

University supervisor: Dr. Jacco Farla (j.c.m.farla@uu.nl) • Second reader: Dr. Maryse Chappin: (M.M.H.Chappin@uu.nl)

Internship organisation: MVO Nederland • Saro Campisano (5569087) • s.v.campisano@students.uu.nl

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Internship supervisor: Marjolijn Wilmink (m.wilmink@mvonderland.nl)

# Learning In Urban Innovation Projects: Change Agents And The Organisation Of Knowledge



## Foreword

This master thesis forms the final stepping stone in completing the master program Sustainable Business and Innovation, at the University of Utrecht. Before initiating the thesis I indicated that I did not consider myself a researcher. However, after I found an exciting topic – of which I did not necessarily know anything before hand – and a supportive environment in the form of an internship, I discovered the merits of doing research. Since the topic was not directly within my field of knowledge, conducting the research often resulted in stressful situations and sometimes lead me to believe this research would be better off in the bin. Nevertheless it was an interesting journey and an equally interesting learning experience.

First I would like to thank Dr. Jesús Rosales Carreón, who was my initial supervisor. I would like to thank him for his sympathy, constant preparedness, constructive feedback and of course his lively comparisons which clarified things easily.

Second I would like to thank MVO Nederland – and Marjolijn and the TwentyOne team in specific – for providing a challenging environment to conduct my research in. As the content was also very new for them, I truly felt part of discovering this novel field of expertise. It was a field wherein my interest in sustainability and cities could be combined and showed me interesting insights for my thesis. Furthermore it offered me a place to actually see and talk to the people facilitating and driving these novel ideas. Hence I would like to thank the respondents as well, which were all very helpful in providing me with the right input despite their scarce resources.

Lastly I would like to thank Dr. Jacco Farla for guiding me through the last phase of my thesis. His quick response and feedback was much appreciated.

Saro Campisano  
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## Summary

All over the world people are increasingly drawn by the beckoning perspective of the city. Hence the city has become a place where most resource consumption and pollution takes place. Extensive, profound collaborations and partnerships have to be developed – integrating all relevant stakeholders – to tackle the resulting urban sustainability issues. Urban innovation projects (UIPs) are considered endeavours that deal with these issues through innovative approaches and are inherently occupied with complex collaborations.

In this research UIPs are assumed to be important learning environments wherein valuable lessons arise for all its stakeholders. As the main facilitators of the UIPs, change agents function as an important conduit through which this learning takes place. Besides the change agents, system actors – as the key stakeholders in the UIPs – play a pivotal role in creating a supportive environment for the UIPs to develop. The collective action inherent to the UIPs results in important lessons learned, that often suggest transformative change in current systems. When these lessons learned are organised and distributed among the system actors, effective project learning is reached. In order to better understand the learning process, the concept of knowledge management (KM) is applied. Based on literature a conceptual model is developed which reveals multiple conditions that enable effective learning. This leads to the central research question:

*How can learning be understood within urban innovation projects using knowledge management?*

Four cases – representing four UIPs – are examined based on the conceptual model. A multiple-case study, entailing semi-structured interviews, was conducted in order to understand the current learning process within the UIPs.

The research disclosed that the creative, novel content and structure of the UIPs was both its strength, when it comes to the creation of knowledge, and its weakness, when it comes to knowledge application. The knowledge creation process was characterised by socialisation, meaning tacit (i.e. experience-based) knowledge is shared. In order to strengthen the knowledge creation, this tacit knowledge has to be articulated. Moreover the research showed that there is a clear lack of storage within the UIPs; a repository for the collectively created knowledge is absent. The process of knowledge transfer is characterised by mainly informal and personal channels, where bilateral, face-to-face meetings and dialogues are central. The knowledge application is mainly dependent on integration within the system actor's organisations. Here the research disclosed a lack of embedding or institutionalisation of the lessons learned. This leads to the created knowledge having no effect in the system actor's organisation.

The role of the change agent in the learning process became clear through the mobilisation of necessary stakeholders and the creation of a project environment in which knowledge is easily shared. The change agents stimulate active interaction and deal with predominant tacit knowledge. In order to organise and distribute the lesson learned among the system actors, the change agents have to articulate this knowledge and develop various channels that stimulate interaction and the system actors' uptake of the lessons learned.



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# 1. Introduction

The first chapter explains the background of the research. Section 1.1 describes the contextual background, whereas section 1.2 focuses more on the organisational background. Section 1.3 outlines the problem description central in this research. Section 1.4 explains the knowledge gap present in literature. Section 1.5 describes the research aim, revealing the central research question. Section 1.6 shows the societal and scientific relevance of the research. Lastly 1.7 provides a research guide.

## 1.1 Contextual background

Nevens et al. (2013) delineate cities both as sources of unsustainable activities (e.g. most consumption and production patterns) and as places where concrete actions to tackle these issues can be designed. Together with rapid urbanisation as a global trend, urban areas form interesting units of analysis in the light of climate change. By 2050, around 70% of the global population is expected to live in urban areas (UN-Habitat, 2008). The relationship between urban areas and sustainability has gained increased attention in political and economic agendas in recent decades (WWF, 2010; UN-Habitat, 2008). This recognition reveals that cities can function as critical arenas in addressing sustainability issues and can be considered drivers for sustainable development or hubs of radical innovation (Bulkeley et al., 2011; Rotmans et al., 2000; Ernstson et al., 2010; McCormick, 2013). When addressing such concerns regarding the future of the earth, the need for sustainability transitions is often emphasized. McCormick (2013) claims that a sustainable urban transformation is essential in effectively directing urban development towards sustainability goals. In order to achieve a sustainable shift in urban systems, human creativity and innovation potential need to be harnessed (Westley et al., 2011).

