initiatives in community empowerment fail to scale, e.g. when having university students do service learning in disadvantaged communities (Stoecker, 2008). How to create sustainable collaborative

networks of communities across organizations and sectors? How to embed inter-organizational innovations in existing organizational practices, so that they survive beyond the project stage? How to grow and link communities of interest, practice, and collaboration with both place-based and virtual dimensions?

To help answer these questions about catalyzing social innovation by public libraries, we used a combination of two existing social innovation models, a network and a stage model. First, the Social Innovation Collaboration Model explains that social innovations do not happen just by chance, but are purposely developed in a mesh of intersecting networks. Second, a spiral process model of living labs is used to stress the import of staged, scaled development. Through such living labs, innovations grow from initial ideas to full-scale implementations, ultimately leading to systemic change.

We used both models in two successive exploratory workshops with professionals in the library world from across the southern Dutch province of Noord-Brabant. The goal of the workshops was to identify new roles and functions for libraries in potential cross-sectoral collaborations with universities. Two cases were explored: (1) exploring scenarios for how libraries and universities can co-create new forms of learning and (2) adding library services to an online "Kids' Knowledge Base" already developed by Wetenschapsknooppunt Brabant (Science Hub Brabant).

In this paper, we first explore the process of social innovation sensemaking in public libraries. We then explore how to model social innovation, working towards a practical method. Some initial results of the method based on a case of Dutch public libraries getting involved in social innovation are presented. We end the paper with a discussion and conclusions.

Social Innovation Sensemaking in Public Libraries

In this section, we first explore the need for social innovation in public libraries, and then examine how it can be seen as a process of sensemaking.

The Need for Social Innovation in Public Libraries

In the past, one of public libraries' main roles was to provide access to materials in collections, book lending being at the core. In addition, public libraries are often at the forefront of community empowerment, providing all kinds of basic services and literacy training at, for instance, community centres in disadvantaged neighbourhoods (Andersen et al., 2013). However, due to the technological developments, such as the increasing ubiquity of the Internet and social media in many parts of the world and society, the scope of library services is expanding. The access to information is often no longer the 'weakest link', but rather how to effectively use that information to create knowledge relevant to individual and communal needs (Lankes, Silverstein & Nicholson, 2007). Conversations based upon an abundance of available information help to create this knowledge by putting information in context. Therefore libraries are no longer in the information business, but as Lankes et al (2007) point out, "libraries are in the conversation business". A related issue is how to handle the information and communication overload caused by the overwhelming availability of content (Bawden and Robinson, 2009).

Despite the inevitable transformation of the role of libraries in the Knowledge Society, the Dutch public library sector has not yet been able to build a coherent revised service framework and come up with convincing results. This situation probably extends to many public libraries in other countries as well. However, since public library service scopes, funding structures, and institutional settings are highly country-specific, we focus on the Dutch situation in this paper. This lack of direction has serious consequences, including severe budgets cuts and an increasing sense of irrelevance (Huysmans & Oomes, 2013). Despite the need for change, the kinds of values, behaviours and institutional systems

required for strengthening a knowledge culture are different from the traditional culture within libraries (Sheng & Sun, 2007). Historically, library innovation processes have been content-driven and have focused on service improvement from within the library sector itself. Due to technological developments such as ongoing digitalization and networking this has to change, or as Scupola and Westh (2010, p.304) state “library staff skills and library service all have to shift from book-centric to user-centric”. An existential debate about the future of public libraries is taking place (Lankes, 2012), but still mostly among library information specialists themselves. Instead, we argue that the library service redesign conversation should take place beyond the boundaries of the world of information specialists, putting the knowledge needs of external stakeholders first, and involving them actively in library service redesign. Promising initiatives in “user-driven innovation” of library services are taking place (Andersen et al., 2013), but these are still mostly aimed at local community empowerment initiatives. The complementary step of building scaled and sustainable social innovations of high-end knowledge services embedded in institutional processes and resources is still relatively unexplored.

Social Innovation Sensemaking

We have seen that much ambivalence exists about the role of libraries and that social innovation could be a useful process to redesign, scale and sustain library service improvement projects. In this section, we explore how social innovation may be regarded as a process of sensemaking.

Social innovation is a concept with a still evolving meaning. According to Connected Difference Theory, social innovation concerns (1) new combinations or hybrids of existing elements; (2) cutting across organizational, sectoral, or disciplinary boundaries, and (3) creating compelling new relationships (Mulgan, 2007). The process of being involved in cross-sectoral social innovation could be considered a prolonged multi-stakeholder dialogue. According to Payne and Calton (2004), such a dialogue emphasizes goals of dialogic learning, relationship building and business social responsiveness within a more reflective practice of corporate citizenship. The purposes and processes of these dialogues need to be carefully designed, some of the policies or rules for stakeholder engagement being applied at the outset, and some constructed intuitively only as the process gets underway (Payne and Calton, 2004). The ultimate scope of such dialogue, however, goes way beyond embedding a single stakeholder, such as a corporation, in its relevant societal context. Much more, it is about society-wide innovation, creating an intricate web of organizations into a new governance structure that is generating innovation and producing societal learning and change. This learning should simultaneously take place at different levels: individual, organizational, sectoral, and societal (Waddell, 2005, p.10). Given that both the content and the process of social innovation leave many degrees of freedom, the multi-stakeholder learning dialogues required in social innovation can best be described as a process of sensemaking.

