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The 20th dmi: Academic Design Management Conference Proceedings

28-29 JULY, 2016

MASSACHUSETTS COLLEGE OF ART AND DESIGN, BOSTON, USA

dmi: ADMC

20th DMI: Academic Design Management Conference
Inflection Point: Design Research Meets Design Practice
Boston, USA, 22-29 July 2016

Design in public sector: Exploring antecedents of sustained design capability

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The challenges that face the public sector today raise a need to see service users as partners and resources in the continuous renewal of services. Public sector organizations are being encouraged to develop their design capability as a way to meet challenges and there is currently a set of initiatives aiming to develop design capability within organizations in general. Introduction of service design approaches and methods that provide tools for involvement and enhanced understanding of user needs and priorities is one popular strategy. Service design projects aiming to build design capability tend to focus on design skills, methods and process, and have an inherent preconception of these aspects as transferrable through application in service design projects. However, the types of capabilities built into these methods, and how and if the knowledge is absorbed and developed into design capability by the organizations, is rarely discussed. Based on an absorptive capacity perspective, this paper studies the development of design capability through the absorption of knowledge from service design projects. The paper argues for an emphasis on exploratory with difficulties transitioning to transformative learning. Thus not reaching exploitive learning where the organization fully benefits of the design capabilities still are lacking.

***Keywords**: Design capability; service design; implementation; public-sector healthcare; absorptive capacity*

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Introduction

There is a demand within the public sector for alternative models for management and operations than are currently available from the dominating figures of thought, e.g. New Public Management (Hartley, 2005). Approaches that open up silo structures, involve citizens and focus on value creation are gaining traction. This increasing interest in innovation and renewal for the public sphere has created what can be seen as a pull factor for approaches based in design knowledge such as service design and design thinking (Bason, 2010; Bevan, Robert, Bate, Maher, & Wells, 2007). Methods and processes from design open for the users to be seen as partners and resources in the ongoing development work. This implies a need to develop new capabilities within public-sector organizations, such as the capability to meet, listen to and involve citizens in the renewal of current and new services. In Europe (and elsewhere) several initiatives have been started to deal with these issues of design integration and capability building (e.g., Bason, 2010; Swiatek, 2016; Kimbell & Macdonald, 2015).

These initiatives claim that the introduction of service design methods and approaches in public sector organizations are a way to meet the public sector's challenges through the successful involvement of users and stakeholders, with the purpose of enhancing the understanding of their needs and priorities (e.g., Bason, 2010; Sangiorgi, 2015). Integration of service design into the public sphere has, however, also been critiqued for high costs, not paying enough attention to the implementation of outcomes, and a lack of continuity due to the use of consultants (Blyth & Kimbell, 2011; Mulgan, 2014a). These concerns suggest that development of design capability in public sector organizations cannot solely rely on hiring or procuring design competence for individual projects or introducing design methods and tools. Attention also has to be paid to whether design knowledge is transferred through projects, and what kind of design knowledge and skills, are in focus in relation to organizational integration.

These specific questions, how knowledge and capabilities are transferred and assimilated, are central topics in the discourse of organizational learning. Absorptive capacity (Cohen & Levinthal, 1990) is one concept within this field we believe could be fruitful for developing an understanding about how design knowledge is integrated and developed into design

capability within public sector organizations.[1] One key construct within absorptive capacity is the development of an organization's ability to use new knowledge through the three processes of explorative, transformative and exploitative learning (Lane, Koka and Pathak, 2006).

Taking an absorptive capacity perspective and looking at absorption of new external knowledge by the organization, this paper focuses on what kind of knowledge is transferred through service design projects aimed at developing design capability. Based on three public sector cases based in healthcare, factors influencing absorption of knowledge are discussed in relation to how the projects enable development of sustained organizational design capability.

We first present and discuss ongoing design initiatives, then position design capability followed by the absorptive capacity construct and its relation to a public sector context. Next follows a methods section where we describe the cases and their characteristics. Subsequently, we present the analysis and findings through the development of two themes, and the paper is concluded with a discussion.

Ongoing design initiatives in public sector

As mentioned above, there are a several initiatives aimed at introducing design to public sector organizations. The projects often set out to achieve a specific design outcome in parallel with an assimilation of design activities in the regular practice. One early initiative was MindLab established in Denmark in 2005 (Bason, 2010), and another more recent example is the Spider project (Supporting Public sector Innovation using Design in European Regions) led by PDR (Swiatek, 2016). Running for almost three years, the project aimed "To demonstrate the value of service design as a process for public service innovation that can achieve cost savings for providers and better user experiences for citizens through the pilots" (Swiatek, 2016, p.8). A third project is the UK policy lab, established in 2014, where the aim has been to help public policy makers explore and develop new capabilities in order to create policies more in line with the needs of citizens (Kimbell & Macdonald, 2015). Following the UK policy lab, Bailey and Lloyd (2016) has taken a first step towards understanding what happens on the inside of the organization. They highlight some important aspects to

[1] The concept has previously been used in studies of how SMEs absorb design management capabilities (see for example Acklin (2013)

consider when attempting to integrate design in public policy, such as the political context and culture, timescale and what is considered knowledge.