Evidently, sustainability issues yield severe societal problems. Such problems ask for complex and extensive collaboration between various institutions (Fowler, 2014). Furthermore when stakeholders necessary in tackling these issues are activated at the right level, the formation of more collaborative and participatory models can be developed (Rosa & Weiland, 2015). A place where innovation potential and close collaboration come together is urban innovation projects (UIPs). Such projects are initiated when societal problems directly affect people's lives locally. The nature and intensity of urban issues varies from city to city, as do the projects implemented to tackle them. UIPs are concerned with sustainable urban innovations – ranging from redesigning urban landscape to more social innovations – and ultimately supposed to contribute to a transition towards circular and inclusive cities (Wilmink, 2016). In this research UIPs are considered learning environments in which learning – if done effectively – allows UIPs to develop and increase their impact.

## 1.2 An organisational perspective: TwentyOne

In January 2016, MVO Nederland<sup>1</sup> launched an international urban initiative called TwentyOne. This initiative addresses the need for sustainable urban transformations. TwentyOne acknowledges cities as important transition spaces and it functions as an incubator of

<sup>1</sup> CSR (i.e. MVO) Netherlands is a (knowledge and) networking organization that was founded in 2004 by the ministry of Economic Affairs. The term CSR stands for corporate social responsibility and companies that actively engage in corporate social responsibility can join the network of CSR Netherlands. Furthermore it stimulates collaboration between its members and provides (practical) information on CSR.



sustainable urban innovations contributing to a transition towards circular and inclusive cities. The innovation potential that reside in businesses and inhabitants operating and living in cities, is often overlooked and underutilised (Wilmink, 2016). The overall objective of TwentyOne is to enable cities to mobilise and connect people's creativity and the innovation potential of enterprises in solving complex urban challenges. Central in the TwentyOne approach are change agents: local actors that facilitate and drive UIPs (explained in more detail in section 2.2).

### 1.2.1 *TwentyOne approach*

TwentyOne offers the expertise and a process approach of organising citizens, innovative businesses and local governments to prepare value propositions that not only have necessary social and ecological impact on cities, but also lead to scalable investment propositions for public and private investors. The urban transition approach that is central in the TwentyOne method consists of seven steps (see figure 1.1). The approach is adapted as a function of the characteristics of specific UIPs. The approach is an iterative process where after every step it is decided whether there is enough potential to invest time, money and energy into the next step. As part of the approach, TwentyOne provides tooling (e.g. stakeholder analysis) and assistance in order to enable a more efficient and effective up-scaling process.

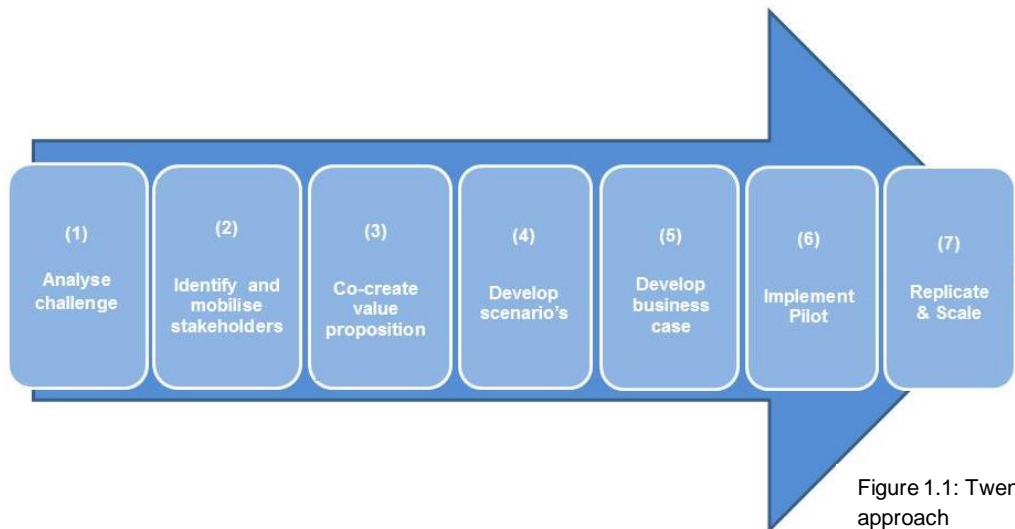


Figure 1.1: TwentyOne approach

Step **(1)** consists of the change agent analysing the local challenge by making clear what the underlying and broader issues and causes are. In step **(2)** the change agent identifies stakeholders involved in the challenge in the broadest sense. Step **(3)** occurs in one or two weeks wherein all stakeholders jointly develop value propositions based on existing qualities, constraints and opportunities. Here a so-called value mapping method is used which enables visualisation of values that are exchanged in a future value system. Then in step **(4)**, based on the value propositions, a number of scenarios are developed. These scenarios always have a '0 scenario' (no intervention) until a 'dream scenario' in which everything is possible and integrated. Lastly, together with the stakeholders the preferred scenario is selected. In step **(5)** a vision is described among the key stakeholders and a roadmap is formulated on how to achieve this vision. Then the business case for this roadmap is developed and in step **(6)** the first pilot is





implemented on the basis of the roadmap. Ultimately step **(7)** involves embedding, replicability and up-scaling. This is done inter alia by involving (global) system players that have the research, policy and capital potential to create true impact.