Sensemaking is an ongoing retrospective development of constructing plausible images from a social context (Weick, Sutcliffe & Obstfeld, 2005). It is about the interplay of action and interpretation when confronted with ongoing circumstances and uncertainty. In circumstances where the current state of the world is perceived to be different from the expected state of the world, explicit efforts of sensemaking tend to take place as a process for organizing (Weick et al., 2005). Formalization of sensemaking efforts helps to reduce ambiguity and to create common foundations for action in interorganizational collaborations (Vlaar, van den Bosch & Volberda, 2006). Especially the early stages of interorganizational collaboration – with each of the participants coming from a different professional background with its own belief system - are characterized by high levels of ambiguity and uncertainty (Sutcliff & Huber, 1998 in Vlaar et al., 2005). To reduce misunderstandings, stakeholders need to know their own frames of reference first, especially in inter-sectoral collaborations. In the case of libraries, their own frame of reference is still lacking. Therefore, intra-sectoral sensemaking is a prerequisite.

How to go about this sensemaking process for social innovation by public libraries and external stakeholders? Taking Waddell's dimensions, we are particularly interested in the sectoral level. For the purpose of social innovation, we take the individual and organizational level for granted, as we assume those involved in social innovation sensemaking processes to legitimately represent their organizations. For practical purposes of time and budget resources, the societal level is explored only minimally. Societal goals (the WHY of the social innovation) is taken as a given in the sensemaking process. For instance, in the Dutch library case to follow, societal library objectives, such as increasing media literacy levels, have been defined by provincial government in extensive consultations with the sector and other stakeholders (Provincie Noord-Brabant, 2013). Given that (but not only) public libraries are still in such need of internal sensemaking, we expand the sectoral level (the HOW of the societal innovation) into an intra-sectoral and an inter-sectoral level. At the intra-sectoral level, the sector first makes sense of what it can contribute to the inter-sectoral equation in terms of resources, commitments, management support, etc. At the inter-sectoral level, joint multi-stakeholder sense can then be made much more efficiently about how to co-create value in a scalable and sustainable way to address overarching societal objectives.

In the next section, we introduce a practical sensemaking methodology that we have used to explore inter-sectoral social innovation between public libraries and universities.

Modeling Social Innovation

We outline our practical method for social innovation sensemaking, after having positioned it as a kind of socio-technical walkthrough method. We then outline the models informing the sensemaking process: the Social Innovation Collaboration and Process Models.

Socio-Technical Walkthroughs

Social innovation as a process is an example of socio-technical systems meta-design for the creation of new media and environments. Socio-technical systems comprise the dependencies and interactions between many social, organizational, and technical aspects, including human actors, work and communication processes, technologies, and competencies (Herrmann, 2009). Their meta-design characterizes objectives, techniques, and processes that allow problem owners/users to act as co-designers. It can help to empower them to facilitate the creation of a shared understanding of socio-technical solutions to complex problems by fostering social creativity where all stakeholders contribute their different points of view and knowledge (Fischer et al., 2004). For this collaborative design to work, tacit knowledge present in the various stakeholders needs to be externalized, so that others can interact with it, react to it, negotiate around, and build upon it. This externalization in the context of long-term, indirect collaboration (as is the case with social innovation) needs to take place in a process of incremental formalization, where structure is added over time to "boundary objects" that communicate and coordinate the various perspectives (Fisher and Shipman, 2011).

In the meta-design of our own practical social innovation sensemaking methodology we were inspired by Herrmann's semi-structured socio-technical "walkthrough" method. This method represents socio-technical concepts with diagrams, which are gradually developed, evaluated, and improved with the socio-technical walkthrough as a documentation and facilitation method. It combines the SeeMe socio-technical, semi-structured modeling method for producing the diagrams with a facilitation method for workshops. In these workshops, the diagrams are inspected and improved step-by-step by asking certain questions around the core SeeMe elements of roles, activities, and entities used or modified by the activities. At each workshop, the model is incrementally modified (Herrmann, 2009).

A Practical Social Innovation Sensemaking (SIS) Method

Like Herrmann, we use diagrams as our multi-stakeholder sensemaking boundary objects. Herrmann’s method is a general socio-technical design method, optimized for developing software systems. Such a general method is not sufficient for our purposes, however. Some key characteristics of our Social Innovation Sensemaking (SIS) method are:

- The method requires additional “conceptual lenses” to efficiently focus on the particular requirements of social innovation initiatives: a Social Innovation Collaboration (SIC) Model to capture the interlocking networks and communities and a Social Innovation Process (SIP) Model to represent the distinct evolutionary stages of social innovation processes.
- The method combines both conceptual lenses by making a SIC network snapshot at one or more SIP stages (depending on the maturity of the social innovation process the stakeholders are involved in).
- We use separate workshops for intra- and inter-sectoral sensemaking. In the first part of each workshop session, stakeholders roughly outline main SIC concepts in brainstorming mode, where divergence of ideas, rather than convergence is promoted in different small sub-groups of participants. The second (plenary) part of the workshop is then used to arrive at some form of consensus on potential scenarios or project proposals.
- To start the intra-sector sensemaking stage in Workshop 1, we include a preliminary “toolbox filling” exercise, in which stakeholders representing a sector make an inventory of the kinds of tools, services, or competencies they can bring to the inter-sectoral sensemaking table. *Potential* inter-sectoral project scenarios are then generated by subgroups of intra-sectoral sensemakers to build some common ground, and then discussed in the plenary part. Those scenarios most relevant for inter-sectoral sensemaking are selected.
- In Workshop 2, these potential (sectoral) scenarios are taken as the starting point for inter-sectoral sensemaking, leading via *feasible* inter-sectoral scenarios produced by subgroups to an *actual* plenary project proposal.