An argument for developing design capability within public sector organizations is to make design a natural part of development work. Exemplified through the best practice guidelines from the SPIDER project (Swiatek, 2016). Service design projects aiming to build innovation capability tend to focus on design knowledge in terms of skills, methods and processes, but not paying attention to other factors that might affect the ability to use design in the development work. Many service design capability building projects have an inherent pre-conception of design skills and methods as transferrable through their application in service design projects, as seen in the projects referred to above. The kinds of capabilities that are built into these methods, and how and if the knowledge is transferrable is rarely discussed (Wetter-Edman and Malmberg, 2016).

For example none of the studies above discuss *how* the knowledge transferred through the projects is further disseminated and absorbed by the organizations. Kimbell & Macdonald (2015) point out that the next step for the organizational learning in the UK policy lab project is to spread the knowledge and experience created in the pilots from the specific individuals that have taken part to the policy making organization at large. However, how this phase evolves is not yet studied and discussed.

We argue the importance of studying how transferred knowledge is diffused from the specific projects and assimilated in the culture, processes and routines of public organizations.

Design Capability

Design capability is an eclectic concept, where some authors connect the use of the term to design knowledge, skills and methods (e.g. Rae, 2015; Moultrie, Clarkson & Probert 2007; Mortati, Vilari & Maffei, 2014), while others relate it to management practices in the organization (e.g. Cantamessa, 1999; Mortati et al., 2014) or to design leadership (Mortati et al.,2014). In much of the literature it is also used in a reified manner, making it difficult for the reader to understand what design capability implies. This broad use of the concept may of course pose a problem for design novice organizations as they are encouraged to develop their design capability. Where do they start, what should they focus on? It is also an issue for academia when attempting to develop knowledge about how development of design capability is enabled and supported.

When focusing on design knowledge, skills and methods, design capability becomes tightly connected to human resources, to the individuals in the organization holding these skills and competences. An organization can, from this perspective, develop its design capability by hiring in-house designers or procuring design competence as needed. From the perspective that design capability also entails ability to, for example, manage design resources, integrate design in current practices and assimilate it to other organizational functions, design capability is more closely connected to management. From this perspective, design capability cannot be developed directly through adding extra or new resources. It also requires developed awareness and adaptation of routines and practices.

As previously stated, many service design projects aiming to develop design capability in public sector organizations are focusing on introducing the processes, methods and tools of service design, as exemplified by the SPIDER project (Swiatek, 2016), with the goal increase awareness that design approaches can be valuable in the organization. Lin (2014) however argues that design capability within public sector is not about copying design methods or abilities such as sketching, prototyping or research. Simply training civil servants in these skills will not develop the organization's design capability. Rather, she argues that design capability is about, with the help of these skills and abilities, building trust among the citizens by making the problem solving or development processes visible and accessible to all stakeholders (ibid.). This suggests design capability does not only imply the ability to use a set of skills, but also the understanding of how and why they are used.

Following a perspective entailing both method competence and management, Body (2008) and Mutanen (2008) also point out that design capability is not a fixed thing. They argue that an organization's design capability has to evolve and be updated as the conditions in and around the organization change (Body, 2008; Mutanen, 2008). This suggests that the design capability of each organization is to some extent unique. Some organizations might need to build up a competence for design skills internally while others can procure it. Some have a need for competence and skill within specific design disciplines while others have a more general need. Common for all however, will be the need to fit in and assimilate the design capabilities they have chosen to use with other functions of the organization, regardless of whether the design capability is internal or procured.

The understanding of design capability, on which the analysis and discussion of this paper rests, is based on the understanding that the design capability will be unique for each particular organization. The ability to exploit design, either as an in-house or as a procured resource, is central to our understanding of design capability. Therefore awareness of how design, its approaches, methods and tools, can contribute value and ability to manage this becomes important parts of an organization's design capability (see figure 1).