### 1.2.2 Change agents and system actors

TwentyOne has the shape of an international off- and online global network of locally rooted change agents. In order to actuate necessary collaboration around urban innovation and tackle local issues, individuals are needed that guide this process. In UIPs change agents collaborate with system actors (SA), i.e. stakeholders that are considered pivotal in up-scaling the projects. Change agents are neutral, independent actors that are impact-driven and work outside the traditional borders of their institution or organisation (Wilmink, 2016). Change agents have a central role in the project as they function as local partners of TwentyOne that oversee and drive the project as a whole. As an important quality, change agents ought to have a strong binding character in order to involve crucial system actors (figure 1.2).

Besides the numerous stakeholders commonly involved in UIPs, change agents work together closely with system actors. System actors are able to create the facilitating environment necessary for up-scaling the projects. These system actors (e.g. real estate, banks, and governments) play a crucial role in ensuring the project's impact (Wilmink, 2016). They are individuals working in different (parent) organisations but are collaborating collectively in such contemporary projects. They are called system actors since – as key stakeholders – they can secure impact on system (in this case urban) scale. This could be achieved when the lessons learned during the project are adopted by the parent organisation (see arrows in figure 1.2), which leads to institutionalisation of the lessons learned: alteration of legislation, regulation and policy (Wilmink, 2016).

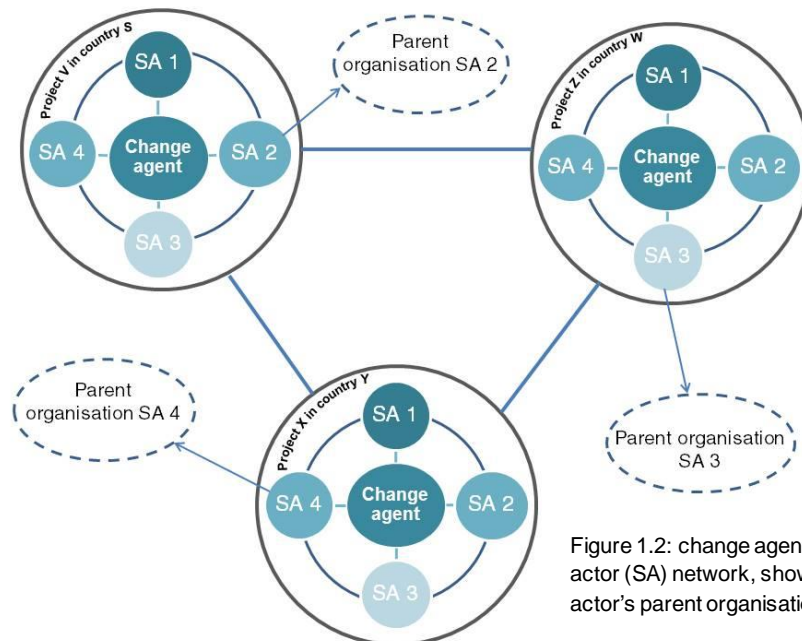


Figure 1.2: change agent and system actor (SA) network, showing system actor's parent organisations





### 1.3 Problem description

In order to eventually reach up-scaling, learning during prior steps to conduct them correctly is fundamental. Thus the focus of this research is on the process before the up-scaling part, i.e. the learning process within the projects by both change agents and system actors (figure 1.3). Up-scaling means that the system actors ultimately adopt the lessons learned from the UIP and embed them in their respective parent organisation. Adopting the lessons learned means integrating them in the services, products or responsibilities of the parent organisation (Wilmink, 2016). However, since all projects have not reached up-scaling, the lessons learned evidently are not yet embedded in regulation, legislation and policies. Lessons learned are described as main project experiences that have general business relevance (Wiewiora et al., 2009). In order for the lessons learned to be adopted by the parent organisation, the learning process within the projects need to be managed effectively. Here effectively means valuable knowledge (i.e. the lessons learned) reaches members (i.e. system actors) at low cost: quickly and easily (Chan, 2011). Thus it is essential that the lessons learned are organised and distributed effectively, a process in which change agents play an important role.

Change agents have substantive knowledge of the project as they are the ones bringing together all relevant system actors. When it comes to the responsibilities regarding knowledge transfer, project managers (i.e. change agents) have to produce lessons learned and manage project communication (Wiewiora et al., 2009). The lessons learned during the projects are considered an important knowledge asset; newly gained knowledge adopted by system actors is considered key in inducing up-scaling. For the change agents, the processes by which knowledge is created or acquired, communicated, applied and utilised must be effectively managed. Here knowledge management (KM) fulfils a supportive and central role, described as: “a management discipline that seeks to enhance the quality of knowledge processing in human social systems (such as organisations)” (McElroy, 2008). As UIPs deal with novel processes and new types of collaborations, understanding the learning process is key in progressing the UIPS.