Note that quality aspects such as completeness of the socio-technical design cannot nor should be obtained in the workshop sessions themselves. The output of each workshop should be checked and refined according to the specific socio-technical quality criteria of the various stakeholders by separate roles (such as process owners or project managers), and can then be the input for the next workshop sensemaking session/social innovation stage.

Summarizing, our initial SIS methodology comprises the following steps covering stages 1-2 (Prompts and Proposals) of the Social Innovation Process (SIP) Model (see next section for an introduction to the SIP Model):

Stage	Actions	Outcomes	Remarks
Preparation	Selection & configuration of diagrams	Social Innovation Collaboration & Process models	Including (optionally) specific collaboration patterns representing good practices
	Selection of stakeholders	Balanced groups	Legitimacy/representation issues
Workshop 1	Intra-sectoral sensemaking	What CAN we do?	Biased towards needs of one sector
	Group Discussions	- Filled Toolbox - Potential inter-sectoral project scenarios	

	Plenary Discussion	Selected potential inter-sectoral project scenarios	From intra-sectoral perspective
Workshop 2	Inter-sectoral sensemaking	What SHALL we do?	Balancing needs of multiple sectors (win-win)
	Group Discussions	Feasible inter-sectoral project scenarios	Using potential inter-sectoral scenarios (from various sector-perspectives) as starting points
	Plenary Discussion	Actual inter-sectoral project proposal ideas	Results in inter-sectoral consensus for proposal writing and management support

Table 1: Outline of Step 1-2 of the Social Innovation Sensemaking (SIS) Method

Next, we introduce our conceptual lenses: the Social Innovation Collaboration & Process Models.

The Social Innovation Collaboration Model

In earlier work (De Moor, 2012), we focused on modeling these collaborative relationships and conversation structures of social innovation. To this purpose, we developed a Social Innovation Collaboration Model (Fig.1). This model captures and links the various spheres of conversations in which social innovation takes place (with C1-C5 indicating overlapping spheres).

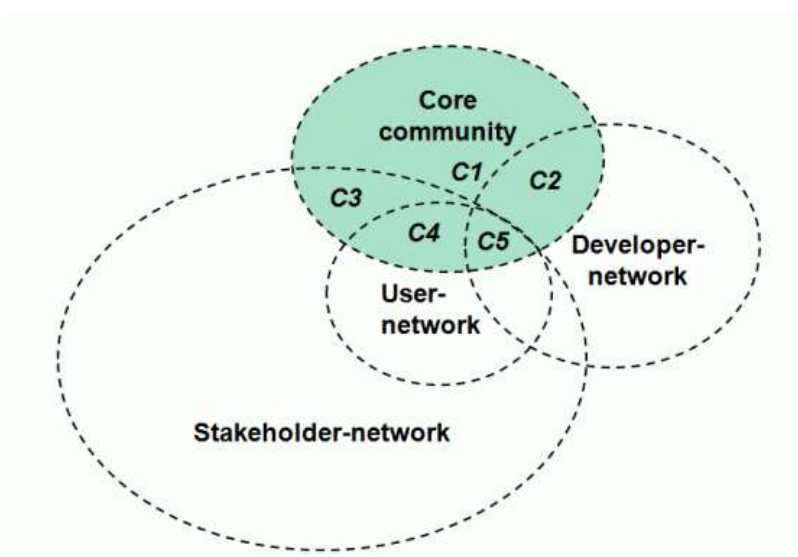


Figure 1 The Social Innovation Collaboration (SIC) Model (De Moor, 2012)

The SIC model consists of 4 main connected conversation spheres:

- The *core community*: the initiators of the innovation, often the co-owners of the intellectual property rights, plus the main investors. In the core community, the course for the innovation process is set.
- The *developer network*: the organizations and individuals doing the R&D necessary to go from initial idea to fully implemented product or service.

- The *user network*: the stakeholders using the product or service. In the early stages of the innovation process, often a small group of (future) users is involved as test users (C5).
- The *stakeholder network*: a wide range of stakeholders who directly or indirectly do or could benefit from the innovation. The user network consists of a subset of these stakeholders.

The SIC-model has been successfully used for a cross-case analysis of several leading social innovation cases in the Dutch region of Midden-Brabant, resulting in lessons learnt about the particular roles being played, the workflows in which conversations took place, and the physical and online tools used to mediate the conversations. Using these constructs, an initial ontology of socio-technical “collaboration patterns” was distilled by comparing best practices across the cases (De Moor, 2012).

The Social Innovation Process Model

One analytical element was still lacking in the SIC model: the dimension of growth and evolution. To this purpose, the analysis was extended with an existing process model from the social innovation literature (Fig.2), which we call the Social Innovation Process model. In this model, social innovations expand from initial prompts and ideas, via prototypes that are sustained beyond the project stage, to scaling and having real societal impact (Murray et al., 2010).