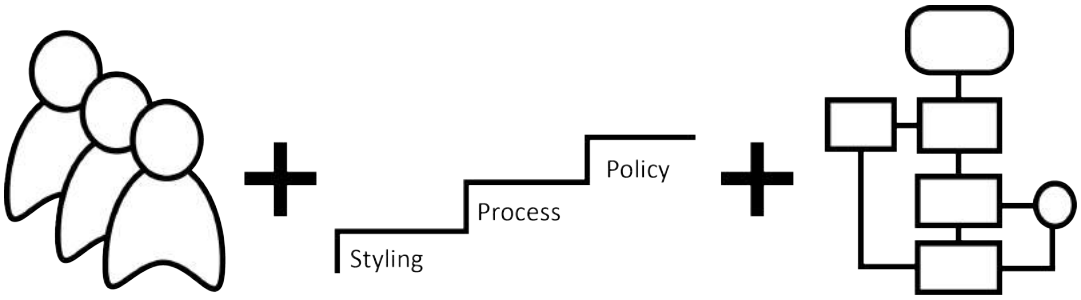

Figure 1. Depending on perspective, design capability can be understood as developed by increasing design competence resources, raising awareness of design and its potential contributions or through development of structures that enable use of design practice. We understand it as related to all these three aspects.

Absorptive Capacity

The absorptive capacity construct was first developed by Cohen and Levinthal and is defined as an organization's ability "to recognize the value of new, external information knowledge, assimilate it and apply it to commercial ends" (Cohen and Levinthal, 1990, p.128). The new external knowledge can be of varying kinds, including technological developments such as new materials or production processes, and ways to organize, work with change management or, as in this case, design knowledge. Although the construct originates from, and to a large extent has been developed through studies of commercial organizations, it has recently also been applied to and studied in non-market contexts (e.g. Harvey, Skelcher, Spencer, Jas & Walshe, 2010; Richards & Duxbury, 2014).

After a thorough literature review of the concept, Lane, Koka and Pathak (2006) have defined it as an organization's ability to utilize new external knowledge through three sequential processes (see figure 2).

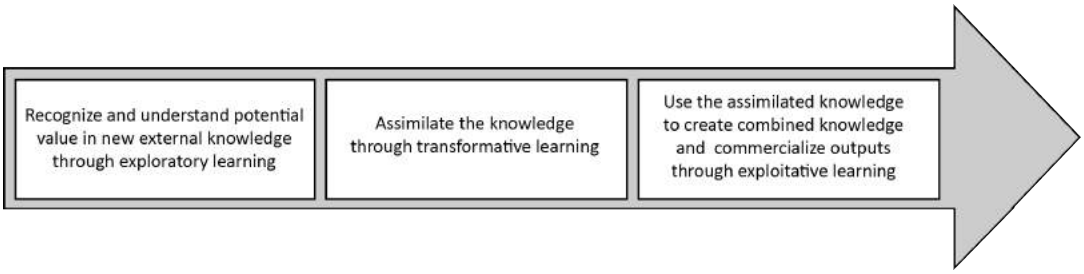

Figure 2. An organization's absorptive capacity is made up of three sequential processes through which the organization utilizes new external knowledge (adapted from Lane et al., 2006).

Antecedents of absorptive capacity

Prior related knowledge is brought forward as a main antecedent to absorptive capacity as it is easier to recognize and find value in knowledge that one can somehow relate to, according to Cohen and Levinthal (1990). Apart from the knowledge base, the individual plays an important role in the absorptive capacity of an organization, as individuals act as gatekeepers, scanning and translating new external knowledge (ibid.). The ability of the individual to absorb knowledge is thus vital for the organization's absorptive capacity. However, the absorptive capacity of an organization is not equal to the sum of the individuals' abilities; an important aspect of the organization's absorptive capacity is also its ability to exploit the new knowledge (ibid.). Van den Bosch, Volberda and De Boer (1999) argue that absorptive capacity resides in the links and networks of individual capabilities. Processes and routines to communicate and transfer the new knowledge across the organization's units are therefore important (Van den Bosch et al., 1999; Lane et al., 2006).

Focusing on antecedents related to processes and routine for diffusion of new knowledge throughout the organization, Van den Bosch et al. (1999) have observed that the organizational structure to some extent influences the absorption of new knowledge. They see that the organizational structure influences communication, and thus the ability to diffuse knowledge in the organization. They have also identified three types of combinative capabilities that affect different aspects of the absorptive capacity, socialization, system and coordination capabilities (ibid.), see table 1. Jansen, Van den Bosch and Volberda (2005) have argued that combinative capabilities affect the organization's ability to synthesize, apply and exploit the new and old knowledge.