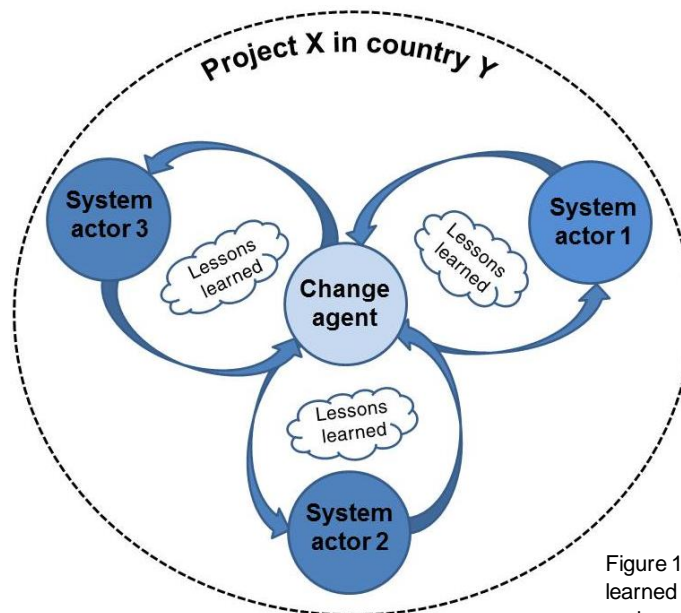


Figure 1.3: distribution of lessons learned among change agents and system actors



## 1.4 Knowledge gap

There is a general acceptance in competitive business environments and project-based industries that knowledge is a vital organisational and project resource that contributes to organisational innovations and project success (Egbu, 2004; Nonaka & Takeuchi, 1995). When KM approaches – methods to organise knowledge efficiently – are described, they mainly seem to be adopted in large, multinational and international companies (Wong, 2005). From literature it is observed that enabling factors focused on smaller settings, like projects and smaller companies, have not been considered sufficiently. It is just as important for small and medium enterprises (SME) to manage their collective intellect (Frey, 2001). Moreover, KM projects are often directly linked to the company's strategy (e.g. creating customer value or increasing profit or productivity) where first a problem within the company needs to be identified for which the KM strategy can provide a solution. However little has been discussed about the application of KM in the case of more independent projects, absent of a clear link with an organisational culture and performance. Thus in this research the focus is more on KM as a supporting tool for the change agents to stimulate effective project learning and develop the project.

Furthermore, in literature often the process of inter-project learning is described or learning is described in the context of projects originating from project-based organisation (Prencipe & Tell, 2001; Koskinen & Ajmal, 2008; Bresnen et al., 2003). The learning between projects or from projects to organisations is said to often not occur effectively (Scarborough et al., 2004). Thus the intra-project learning – aimed at benefitting the ultimate up-scaling of the project itself and not to the benefit of a parent organisation or other projects – is not studied sufficiently. All in all using KM to better understand the organisation of the lessons learned within projects of this nature lacks clear understanding.

## 1.5 Research aim and questions

The aim of this research is to ascertain how KM can help create understanding about the learning process within UIPs. Hence likely enablers of effective KM are identified to stimulate the organisation and distribution of knowledge. This leads to the following research question:

*How can learning be understood within urban innovation projects using knowledge management?*

The following sub-questions represent the necessary questions to be answered in order to answer the central research question:

1. *What role does knowledge management play in effective learning?*

By looking into the distinct processes of KM, the organisation of the projects' lessons learned can be better understood. Answering this question allows exposing possibilities for KM to contribute to effective distribution of knowledge.

2. *What does the learning process look like in urban innovation projects?*

Due to the unique collaboration of the change agents and system actors within UIPs, valuable knowledge is being created. Since learning plays an important role, it is interesting to explore how this knowledge (i.e. lessons learned) is being used and



organised in the current situation.

3. *What is the role of change agents in the learning process?*

As project leaders, change agents have a pivotal role in the learning process. With this question the change agent's role in effectively managing the lessons learned is studied.

## 1.6 Societal and scientific relevance

Through this research, insights can be generated on how small-scale sustainable projects can organise their knowledge more effectively in order to eventually contribute to a more inclusive or sustainable city. This improved learning will evidently benefit urban areas socially, economically and environmentally and leads to a healthier and prosperous living environment and a higher quality of life. This is indicated by Church and Elster (2002) who reveal that small-scale initiatives can have several environmental and socio-economic impacts with benefits for sustainable communities. They show that when wider policies are adopted that stimulate more projects with a similar character, collectively these projects could have proportionate impact (Church & Elster, 2002).

Furthermore this research can contribute to a better understanding of the role and function of individuals as agents of change in UIPs. Often change agents are described as actors inducing change, such as education programs (Stephens et al., 2008), change-oriented individuals within large organisations – called champions – (Caldwell, 2001), or they are equivalent to 'social entrepreneurs (Drayton, 2006). However their specific combining, independent character, and facilitating role in UIPs are hardly investigated. Applying the concept of KM can help change agents to better organise the newly created knowledge and ultimately stimulate up-scaling.

Besides knowledge, learning as an important aspect of knowledge production is often underexposed in the course of economic development: who learns what and how this learning takes place are often still unanswered questions (Lundvall, 2000). The experimental spaces, in which the change agents are operating, are places where learning is pivotal. Hence this research can add insight in how learning can be more effective by using KM. Accordingly, KM allows for dealing with high input of information from different stakeholders – also improving collaboration among them – and moreover transform this information into knowledge (Srikantaiah et al., 2010). Thus by studying KM in small-scale projects, it can be understood how effective management of knowledge in projects could help to professionalise these projects, which is a fundamental necessity for the success of projects. Likewise this research can contribute to the application of KM in a different context, namely the UIPs. Whereas KM usually is investigated in large organisations, the literature on KM can be broadened by applying it on more small-scale, temporary innovative projects.