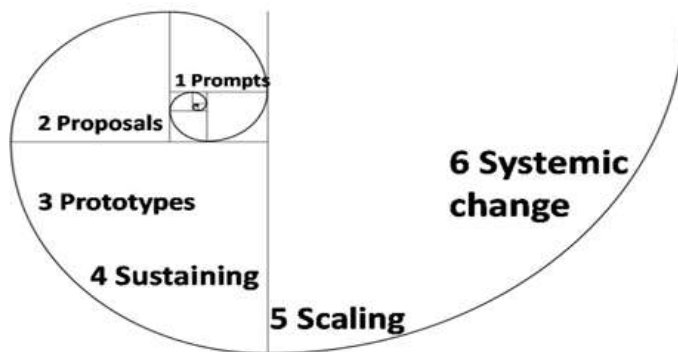


Figure 2 The Social Innovation Process Model (Murray et al., 2010)

Granted, it is an idealized model of how social innovations evolve in reality (in which, for example, various sub-innovations take place at different rates, or sometimes even revert to previous stages). Still, by using the SIC model to “take snapshots” of the collaborations at subsequent SIP process stages in the social innovation lifecycle, an overall sense of the state-of-affairs can be obtained. We next explain how we applied this approach to public libraries.

Bootstrapping the Method: Building Bridges between Public Libraries and Universities in the Netherlands

Local public libraries in the southern Dutch province of Noord-Brabant work together in a coalition, the Brabantse Netwerk-Bibliotheek (BNB, Brabant Network Library), in which they share services and work together on innovation projects. Its subsidiary Cubiss acts as a network agency both providing operational library services and facilitating collaborative innovation projects of public libraries within the province (and beyond). Recent innovation projects included developing educational products for enhancing reading and media literacy, lending/cataloging services, and integrated school library services. Generally, these

innovations concern book-centred products and services, building on existing knowledge resources and new technologies (such as smart phones and social media). A shift was deemed necessary towards innovation projects that work towards public libraries as community hubs for learning and knowledge dissemination (Cubiss, 2012). Given the strategic social innovation needs in the library sector, an analysis using the SIS-method was deemed useful and co-initiated with one of the main library partners, the Bibliotheek Midden-Brabant.

According to the guidelines for public libraries (VNG, 2005), Dutch public libraries have five core functions: supporting (1) knowledge and information (2) reading & literature (3) arts & culture (4) development & education (5) meetings & debate. These functions are defined in terms of societal service domains or tasks, rather than tools or instruments with which to accomplish these tasks. The Netherlands have a very decentralized library system, in which local libraries together with the municipalities in which they are based have autonomy to define which of these core functions they focus on and how they design the related services. On the one hand, this diversity in library service design and implementation leaves much room for matching specific local needs. On the other hand, the very diverse library service palette may complicate innovation processes involving extra-sectoral stakeholders such as universities. Therefore, before reaching out to other stakeholders, an initial intra-sectoral sensemaking exercise with professionals from the library world makes sense.

A logical initial partner for inter-sectoral social innovations are universities. While universities are places for state-of-the-art knowledge creation and formal education, public libraries are places for society-wide knowledge dissemination and informal education. Both types of stakeholders serve the public interest, but their ways of working are currently mostly disconnected.

The main purpose of this paper is to frame the need and outline a practical method for inter-sectoral social innovation sensemaking with public libraries. Space is lacking here to discuss in detail how the SIS-method was implemented in this inter-sectoral sensemaking exercise between public libraries and universities. The reader is referred to Appendices 1 and 2 for a summary. In all, the method was applied successfully in stages 1-3 (Prompts, Proposals, and Prototypes) of the Social Innovation Process model, going from intra-sectoral sensemaking in Workshop 1 to inter-sectoral sensemaking in Workshop 2 (Fig. 3), and the subsequent implementation of the ideas in a first prototype.



Figure 3: Group Discussions during Workshop 2: Inter-sectoral sensemaking

The prototype, a “Kids’ Knowledge Battle”, dubbed “B@ttlewetters” (freely translated as “B@ttle Know-It-Alls”), was successfully launched during the European Social Innovation

Week (<http://esiw.nl>) in Tilburg in September 2013. The knowledge battle combines the existing online Tilburg University/Science Hub Brabant “Kids’ Knowledge Base” (KKB) (<http://www.kinderkennisbank.nl>) - which aims to introduce curious children to the world of science - with library materials, services, and locations. Groups of children from various schools have to go online to look up answers to questions derived by librarians from the KKB, using a “media bar” with networked devices. They also debate a proposition in front of the audience (See Appendix 2 for a more detailed description).

The launch of B@ttlewetters was a great success¹. Besides the overwhelming excitement of the more than 50 participating children, also their teachers and involved librarians were enthusiastic. They especially liked the way the content of the KKB came to life and how the format combined media literacy and learning objectives for the Dutch language. The B@ttlewetters format will be further developed and used by libraries at locations like library buildings, schools, and community centres across the province (Fig.4). A provincial grand final B@ttlewetters edition is scheduled for the National Media Literacy Week in 2014.

Note that Table 1 only outlined the sensemaking steps taken in the first two stages of the SIS method, as working out the details of the subsequent prototype implementation was considered to be outside the scope of the joint sensemaking activities. Instead, the actual development of the prototype took place in regular project management processes of the participating library and university organizations.