Table 1. Combinative capabilities affecting the absorptive capacity

Combinative capabilities	Examples / character	Influence on the absorptive capacity
Socialization capabilities	Organizational culture, System ideas and values, Shared language, Agreed upon view of appropriate behavior (Van den Bosch et al.,1999)	Support or hinder knowledge absorption as they on the one hand give rise to social integration but on the other hand also risk creating mental prisons, which can negatively influence the valuing of new knowledge (Van den Bosch et al., 1999). Have little or no influence on acquisition and a positive influence on assimilation of new knowledge (Jansen et al. 2005)
System capabilities	Policies, routines, legislations, manuals, formally systemized and documented communications, procedures or rules (Van den Bosch et al.,1999)	Can be helpful in breaking down barriers put up by socialization capabilities given time (Van den Bosch et al., 1999) Some e.g. routinization have a negative effect on acquisition as it hinders exploration (Jansen et al., 2005).
Coordination capabilities	Networks, relationships (Vanden Bosch et al.,1999) Cross-functional interfaces (Jansen et al., 2005)	Relations between members of a group support implicit absorption of knowledge (Van den Bosch et al., 1999) Relations encourage sharing of information between disciplines and hierarchies (Jansen et al., 2005) Promote non routine and shared information processing which can support the interpretation of problems, overcome differences and build understanding for the new knowledge (Jansen et al., 2005)

Based on studies of commercial actors Van den Bosch et al. (1999) have argued that management plays an important role in the absorptive capacity of the organization, as management decisions and actions could adapt organizational structure and combinative capabilities. In studies of the public sector, management's role is especially highlighted. The activities of middle management are brought forward as important for the perception of the applicability of the new knowledge (Richards & Duxbury, 2014). By providing contextual information, middle managers can support group members' understanding of the relevance of the new external knowledge (ibid), thus supporting assimilation. This relates to the discussion of gatekeepers' and transfer agents' roles in the diffusion of new knowledge by Cohen and Levinthal (1990). These roles are, according to Richards and Duxbury (2014), typically played by middle managers. Richards and Duxbury (2014) conclude that it is important that *"middle managers understand the organization's strategy and their role in the knowledge-utilization process"* (ibid. p.1). A conclusion that stresses the importance of viewing management as a relevant antecedent for absorptive capacity within public sector.

Harvey et al. (2010) claimed that for information to be used in decision making and improving performance in public sector organizations, both organizational and psychological barriers have to be overcome. This, they suggested, requires an organization that has an ongoing commitment to learning and development and has an open mind-set and an open climate

that accepts debate (ibid.). Organizations where members are encouraged to "speak up" and acknowledge mistakes also tend to learn faster than organizations where the members are expected to just follow the current routines (Richards & Duxbury, 2014). In general, antecedents connected to combinative capabilities and organizational structures such as culture, processes or silos are of more importance than prior related knowledge in the public sector context, according to Richards and Duxbury (2014). The influence of combinative capabilities can also be recognized in the discussion of barriers to innovation and development within public sector by, for example, Bason (2010) and Mulgan (2014b)

Based on the literature review on absorptive capacity in general, and in non-market contexts specifically, the following concepts were identified as important for the further analysis and therefore informed the reading of the data: the three sequences of absorptive capacity (exploratory, transformative and exploitative learning); and the antecedents (prior knowledge, socialization capabilities, system capabilities, coordination capabilities); and the role of management and middle management (see figure 3). The method is described in the following section.

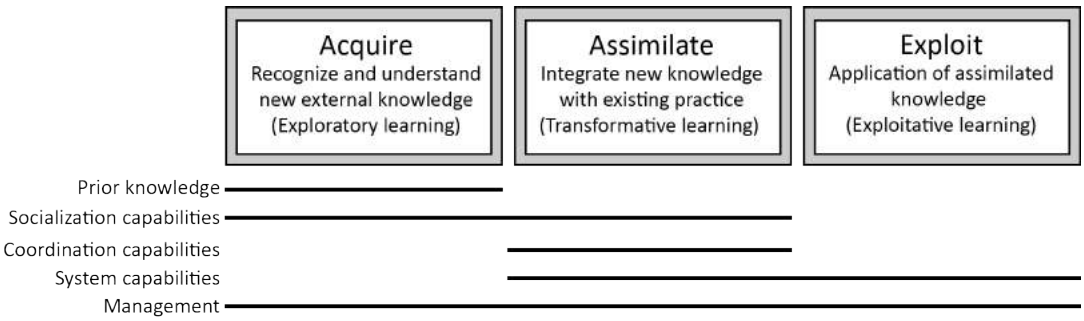

Figure 3. Antecedents influencing different aspects of the absorptive capacity.

Method

This paper set out to develop knowledge relating to the integration of design capability in public organizations. Using an absorptive capacity framework (Cohen & Levinthal, 1990; Lane et al., 2006) we are interested in knowing more about how public organizations recognize value in, assimilate and exploit the design knowledge transferred through design capability building projects. For this purpose the authors selected three projects intended to introduce service design knowledge, for renewal of public sector healthcare. The projects were initiated by an initiative set up to facilitate the

meeting of healthcare and design within a county council. In the mission statement for the initiative it is stated that the initiative shall facilitate a meeting between healthcare and design. In the meeting knowledge, experiences and skills shall be developed and shared. The focus should be to enable involvement, stimulate curiosity and challenge traditions. The projects were conducted in collaboration with external design agencies, as well as internal design competence, and all were completed within the first two years of the initiative's operation. The three projects differ somewhat in scope and organization (summarized in Table 2), which provides a rich source for interpretation.