## 1.7 Research guide

In order to answer the research question, the structure of the report looks as follows. Chapter 2 provides a theoretical part, elaborating on relevant theories and concepts. The chapter concludes with a conceptual model which explains how several enablers could lead to effective project learning. Chapter 3 describes the methods that were used to conduct the research.



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Chapter 4 describes the individual cases, including the findings per UIP. Chapter 5 provides an analysis of all cases. Chapter 6 concludes the findings and answers the research question. Chapter 7 discusses the contribution and limitations of the research. Finally chapter 8 shows the recommendations for the UIPs.



## 2. Theoretical framework

In this chapter relevant theories and concepts are explained. Section 2.1 describes the concepts of change agents and system actors, after which section 2.2 highlights the corresponding UIPs. Then section 2.3 and 2.4 explain the concepts of knowledge and learning. In order to find out how the lessons learned can be organised to reach project learning, section 2.5 explains KM and its components. To conclude a conceptual model is developed in section 2.6.

### 2.1 Change agents and system actors

Change agents function as the drivers and facilitators of UIPs, where system actors are the most important stakeholders – able to create the supporting environment necessary for up-scaling the project, as described in section 1.2.2. Change agents have different backgrounds but as a commonality they often work outside the traditional borders of their institutions (Wilmink, 2016). By having a certain independency within their projects, change agents are able to mobilise parties and activate citizens, private sector, researchers and government. A change agent functions as an important stimulant of transcending the interests of individual parties and ultimately aims to induce systemic change in cities (Wilmink, 2016). However societies lack the ability to develop adequate collaboration to stimulate such systemic changes. Hence intervening individuals in a new type of role are necessary to fuel multi-institutional collaboration. Interlocutors are described as “a context-specific actant, implicated and playing a pivotal role in resolving collective action problems at scales demonstrating institutional effects” (Fowler, 2014). This collective action thus demand change agents to work together closely with system actors that operate on different institutional levels. This again emphasises the different stakeholder interactions that are necessary for change agents to encourage in order to tackle urban issues with their UIPs.

The role of change agents can be further elucidated by placing them in a management context, as described Wiewiora et al. (2009). Change agents function as team and project leaders within a self-organising team, meaning knowledge is created through a cooperative relationship between the involved stakeholders and information flows are facilitated. In the context of project-based organisations, Wiewiora et al. (2009) demonstrate that project managers have a direct control over business functions, personnel and other resources. A project manager is directly involved in project processes and tasks, deals with team members and copes with stakeholders in- and outside the organisation (Turner & Muller, 2003). In managing projects, it is important to understand and apply the knowledge, tools and techniques to that are acknowledged as good practice in order to effectively manage projects. This encompasses a high-profile and challenging role with major responsibility and shifting priorities and it demands flexibility, leadership and negotiation skills (PMBOK, 2008).

As their role has been elucidated, consensus seems to be present on the attributes change agents are ought to have. Besides the *strongly connecting character*, also *leadership* is an important attribute for change agents to have. In order to drive the necessary collaborative action, various competencies, roles and principles are necessary to obtain. Besides leadership, change agents are ought to have other characteristics and competences as well. Fowler (2014) identifies several attributes that are deemed important for interlocutors to have.

*Building trust* among cooperating parties is essential in stimulating collective effort and



create actual commitment. Leaders have to show a willingness to share knowledge and information, which allows for creating an environment of trust and could influence other's attitudes (Goh, 2002). Trust is important because it creates security of the knowledge being used confidentially and hence facilitates knowledge transfer (Dhanaraj et al., 2004). There is an increased willingness to exchange knowledge when trust exists and people are more willing to listen to and absorb other's knowledge (Levin & Cross, 2004). Moreover organisations are more likely to invest resources in learning when trust is high because partners are willing to abstain from instituting specific controls over knowledge spill overs (Inkpen & Tsang, 2005). Here trust in each other (i.e. other project stakeholders) and institution-based trust (i.e. trust in the project itself) are important (De Tienne et al., 2004). As change agents operate in local situations, *finding multi-actant entry points* to change systemic relations from local scale to global scale is an important task (Fowler, 2014). This way the necessary stakeholders within the right institutions can be activated in order to develop the project. Change agents should furthermore be *aware of the existing governance structures*, configurations of power and authority. This way, possible cases of conflict can be factored into the project design. The participation of stakeholders of divergent backgrounds results in every system actor to use its own jargon. It is a competent change agents who 'speaks different languages' and to *assure easy communication and common understanding*. Lastly it is essential to obtain attributes of governance that ensure a change agent's *autonomy and accountability*. Here a clear allocation and understanding of the decision rights to secure the independency of thought and action (Fowler, 2014).

Thus the projects form valuable learning environments wherein change agents and system actors – usually not involved in such experimental and innovative projects – come together. In order for the lessons learned to be adopted by the system actors, organising the lessons learned effectively within the UIPs is key. This means making sure the created knowledge and project experience is distributed among all system actors. Here managers (i.e. change agents) are ought to obtain an overview of the knowledge present in the project (von Krogh et al., 2001).

## 2.2 Urban innovation projects

In order to increase the UIP's impact, where innovations not only lead to business-to-business collaborations but lead to more people benefitting from the innovation and system change on city scale (Wilmink, 2016), these innovations have to be scaled-up (Nevens et al., 2013). However, as most projects have not yet reached up-scaling, investigating the process before up-scaling is important. Accordingly, Weber et al. (1999) state that the scaling up of such experimental innovation is a challenging phase. As challenging objectives Weber et al. (1999) mention inter alia the extension of the network of actors and stakeholders, or the revision of a political framework to facilitate similar experiments. These are objectives that can be overcome by involvement of the right system actors as explained in section 1.2. Wilmink (2016) confirms the importance of those stakeholders and describes that when crucial stakeholders are involved in an early stage, up-scaling occurs easier. Since during the preparatory process before ultimate up-scaling still a lot can go wrong, Weber et al. (1999) state that it is important to stimulate learning in order to understand the barriers inherent to up-scaling innovation.