Figure 4 Successful launch of the B@ttlewetters Kids’ Knowledge Battle (source: Yvonne Kimman)

The SIS-method was instrumental in developing the ideas, social capital, and management support for the B@ttlewetters project proposal to be approved. Some generic social innovation sensemaking lessons learnt in this initial application of the method are worth sharing here:

- Public libraries need to bring in other stakeholders right from the beginning, especially when developing (inter-sectoral) services addressing the complex challenges facing society, such as education, aging population, city development, unemployment, and so on.

¹ See <http://www.cubiss.nl/nieuws/public-libraries-social-innovation-catalysts> for a compilation of the launch event during the European Social Innovation Week.

This increased stakeholder involvement should help libraries better find the much needed focus in and relevance of their operations and services.

- Public libraries usually tend to consider themselves as part of the Core Community in the Social Innovation Collaboration model, initiating and claiming ownership of most innovation processes right from the start (Stages 1-3). Still, public libraries are often in a better position to sustain and scale (Stages 4-6) initial innovations of other stakeholders.
- Public libraries can shift their roles in the social innovation networks over time, depending on the theme and their expertise. For example, a public library could be a member of the Core Community in the development of a particular innovative knowledge service close to their expertise in the initial stages, while becoming part of the Development or Stakeholder Network later on if the innovation turns out not to be their core business. Vice versa, they could be a stakeholder only in the beginning, while joining the Core Community later on. This shifting of roles allows for much more careful application of scarce resources, while increasing the overall public library innovation potential.
- Through their large social capital, expertise, and networks, public libraries are very well suited as social innovation catalysts, a role which should be acknowledged in social innovation programmes in which they are currently not yet sufficiently visible.

Discussion

In the design and application of the SIS-method to the public library case, lessons and implications emerge at different levels: new roles and functions for libraries, the methodological process of working towards more sustainable and scalable social innovations, and the interrelationships between public libraries and communities in social innovation processes.

Redefining the Roles and Functions of Public Libraries

Important services of by public libraries have traditionally been providing access to collections, computing and helping empower local communities in disadvantaged areas (Gordon and Gordon, 2004; Andersen et al., 2013). However, beyond providing basic access, the question is increasingly how to promote effective use of ever more sophisticated knowledge infrastructures. The workshop results indicate a move away from the traditional focus on “collections and buildings” to making sense of the key roles and functions of public libraries and the wider societal contexts in which they can be applied. One great - and often invisible - strength of public libraries is that they possess large social capital, being connected to and trusted by many stakeholders in society. Furthermore, public libraries are good at telling stories and translating abstract concepts into understandable forms, helping their wide range of members make sense of a complex and unruly reality. Such redefined functions allow public libraries to play new roles in new stakeholder contexts, such as “public sensemakers” and “social innovation catalysts”, contributing to the development of novel, inter-sectoral services. Some initial examples of these services in a university context were explored in the workshops, such as low-barrier lifelong education and children’s scientific knowledge battles. Still, many more innovative combinations of functions, roles, and services could be developed, such as the public library acting as a catalyst of local knowledge bases, in which knowledge is collected, refined, shared and linked to other national and international knowledge bases (Van der Heijden and de Moor, 2012).

Towards a Social Innovation Sensemaking Methodology

In earlier work, we examined cross-case social innovation lessons learnt through our Social Innovation Collaboration model (De Moor, 2012). We extended this analysis in the current paper by adding the Social Innovation Process model (Murray et al., 2010) to model

the life cycle and capture the sustainability and scalability aspects of social innovations. In our workshops, the usefulness of this extension was demonstrated, for example by the findings that public libraries could often focus better on sustaining and scaling innovations proposed by other stakeholders and that in different process stages the same stakeholders may take up different innovation roles (e.g. a public library may be only a stakeholder in the initial prompting and proposal stages, but move into the core community when innovations start to scale).

Of course, our tentative Social Innovation Sensemaking (SIS) method needs to be expanded in many directions. In line with Herrmann (2009), who developed the SeeMe diagramming/facilitation method incrementally over the years, a participatory socio-technical modelling method like the SIS method is too complex to build in one go. Herrmann indicated two major stumbling blocks in SeeMe: the selection of participants, and coordination with the software developers. In our case, these aspects will need even more attention, as we are not focusing on “simple” software systems controlled by one organization, but on complex socio-technical systems embedded in various organizations from even different sectors. To make this sensemaking complexity manageable, we were inspired by (Wadell, 2005), who distinguishes between four levels of societal learning and change (individual, organizational, sectoral, and societal), adding an extra level: intra/inter-sectoral. Whereas Waddell distinguishes between three sectors (state, market, social), we have a different interpretation of sectors, considering them to be more the fluid kind of domains of influence where societal stakeholders interact naturally, such as “the library world”. Admittedly, many of these domains overlap and interact. Through the use of collaboration patterns (De Moor, 2012), we hope to get a better sense of the good/best practice interactions and socio-technical lessons learnt in these domains. Such insights would also help to more efficiently build bridges between sectors/domains.