The projects have been studied through semi-structured interviews with participants as well as project-documentation. The second author is a part-time employee of county council A, but did not take active part in the selected projects. The project documentation served to provide a contextual understanding of the respective projects, while the unit of analysis for this paper is the interviews.

An abductive approach was used for analyzing the material. In the analysis we have deliberately moved between theory and empirical data, with the explicit aim to interpret and understand the material and to find patterns (Alvesson & Sköldberg, 2008). In so doing the method used is inspired by thematic analysis (Braun & Clark 2006), using 6 different phases of analysis, from familiarizing with the material (1), coding (2), searching (3) and reviewing (4) themes, and elaborating and naming (5) themes and finally writing the report (6). However, as mentioned above the analysis has not been only empirically driven but also informed by previous theory. In particular phase two included both previously defined codes from the absorptive capacity literature and empirically generated codes, while phases 4-5 were equally informed by previous literature and developed by the authors in collaboration.

In total, 17 interviews with project participants and managers at different levels within the public health care organizations were conducted, each lasting 40 min-2 hrs. In addition, 6 interviews with designers were conducted (not included in the analysis here since it falls outside the scope of the paper), which focused on the organizational perspective. They have however, served to create an understanding of the projects. The respective interviewer transcribed the interviews, and the transcripts were then shared between the authors for familiarization with the material. A first coding of a smaller sample of the material was conducted by both researchers individually and then compared. Codes were discussed and negotiations of

divergent interpretations were conducted. This procedure was then repeated for all the transcripts.

Table 2: Analyzed projects and their characteristics

Project name/description	Character of project/methods/approaches	Organization/participants/respondents
Project A: Understanding the patient experience across silos An explorative project with the purpose to understand and map what happens in the care co-ordination process, from the patient's perspective. When different systems, competences and people interact throughout the patient's experience. Immediate result: Report identifying hot spots and improvement suggestions to illustratethesehotspot. Anunexpectedbonus resultisa perceived mindsetchangeamong the participants	The project involved a combination of several different methods: becoming a user, role-play, participant observation, journey mapping and expert interviews. The project generated an understanding of the care coordination process and proposed ideas although the purpose was deepened understanding of the process per se.	The County Council A Design agency 1 Top management, Middle management, Front line (e.g.nurses) Respondents: Project manager 3 personnel 2 management/project owner
Project B: Involvement and participation of children and youth In search for improved ways to involve children and let them be heard, in accordance with Rights of the Child (UNICEF)1,an action learning project was set up to train a group of employees, focusing on children's rights issues, inservice design. The internal design department's motivation was toachieve learningand produce viable solutions Immediate result:Individualknowledge transfer andprototypesfor further testing and implementation	Action learning project where the group was sent to a service designcourse run by Design agency 2,developed together with the internal designdepartment. In the course the participants went through a design process with research, ideation, testing ending with a set of design solutions. Through out the design project they were instructed and mentored by the designers from the agency,carried out design work in their organization,but the designer did not take active part in the work.The project focused on knowledge transfer	County Council A Design Agency 2 The project was a joint initiative from the children's rights work group and the county councils internal design department Front line, Project manager, Patients/youth Respondents: 3 personnel Internal design manager Responsible for Children's rightsgroup Organizational developer
Project C: Involving chronically ill in primary care The purpose of this project, carried out at two separate primary care centers, in two county councils, was to create good examples of how the care of chronically ill can involve higher levels of co-creation for radically improved care. Immediate result: prototypes for further testing and implementation,perceived mindset change among personnel and patients	The design project deeply involvedpatients in both exploration and ideation phases together with front line personnel.Design agency 2 was responsible for the projects planning and management and facilitation, and took active part in the design work.	County Council A County Council B (with several years of Patient Centered Care experience) Design Agency 2 Front line, Chronically ill patients, Middle management as support function Respondents: 1 project manager CC A 2 project managers CC B 1 primary care manager CC A

Analysis and findings

During phase 4 several themes were constructed, such as: tensions between individual and structural responsibility, experience as bases for shift of perspectives, the transition from project to continuous management, leadership issues, pre-understandings of approach and how

similar or different the design approach seemed to the already known. These themes were then elaborated on and merged into the following two core themes:

Totally new or just the same as we've always done?

Socialization capabilities, such as culture and common language, as well as prior knowledge, have been pointed out in the absorptive capacity literature as important influences on the absorption of new knowledge (Van den Bosch et al.,1999). Also in this data material these aspects are recognized in relation to how the participants approached the design projects and their contents. Three facets seem to have been especially important in the individual and organizational absorption of design knowledge in the exploratory phase.