Now the challenge UIPs face is clear, it is necessary to develop understanding of what exactly these UIPs entail. Despite the diversity and the absence of a clear definition of the type





of project central in this research, literature on ‘grassroots initiatives’ and ‘project management’ is used to give a description of the UIPs. This allows for a better understanding of the structure of the UIPs. Inherent to UIPs, as described by Seyfang and Smith (2007), are often grassroots innovations, which can be considered “novel bottom-up solutions for sustainable development that respond to the local situation and the interest and values of communities involved generated by networks of activists and organisations” (Seyfang & Smith, 2007). Grassroots initiatives operate in civil society and experiment with social innovations and green technology. The primary function of grassroots initiatives is meeting and foreseeing in social and environmental needs that are not met in current production and consumption systems (Seyfang & Smith, 2007).

Projects can be considered small, temporary undertakings where resources are organised in an innovative way to undertake a unique scope of work in order to achieve valuable change (Turner, 1990). Turner (1990) describes projects as: “an endeavour in which human, material and financial resources are organised in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives”. Turner and Müller (2003) add that projects are ought to deliver beneficial change and are unique, use novel processes and are temporary. The uniqueness and process novelty of the UIPs are clear, whereas the temporary character can be determined once projects reach up-scaling. This allows the UIPs being approached as ‘temporary organisations’ (Turner & Müller, 2003). As a similarity, projects are undertaken to create a lasting outcome (PMBOK, 2008): increase their impact and contribute to a sustainable city. With impact is meant “bringing more quality benefits to more people, more equitably, more quickly, and more lastingly” (IIRR, 2000). However the projects’ content differs greatly, making the projects very diverse. This is substantiated by Ajmal and Koskinen (2008), describing projects undertaken by project-based organisations as often unique, uncertain and complex. Projects differ greatly since significant discontinuities in flows of people, materials, information and methods of organisation are present (Bresnen et al., 2003).

## 2.3 Knowledge

Knowledge is the central concept in this research. It functions as the entity – in the form of lessons learned – that is being managed within the projects (Wilmink, 2016) and is central in innovation (Schumpeter, 1983) and learning (Lundvall, 2000). In order to explain the role of knowledge in the context UIPs, the concept of ‘knowledge domain’ is explained. Von Krogh et al. (2001) describe knowledge domains as repositories – either tangible or more abstract – of information, data, manuals and lists of key people with tacit knowledge, residing in or outside organisations. Tacit knowledge is knowledge based on experience and is difficult to articulate. When knowledge domains are created, new data, information and tacit and explicit knowledge is created (von Krogh et al., 2001). Considering UIPs as knowledge domains, change agents and system actors create collective tacit knowledge through cooperatively experiencing new work processes, tasks and technologies.

Learning (Lundvall, 2000) and knowledge (Schumpeter, 1983) are at the heart of any innovation process. Although knowledge is subject to many definitions and classifications, generally knowledge is either considered as a resource held by individuals or as an organisational asset. Distinguishing between the two is important since both types of knowledge occur: each project results in organisational knowledge (since various stakeholders are part of it)





but the distribution eventually takes place among individuals. Additionally knowledge is often distinguished as either a commodity that can be transferred or, from a more constructivist perspective, as socially created (Snider & Nissen, 2003).

Lundvall (2000) describes the individual resource view in relation to the basic assumption of standard microeconomics which is based on rational choices by individuals. This means the amount of information and the kind of information individuals have about the world and to what extent they can process the information, are crucial issues. This perspective on knowledge focuses on a transformation process that allows data (actual state of the world) to be transformed first into information (indicators that are accessible to the agents representing the state of the world) and then into knowledge (OECD, 2000). Jorna (2002) considers this view more as a semio-cognitive perspective and considers knowledge consisting of signs and symbols and principally concerns cognition and states of individuals based on a representational construction.

As for the organisational asset perspective, knowledge is recognised as a main production resource (Cijsouw & Jorna, 2003). In this perspective knowledge can appear both as an input (competence) and output (innovation) of the production process (OECD, 2000). Regarding the production and use of knowledge by firms in the market economy, innovation theory and competence-based theory are often consulted (OECD, 2000). The importance of knowledge has even lead to the concept of knowledge-based view, characterizing knowledge as a source of competitive advantage in firms (Barney, 1991). In this view knowledge is expressed through and embedded in organisational resources like people, processes and technologies (Kogut & Zander, 1996). The newly created knowledge, based on build-up experience, can be considered a valuable asset that ought to be distributed effectively. In the knowledge economy, the way a company creates and shares its knowledge determines the company's competitive advantage and profitability (von Krog et al., 2001).

### *2.3.1 Lessons learned*

As a specific knowledge asset, lessons learned function as the main entity that is being distributed within the projects. These main project experiences function as the main knowledge subject that needs to be managed efficiently. The lessons learned evidently vary among the different projects; however they are all considered evenly essential in the project's up-scaling process. Wiig (1995) indicates that when exceptional situations occur, opportunities to learn valuable lessons arise. However in order to be learned, these opportunities need to be captured, described and preserved, in order to be accessible when needed again.