“Naïve co-creation approaches”, especially popular with the rise of social media, assume that innovations emerge spontaneously. This is not true for complex social innovations in which the interests of many stakeholders – organizations, communities, and individuals - need to be aligned. Our workshop experiences suggest that starting with an intra-sectoral sensemaking exercise helps build the common ground, self-confidence and managerial support necessary for the even more complex inter-sectoral sensemaking. We had only minimal inter-sectoral sensemaking (only one extra-sectoral representative in the second workshop). In future extensions of the methodology we intend to pay more attention to the issue of representation: are the proposed socio-technical designs acceptable in terms of (conflicts of) interests, available resources, project programme priorities, etc., not only to management of the core organizations involved, but also to the larger networks and communities of stakeholders representing and spanning the sectors and domains affected? The design of these processes is still in its infancy. In the initial stages, only few (library and university) out of many possible stakeholders were involved. However, we are currently scaling up community involvement, for example by having demonstrated the B@ttlewaters prototype to many different stakeholders in a “Partner Meeting”. At this meeting, stakeholders from across the board were invited to think along about how the prototype might link to their activities and interests. A more permanent stakeholder representation could be in the form of a consultative “community advisory board”. This kind of stakeholder panels have only been used in a fragmented way in the (Dutch) library world so far. By incorporating such a panel as core component of a future version of the SIS method, we hope to change that.

Of course, the SIS method could be used by other societal stakeholders driving social innovation processes as well. It would be interesting to investigate how other stakeholders, like governments, or perhaps citizens’ cooperatives, could use the SIS method to catalyze their own social innovation processes. In the end, all these social innovation processes should start to align and intertwine, creating a solid societal innovation fabric.

Public Libraries & Communities

Communities have been mentioned throughout this paper, but what exactly is their role in social innovation sensemaking by public libraries? Historically, public libraries have acted as “empowerment centres” for local communities. Increasingly, however, they also take the role of “community stewards”, facilitating, for example communities of interest, practice, and collaboration (such as of professional amateurs) in their interactions. They do so by offering them spaces to meet and connecting their conversations through customized portals, supporting them in their activities like distributed knowledge curation (Van der Heijden and De Moor, 2012). In this community steward capacity, public libraries could truly take up their role as “public sensemakers”, helping many other stakeholders in society they have connections to, and who trust them to make sense of new opportunities for social innovation. Public libraries can do so through by helping the existing communities that they are rooted in grow and connect.

Communities are often seen as self-organizing and sustaining, not needing specific resources and management for their growth and sustainability. However, for many communities to remain viable, to scale and to become integrated in a larger societal network context (such as contributing to social innovation in a local city environment), the institutional setting and economic sustainability need to be paid careful attention to. This may include the need for balancing funds, building partnerships with public and private bodies, and getting revenues from selected “market-like activities”, without endangering the essential nature of the community (Ripamonti et al., 2005). Nurturing grassroots-initiated, networked hybrid online/offline communities of locality (Gaved and Mulholland, 2005), helping them grow and realize their full potential, getting them networked to other communities and connecting them to relevant information and knowledge resources, seems a natural facilitating role of public libraries. In this role, they could help embed these communities in the proper “institutional architectures” (Ripamonti et al., 2005), allowing them to receive the necessary resources, without the communities being stifled by bureaucracy. Vice versa, by providing focused access to fluid, widely dispersed communities of stakeholders, libraries can also help meet the requirements of institutional actors like funding bodies, who often have only limited access to community representatives. Note that libraries are not legitimate representatives of the local community, but in their role of catalysts can act as hubs providing access to many of those representatives, while supporting their meetings and interactions. This helping to sustain and scale communities could become a key intermediary role of the public library of the future.

Communities of interest, practice, and collaboration around knowledge themes and professional practices are not the only kind of communities to be stewarded by public libraries. They should also move in the direction of facilitating whole new categories of communities: communities of (social) innovation where various stakeholders work together on addressing complex societal problems (Van der Heijden and De Moor, 2012). Such “meta-communities” are rooted in other communities, networks, and organizations, and aim to improve the ways things are done in society. Fisher and Shipman (2011) consider communities of interest as communities-of-communities, or communities of representatives of communities. To us, however, communities of innovation are the best example of such “meshed communities”. To make these complex communities of innovation work, well-designed intra- and inter-sectoral social innovation sensemaking processes are needed. In our current workshops, we applied such processes to figure out the new roles and functions of libraries. In more developed versions of the method, public libraries themselves could be at the helm of these processes, helping other stakeholders themselves figure out ways to innovate society. Given the large social capital and networks of public libraries, this role as “public sensemakers” and “social innovation catalysts” seems a natural one. Still, to play that incubator-and-connector-of-communities role properly, complex interrelated aspects of the legitimacy of stakeholders, representation of voices, process facilitation, conflict resolution, community building, and so on, need to be addressed. Community (informatics)-based research frameworks and methodologies could contribute significantly to finding this role. It

would be interesting to investigate whether the reason that so many social innovation projects fail to scale is exactly because such “soft aspects” are not taken sufficiently into account in many of the current top-down social innovation approaches.

Conclusion

Public libraries urgently need to expand their scope through a process of social innovation sensemaking, involving stakeholders from within but especially from outside the sector. We outlined and discussed the initial results of a practical social innovation sensemaking (SIS) method. It is currently being deployed and evolved in a strategic collaboration between a Dutch public library association and universities. Initial results are promising, but there is still a long way to go to a full-fledged methodology. Still, we believe that these initial findings are a small but important step on the way to help break the deadlock of organizations that each by themselves cannot “change the system”. With public libraries as social innovation catalysts, this approach to social innovation sensemaking should help empower communities of all kinds - and in turn use the power of these communities to innovate both public libraries and society in more meaningful and acceptable ways.