First is the extent to which the design knowledge is understood and connected to the participant's prior knowledge. When seeing the design methods and approaches in the light of something they already know the participants tend to articulate these similarities. This suggests that a pre-understanding to which the design knowledge can be connected is important. This is consistent with the absorptive capacity literature. However, there is also a risk that the value in design is not recognized if the similarities are too great. As seen in the quote below where the participant first describes design methods as similar to what they already do. First upon reflection the remark is done, that the methods are actually fundamentally different, since the foundation of the design methods is the experiential dimensions. This points to the need for reflection as an important requirement for recognizing the added value in the new knowledge.

> *" LEAN has been used as well, not that I have used it really, but that one tries to make quick small changes and test them immediately, in a small group and then to continue forward from that. So I don't really see any major difference [in the way we are used to working] to the design methodology. There might be some theoretical differences; there might be other theoretical backgrounds that I don't know. But then it [the design approach], is also based on the experience of the service and it's an enormous difference of course. However, the tools or …what should I say, the methods are similar in any development work."*[2] *– Project manager, Project C*

[2] All quotes are translated to English by the authors.

Secondly, the context in which the activities, and thus the new knowledge, is introduced and how it is portrayed, seem to influence the participant's ability to connect the new knowledge to their own practices. In Project B for example the participants were moved outside their own context by going to the design agency B's office in [Capital] for the workshops. Design was, in this situation, seen as something quite foreign from their everyday context. Although the participants carried out substantial parts of the project within the healthcare context, between the workshops with distance-coaching of designers, the participants talk about the action-learning project as something "cool" and "very different". The process is perceived as confusing and eye opening at the same time.

> *"Yes and then it was a new method …a foreign world. These were the people who had designed the state television's play channel for kids, okay, hum… how would they be of help to healthcare? That was my thoughts. But today I believe this is a good way to frame problem areas and opportunities for development." – Administrator Act on Support and Service to certain Impaired Persons, project B*

In Project A and C all activities were carried out at the healthcare facilities by the designers who travelled. The connections made between the normal practices and the design work differs in these cases compared to Project B. The familiar environment seems to support the participants understanding of how the new knowledge can relate to their professional practice and downplays the air of magic that at times surrounds design.

Although there was a pronounced learning aim in project B, the focus turned to design outcomes, suggesting difficulties in absorbing the knowledge through these projects. Here we see a cultural influence; a very strong focus on the regular patient meetings makes development or improvement work distant and unfamiliar to most frontline personnel's everyday work, even though this is stated in their job descriptions. Making design knowledge difficult to relate since it is connected to development work. The participants were very consumed whilst being in the project, but as the project ended, they were not able to integrate the design knowledge in their own practices. This is further discussed in the next theme.

In project A and C, where the design work was conducted in the health care context and as such had to adjust to the culture and practices already present, the application of the new knowledge seems to have been easier. This leads to the third facet, in which the individual experiential learning plays a vital role.

In these projects the participants emphasized their own experiential learning and how this potentially has changed how they see and act upon things after the projects ended. See for example the quote from a nurse with 40 years of experience who acted as a patient in the care coordination project.

> *”And at the same time, I became the patient [the participant stresses how she became the patient]. They put on a pair of cheap glasses that took away my sight, and in that moment something changed for me."*
>
> *[…]*
>
> *"For me, it affected my work directly. I started to feel ashamed, I had thought I was a pretty good nurse who knew my job, and I probably did, but I had maybe not taken the perspective of the patient. We talk so nicely about patient centered care and the patient in focus. It’s very popular but now suddenly we were supposed to see with the patient’s eyes, how does it feel to lay there and count the dots in the ceiling or see those lights passing overhead by without having any power over where I’m taken for example. And it affected me directly in my daily work. All those things that came, large and small //…// It affected my work at MAVA (medical emergency ward) because afterwards it was often about being able to stop for half a second and ask myself if it was so extremely important to put on that blood pressure cuff now or should I let the patient breath a few minutes, show where the toilets are, get a glass of water to create a positive situation, and take in the patient’s needs.” – Nurse, Project A*

In this quote the nurse’s direct experience of becoming a patient has altered her understanding. She can connect to already known concepts, and identify in what ways this approach differs from the way she and the organization is used to work. Later in the interview she says that it was in the workshops the reflection took place and she could make the connection between her experiences and her own professional practice.

How design is presented, portrayed and acted out in regards to the organization’s pre-understandings of the specific approach seems critical. How the specific project, method and approaches are framed as similar or un-similar to existing practices, and to what extent the projects include space for reflection are other important factors.