Lessons learned are defined as key project experiences, which have certain general business relevance for future projects. They have been validated by a project team and represent a consensus on key issues that should be considered in future projects (PMBOK, 2008). Lessons learned are part of the knowledge transferred that can be regulated, including transfer of mainly explicit knowledge. The objective for lessons learned is to grasp both positive and negative aspects of projects in order to learn from the experiences (Kotnour, 1999). That the capturing of lessons learned is not a straightforward task is described by Wiewiora et al. (2009) and Wiig (1995). Practitioners often mention the importance of lessons learned, yet the process of documenting and transferring lessons learned does not occur effectively – as it still lacks of effective approaches to produce and transfer lessons learned beyond the project.



## 2.4 Learning

Dalkir (2005) shows learning – as denoted by Bukowitz and Williams (2000) – is important since it functions as the transition step between the application of ideas and the generations of new ones. After an organisation acquires and uses knowledge, learning is essential because otherwise it is just stored somewhere and does not encourage change (Dalkir, 2005). OECD (2000) states that where knowledge is increasingly becoming an important production resource, learning is its most important supporting process. Levin and Cross (2004) show that, based on other work, people are more inclined to turn to other people instead of documents when information is needed. A general dominant assumption in literature is that increased knowledge sharing positively contributes to the performance and innovativeness of an organisation and that an organisation's capabilities can be enhanced when the knowledge transfer process is understood (Easterby-Smith et al., 2008). Additionally learning helps to improve one's business and stay ahead of competition (Wiig, 1995).

In this research learning is considered as the organisation and distribution of the lessons learned, gained during the projects' learning process. Goh (2002) talks about the 'learning organisation', of which the ability to transfer knowledge effectively is a key attribute. The foundation however of organisational learning lies at the individual level, substantiated by Easterby-Smith et al. (2008) presenting people as important learning agents and repositories of organisational knowledge. Since change agents operate in projects involving multiple system actors, taking into account organisational learning and its context provides meaningful insight in the distribution of lessons learned. Individuals, other than organisations, provide both a sensitive and a precarious way of storing, maintaining, and transferring tacit knowledge. Individuals are able to apply tacit knowledge to a new task or a new context without having to convert it into explicit knowledge. Instead, others may be able to capture this tacit knowledge and convert it to explicit knowledge that others can access (Argote, 2012).

## 2.5 Knowledge management

In UIPs there is no lack of knowledge, however the management of knowledge in project settings is not a straightforward task. Stakeholders involved in projects are often both organisationally and geographically dispersed, have different backgrounds and speak different languages (Kasvi et al., 2003; Bresnen et al., 2003). Hence in order to effectively learn from project experience, Kasvi et al. (2003) indicate effective KM is needed. Furthermore the knowledge that resides in projects is often inaccessible and of inadequate and poor quality (Srikantaiah et al., 2010). KM focuses on both the proper access of explicit knowledge and on implicit knowledge which is more difficult to locate and retrieve. The challenge inherent to KM in project context is to look at assets in a novel way (at organisational level), including employees (i.e. project stakeholders), databases, documents and processes (Srikantaiah et al., 2010). In projects the problem is that stakeholders often do not know what other stakeholders know. This unawareness blocks the utilisation of resources and knowledge efficiently and cost-effectively. Thus the foremost problem is that knowledge and information in general are not organised well and thus are hard to access (Srikantaiah et al., 2010).

The knowledge-based view on firms assumes that knowledge resources are difficult to imitate and socially complex. Therefore such knowledge assets may lead to long-term sustainable competitive advantage for organisations (Alavi & Leidner, 2001). Such competitive



advantage is reached when the organisation is able to effectively apply the existing knowledge to create new knowledge and to take action. This reveals organisational and managerial practises have become more and more knowledge-focused and encourage managing knowledge to the organisation's benefit (Alavi & Leidner, 2001). KM is used to identify and leverage the collective organisational knowledge to enhance the competitive position and increase innovativeness (von Krogh, 1998; Hackbarth, 1998). When knowledge within UIPs is thus effectively managed, this can improve the projects' learning process and stimulate adoption of the lessons learned by system actors.

From the premise that the projects are temporary organisations, projects are considered social collectives and knowledge systems (Alavi & Leidner, 2001). This view on organisations represents the cognitive and social nature of organisational knowledge and its place in individual cognition and practise. However it also finds its place in collective practises and culture, substantiating both the view of knowledge as an individual resource and an organisational asset (Lundvall, 2000; Cijssouw & Jorna, 2003). Latha et al. (2010) stress the difference between KM in general or in the context of projects. Projects often deal with limited time and space, whereas project teams often function as effective communities of practice (explained in section 2.5.1) with better relationships among the members. In contrast to large companies, Wong (2005) points out that when it comes to implementing KM, small-scale projects need different points of attention. For example the availability of resources is an important aspect as is allows for governing the expenses on KM (Wong, 2005). Furthermore KM is able to provide substantial support to projects and could help to achieve its goals (Latha et al., 2010).