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Appendix 1: Workshop 1 - Intra-Sectoral Social Innovation Sensemaking

Method

17 library professionals from 7 different public libraries participated in the initial workshop at Bibliotheek Midden-Brabant in Tilburg in November 2013. In order to build a shared frame of reference, we started with a brief introduction (by the first author) of social innovation, what it is and how it works. A short group discussion followed to clarify the concepts presented. We then introduced the case of libraries potentially developing inter-sectoral services with an applied university in the area of education. Based on the SIC-model, we challenged the participants to explore the possibilities for both types of stakeholders co-developing an innovative educational service.

After the plenary kick-off, the participants were divided into 3 groups of 5-6 persons, each group getting the following two assignments:

- **Filing the toolbox:** What services could public libraries contribute to social innovations?
- **Outlining a socio-technical design for new forms of learning:** how could public libraries, applied research universities and other potential partners collaboratively develop an innovative educational service? To sketch the innovation, the groups could use the SIC-model. Posters with the model were available for filling out.

In the plenary session following the group sessions, each group gave a poster presentation of their findings to the other groups, and a group discussion followed, in which the results were interpreted. The individual toolboxes were merged in a collective overview. The plenary parts of the meeting were filmed and a transcript was made. Together with the posters, these transcripts were used by the authors for post-workshop data analysis.

Results

All groups filled a conceptual toolbox poster with tools and services, some of which were overlapping. The merged toolbox shows a rich palette of library services, to be used in inter-sectoral social innovation sensemaking (Table 2). The three groups also each came up with outlines of socio-technical designs for a plausible inter-sectoral service with a common focus on “low-barrier education”.

Toolbox

To produce a public library toolbox, the groups came up with a total of 81 tools/services that public libraries could contribute to social innovations. In the post-workshop analysis, 30 of those mentioned were either identical or clustered under a broader label. For example, tools such as “buildings”, “the building” and “physical place” were clustered using the label “building”. The resulting labels were further subdivided into “roles”, “tools”, “results/services/”, and “functions”. The first three terms are taken from the Social Innovation Collaboration model ontology (De Moor, 2012) and indicate the roles that public library staff play in services, the tools that they have at their disposal to build those services, and the

resulting services supported by these tools. Note that the distinction between tools and services is quite arbitrary. We took tools to be the basic skills and resources that public libraries have at their disposal, which can be recombined to produce specific results aimed at users in services. In contrast, we added the concept of “function”, meaning the societal role that public libraries as a whole could/should play (VNG, 2005). The various elements are presented in random order.

Roles	Tools	Services	Functions
<ul style="list-style-type: none"> - Collectors - Information professionals - Reading consultants - Storytellers - Media coaches - Product managers - Specialists/ advisors - Intermediaries 	<ul style="list-style-type: none"> - Apps - Dialogue tables - E-readers - Buildings - Local networks, contacts - Social capital (low barrier, trustworthy, independent, broad societal reach) - Newsletters - Knowledge & skills - Tempting presentations - Promotion materials - Streaming of content - Study cabins - Social media - Websites - Wifi - Devices - Digital databases - Digital display windows - E-books 	<ul style="list-style-type: none"> - Bookstart - Reading clubs - Lectures & activities - Internships - Study- and workspaces - Interest-based linking - Read-out sessions - Workshops & trainings - Delivery services - CPNB programs (nationwide literature promotion) - Social/cultural education - Services for kindergarten and boarding school education - “The building” (atmosphere) - Individual advice, personal contact (telephone, building, e-mail, social media) - Collection (digital/physical) - Expositions - Online meeting place - Place to “unwind” - Physical meeting place - Facilitating schools - Open writing podiums - Access to worldwide web - Promotion of reading - Organizing 	<ul style="list-style-type: none"> - Warehouse for knowledge and information - Centre of development and learning - Encyclopedia of art & culture - Source of inspiration for reading and literature - Stage for encounters and debate

Table 2: The “Public Library Toolbox”

Some observations:

- The listings are not complete, but still a good indicator of the breadth and depth of the palette of roles, tools, and services that public libraries have at their disposal for playing their established societal functions (right-hand column). Noteworthy is that the relatively limited number of roles and tools listed already support a plethora of intra-sectoral

services. This suggest that in inter-sectoral innovations, many more new services could be imagined.

- Stressed by many participants was the position of a public library as a very well-connected and trusted place within the local community, and how this hub role informs the design of the knowledge services provided. Their being perceived as an independent and trustworthy institution and having an extensive local network consisting of many different institutional stakeholders and individuals (people from a wide range of cultural, educational, and social backgrounds regularly visit the library) result in large social capital that could be used for catalyzing many inter-sectoral social innovations.
- The range of tools and services provided make public libraries excellent storytellers and translators to help societal stakeholders make sense of the meaning and impact of (inter-sectoral) social innovations.