From exploratory to transformative, diffusion and upholding of knowledge

Most respondents in the interviews after the projects gave examples of how they may utilize design approaches used and taught in the respective projects in their own practice, which implies that they recognize value in the new knowledge.

> *"I'm probably as biased as everyone else, I think I know how, this is how it works and this is how the patients experience it. But I'm more convinced now after this that this is how we should work. We can send out surveys, we can do interviews but I don't think we can reach what we did here that way." – Asst. Operations Manager, project A*

However in the studied cases we see that the organization of the projects have primarily supported the exploratory learning phase. Respondents from all projects comment on the difficulty to uphold and diffuse the transferred knowledge. Diffusion or upholding knowledge transferred and built through projects are parts of the transformative learning process in absorptive capacity as described by Lane et al. (2006). Some participants describe a slight frustration over how after the projects have ended nothing more has really happened. This implies difficulties in moving from the exploratory learning phase to the transformative, where the knowledge is assimilated in the organizational routines, processes and structures.

The responsibility for upholding both direct design results, such as ideas or prototypes, and the knowledge generated through the projects has to a large extent been placed on the individual participants from the projects. Structural support is lacking for diffusion of the knowledge to other members of the organization and for practicing the gained knowledge. Further, support for the transition from exploration to transformation and assimilation was not included in, or facilitated by the projects.

> *"We [the participants] got to write a bit about how we ourselves could carry this on, but depending on our regular positions, one from the dental care, me from the maternity clinic and one from the children's clinic. We have, we had 100% employment where we were. And then it becomes frustrating to not know [what we are expected to do next]. We can't do this on top of that, it has to be decided by management that this is something we [the count council] will invest in and it can take this much time. But those decisions didn't come*

while I was there at least [the respondent have since left her position for another organization]. It was a frustration and a pity because I would have loved to transfer it further, and we were really so very psyched to do it too." – District nurse, project B

"… I feel that if one takes part in such an education, then there also has to be some sort of follow up afterwards. Like, well how far have you gotten now? And you might need some support to get further. Otherwise there is a great risk it will peter out. Now it depends on how active you are yourself, and how much resistance you meet. You might need some support with the resistance too, how do we continue to get this through? Because you have your regular work too so it can't be too much resistance, then you might give up." – Administrator Act on Support and Service to certain Impaired Persons, project B

There are also references to system and socialization capabilities, such as patient safety and integrity policies or the strong culture of healthcare, as barriers to implement changes or work with a design approach. However, lack of time, resources and support are the main reoccurring obstacles to continued practice of the gained design knowledge. Engagement and actions from management therefore become a critical aspect in the continued absorption as seen in the quotes above.

Discussion

This study set out to explore how design knowledge is transferred into an organization through service design projects and design capability is developed in a public sector context. For this purpose an absorptive capacity framework was used and two themes identified. The two themes identified and described above are intimately connected with each other. The first theme relates foremost to the exploratory phase of absorption of knowledge, whereas the second theme captures antecedents in the transformative learning phase in Lane et al.'s (2006) model. In the material we see organizational difficulties in the transition from the exploratory learning phase to the transformative phase, and thus there is very little evidence of the knowledge absorption reaching the exploitative phase (see figure 4).

Studying the development specifically in public sector has been important as the objectives and conditions to work with design in a public

sector organization to some extent differs from those of a commercial actor. Design capability as a competitive advantage (de Mozota & Kim, 2009) is for example not as interesting in a public sector setting. The public sector is however also a large scope. The objectives and conditions of the taxations office differ from those of a health care center or nursing home. The cases presented in this work are all from a healthcare context. In a context where services and practices are directly linked to people we believe the conclusions drawn in this analysis will be applicable to other organizations with similar characteristics.

In the analysis it was stated that individuals within the organization start to understand the specific methods and appreciate the potential value the new knowledge can bring both on an individual and organizational level. Here antecedents related to social and cultural aspects are important, language, in which context the project is placed and to what extent design knowledge can be related to prior knowledge or experience. Where Richards and Duxbury (2014) state that prior knowledge has little effect on the acquisition of knowledge in public sector, we argue that in regards to design knowledge it is important to have a pre-understanding and to find similarities as well as sense of newness in design knowledge in order to support individual knowledge acquisition. This, together with how the new knowledge is portrayed and acted out in relation to existing practices, will hinder or support the transition to transformative learning.

The knowledge transferred through the projects is mainly related to tools, methods and approaches, in other words the skills aspects of design capability as described above, where the design capability becomes connected mainly to the individual's competence. There are individuals who have begun to exploit their new design knowledge (approach and methods), within their own professional practice. The prior knowledge in patient centeredness help the participants relate to the new knowledge and the experience of the new methods support the connection of it to their own practices. This is similar to what is reported from other initiatives to develop design awareness and capability in public sector organizations (Swiatek, 2016; Kimbell & Macdonalds 2015). However, as for the absorptive capacity, the organization's design capability is not simply the sum of individual abilities.

The structural issues in diffusing and upholding the design knowledge and design work seen in the data are related to the managerial aspects of design capability, for instance the ability to assimilate design work into the regular practices and functions of the organization and manage the use and

contribution of design methods, tool and approaches. These aspects of design capability can therefore be understood as developed mainly in the transformative learning phase. To support the transition from exploratory to transformative learning we argue the importance of reflection for the transitioning to happen is evident. Creating explicit forums where reflections on experiences are encouraged and connections to prior practices are enabled is vital for this transition to take place.

However, as pointed out by Van den Bosch et al. (1999) and Lane et al (2006), the organization's absorptive capacity also depends on its abilities to diffuse and assimilate the knowledge to exploit it. As mentioned in the analysis, in these cases the structural and managerial support has been lacking, impeding the absorption on an organizational level. We see a tension between individual responsibility and structural support (see figure 4).

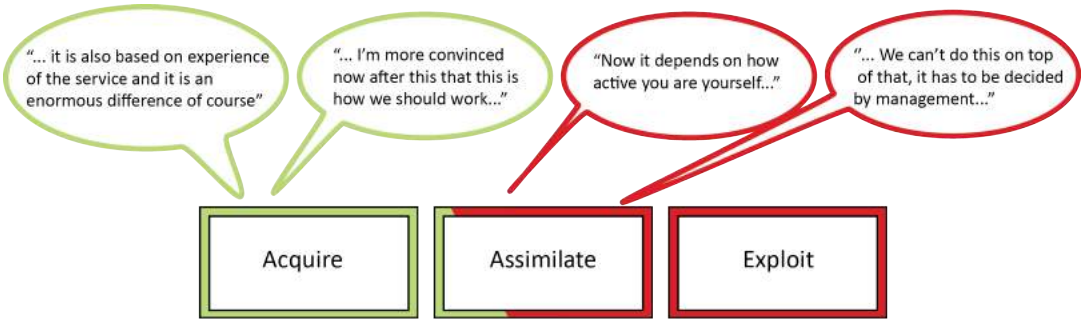

Figure 4. The analysis suggests design knowledge is successfully acquired, insufficiently assimilated, and thus not exploited.

As the projects focus on design doing and end in either a prototyping phase or earlier, they do not include and support aspects related to building structures for assimilation of the knowledge. As most participants involved are frontline staff, their abilities and mandate to continue and develop necessary structures after the projects are limited. Management actions, such as commissioning development projects involving design approaches, creating time and giving mandate to personnel to work with the methods and tools learnt, would facilitate the transformative learning and the move towards exploitative learning. Management's actions are, as pointed out by both Van den Bosch et al. (1999) and Richards & Duxbury (2014), vital for the absorptive capacity. Through management actions the structure needed for exploiting the new knowledge is built up.

Transformative and exploitative learning are not supported in any of the projects we have followed and we see issues when it comes to structures

that support diffusing and upholding new knowledge, for example a lack of managerial activities that can support assimilation. Difficulties in going from the exploratory learning phase of absorption to the phases of transformative and exploitative learning imply problems in developing develop design capability that is both embedded and sustained in the organization, rather than in individual employees (see figure 5).

We argue that if projects aimed to introduce design and build design capability in public sector organizations do not take into consideration assimilation of the new knowledge in the organization, the capability will not be sustained. The projects then risk becoming the same kind of one of projects they aim to provide against. Now that there are several studies demonstrating that and how design can contribute in the public sector, it is time to take another step. It's time to look at how transferred knowledge is diffused within an organization, from specific projects and throughout the organization; We need to start discussing what kind of knowledge is transferred in projects aimed at developing design capability, and how those projects enable the development of sustained design capability, whether design is used through procured design competence or fully by in-house resources.

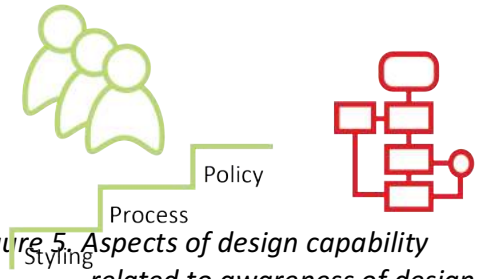

Figure 5. Aspects of design capability related to awareness of design and competence in methods and tools are developed. However, aspects related to structures and routines enabling design practice in the organization remain undeveloped.

Acknowledgements: *We would like to thank all our respondents for taking time for the interviews. The study has been done with funding support from Torsten Söderberg's foundation, project E44/10 and funding from Vinnova, the Swedish innovation agency.*

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