Potential Inter-Sectoral Innovation Scenarios

In their discussions, the various groups focused on how the processes and outputs (e.g. filmed lectures and student reports and data) of applied universities could be combined with the tools, services, roles, and functions of public libraries. The idea was that public libraries could help contextualize this content and make it available to a broader audience, yet, in turn, could help universities innovate their educational processes. The three groups produced the following scenarios, suggesting many inter-sectoral links: “People’s University”, “Job Finding” and “Low Barrier Education”. For instance:

- Professional amateurs, self-employed professionals, and potential students may all share an interest in the same topic around which universities and libraries could develop joint services.
- Job seekers, immigrants or school dropouts who often do not have access to formal education, yet do visit public libraries, could enlarge their professional knowledge and network and get familiar with new content, applications or professional fields.
- By bringing together study materials and lecture room discussions with the content and socio-technical infrastructure of public libraries, communities of interest could be grown around themes or subjects.
- Cross-overs between the research and public library world were also envisioned. Examples would be libraries facilitating community-based research by acting as living labs where researchers and students collect and analyze data in collaboration with the local community.

Besides these scenarios, in the plenary discussion, also several observations were made about the nature of social innovation sensemaking by public libraries (presented earlier in this paper).

Appendix 2: Workshop 2 - Inter-Sectoral Social Innovation Sensemaking

Method

14 public library professional from 6 different public libraries and one representative from a university participated in Workshop 2 at Cubiss in Tilburg in May 2013. The reason for organizing the second workshop was a opportunity to collaborate with Wetenschapsknooppunt Brabant (Science Hub Brabant) on the “Kinderkennisbank (KKB)” (“Kid’s Knowledge Base”, <http://www.kinderkennisbank.nl>). This digital knowledge base consists of a website and online learning materials allowing primary school children aged 10-12 to explore different scientific fields, accompanied individually by their parents and in groups by their teachers in the classroom. In Wetenschapsknooppunt Brabant, Tilburg University and Eindhoven University of Technology collaborate to promote to children the importance (and fun) of doing science. A prototype first set of introductory science materials on philosophy had just been published on the KKB. The Brabantse Netwerkbibliotheek (library network in the province of Noord-Brabant), through its subsidiary Cubiss, approached the Wetenschapsknooppunt Brabant to collaborate on releasing this content. Such a collaboration could provide an excellent opportunity for inter-sectoral social innovation sensemaking.

At the start of the workshop, a representative of the KKB (the first author) gave an introduction on its goals and approach from the perspective of the university, as well as a live demo. The posters with the identified tools and potential inter-sectoral scenarios from Workshop 1 were present in the room. The question of Workshop 1 on ‘what CAN we do as libraries’ was not repeated in the second workshop.

After the case presentation, the library professionals brainstormed in 3 separate groups of 4-5 persons on feasible socio-technical designs of a public library-enriched KKB-service (what SHALL we do). In the subsequent plenary session, a brainstorm was held to combine the individual ideas of all 3 groups into a combined design which was to be the basis for a project proposal.

Results

In the plenary session following the brainstorm session, the proposed ideas for the combined concept were presented. These ideas included mobilizing the existing network of in-school library services, elements of “battles” and games, building communities of curious children, a “question service”, ways to promote media literacy, and book tips.

In the second, plenary part of this workshop, the different pieces of the puzzle were joined together, and a concept called the Kinderkennisbattle (“Kids’ Knowledge Battle”) emerged, later renamed into B@ttlewetters. It consists of a quiz format for teams of school children battling with other teams by answering and debating questions developed by librarians based on the content of the Kinderkennisbank. For answering these questions, the teams have access to a “media-bar” already developed by public libraries to support in-school media literacy activities. Through this battle, digital scientific university content becomes available (in translated form) in a physical setting (which is directly in the university interest, since the libraries have a fine-grained network of physical locations across the province). At the same time, the battle makes children and the battle’s audience aware of the media and literacy skills required for searching information, as well as the safe use of digital media and the mediating role of libraries in this (a key library interest).

After this inter-sectoral social innovation sensemaking session, management from both the university and the public library network embraced the idea and agreed on investing in

building a prototype (Stage 3 in the Social Innovation Process Model). This prototype was successfully launched during the European Social Innovation Week in Tilburg in September 2013. Over 50 primary school children (age 10-12) participated, encouraged by their teachers, parents and grandparents. Furthermore, representatives of other educational institutions, the media and several library professionals were present.

Still, the development of this social innovation does not stop here with the release of the prototype. The next objective for Cubiss is to learn from the initial user experiences and to extend the collaborative project by acquiring additional partners and resources for sustaining and scaling the project (Stages 4-5). Several of the stakeholders present have also already shown their interest in joining the project and expanding the scope and use of the B@ttlewetters concept. For instance, a number of organizations have already indicated that they want to organize a battle at their own location, there has been an offer to broadcast next editions of the battle on the Internet, a number of schools and libraries have joined the user network, and a student of pedagogy wants to make strengthening the didactic method underlying the battle part of his final year project. Furthermore, the video compilation of the launch event was shown at a “Partner Meeting” of the Wetenschapsknooppunt Brabant. At this meeting, a broad range of stakeholders from both public and private organizations were invited to join forces and explore how the KKB in general and B@ttlewetters format in particular might link to their activities and interests. These stakeholders did, for instance, include primary and secondary schools, applied and research universities, science and technology promotion platforms, the province, libraries, and entrepreneurs.