De Tienne et al. (2004) show that KM approaches can roughly be divided into technology and people solutions. Simply implementing a database or introducing an expensive new technology does not induce the generation, sharing or transfer of knowledge (De Tienne et al., 2004). Additionally, since it is recognized that KM issues are more complex, the focus has shifted to people. As the projects central in this research are not initiated by big organisations and the projects are still in development, the focus of this research will also be more on the people side. Accordingly, Hansen et al. (1999) studied that effective KM strategies always focused on one or the other, using the other solely in a supportive role. To substantiate the former, in KM literature often two strategies are identified: the codification strategy and the personalisation strategy. The first strategy aims at writing down and store the knowledge in databases; in the second one direct person-to-person contact is stimulated and technology is used to help people communicate knowledge, not to store it (Hansen et al., 1999). Moreover these strategies underline a different approach towards tacit and explicit knowledge; whereas the former strategy focuses on explicit knowledge, the latter one emphasises tacit knowledge. Bresnen et al. (2003) describe this strategy as the community model of KM. Since tacit knowledge is often embedded in social groups, diffusion is difficult and involves developing a shared meaning that allows one person to understand another's insights in their own context. Here again the developing of communities of practice is a key issue, where knowledge is constructed as individuals share knowledge through cooperative mechanisms (Bresnen et al., 2003).

In order to assess what KM for projects means, enabling factors per KM process (i.e. knowledge creation, storage/retrieval, transfer and application) are described. KM enablers function as the mechanism to develop organisational (i.e. project) knowledge and stimulate



knowledge creation, sharing and protection; these enablers are the building blocks of effective KM (Ichijo et al., 1998; Stonehouse & Pemberton, 1999). By focussing on these processes, the organisation of knowledge can be studied and how this could stimulate effective distribution of lessons learned, ultimately reaching the system actors and their parent organisations. For KM to be effective, a KM system needs to be in place that integrates organisation, people, processes and technology. Thus only information storage is not sufficient and a KM system needs to be flexible and context oriented (Wang & Plaskoff, 2002).

### 2.5.1 Knowledge creation

The key players in organisational knowledge creation are its individual members. Through direct, 'hands-on' experience, individuals are able to accumulate tacit knowledge (Nonaka, 1994). By developing novel content or replacing existing content within organisation's tacit and explicit knowledge, organisational knowledge is created (Pentland, 1995). Simonin (2004) states tacitness can be an impediment for learning since it is hard to transfer. Explicit knowledge is a representation of a certain relation between the represented and what is being referred to and is often expressed through symbols or signs (Cijssouw & Jorna, 2003). Hence Nonaka's (1994) knowledge creation model is used which shows knowledge is created through the interaction between tacit and explicit knowledge. Here four conversion modes are discerned: socialisation, externalisation, combination and internalisation (SECI). Nonaka (1994) shows that efficient knowledge creation requires a quick analysis and pre-processing of existing knowledge and information. This in turn leads to every member having access to the necessary information with the minimum amount of steps. To reach this, organisational members need to know who knows what, and they should be related to the least amount of member so they are not receiving too much information (Nonaka, 1994). Thus change agents and the involved system actors have to know who knows what in order to create knowledge. Hence this process can provide insight in how the lessons learned are created.

Besides the four different conversion modes, Nonaka et al. (2000) distinguish four types of ba. Each ba offers a context for every step in the knowledge creation process; however the ba type is not restricted to the respective conversion mode. Ba is defined as "a shared context in which knowledge is shared created and utilised (...) ba is a place where information is interpreted to become knowledge" (Nonaka et al., 2000). The types of ba are determined by two types of interaction: individual or collective, face-to-face or virtual. For the knowledge creation process it is essential to build, maintain and utilise ba (Nonaka et al., 2000). In figure 2.1 the conversion modes (SECI) and the ba types (in *italic*) are integrated.

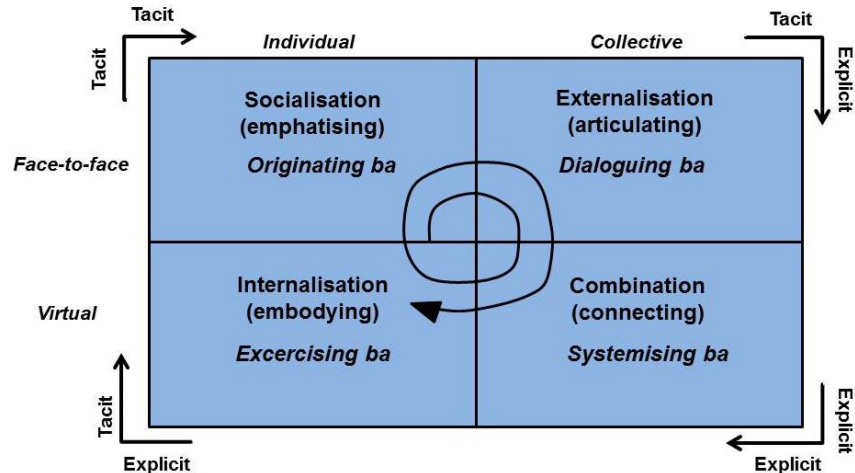


Figure 2.1: SECI process and ba types integrated, adopted from Nonaka et al. (2000)

The enabling factors of knowledge creation can be divided into individual factors and organisational (i.e. project) factors. Since individuals play a pivotal role, individual commitment is an essential factor in promoting the formation of new knowledge in organisations (Nonaka, 1994). Individual commitment comprises of three components: intention, autonomy and environmental fluctuation. This suggests that knowledge creation may be activated when organisational members are free and have adequate purpose to pursue new knowledge, such as when confronted with change in the external environment. This enabler assumes commitment by the individual project stakeholder to actually stimulate the creation of new knowledge.

A project environment has to be present that stimulates the exchange of knowledge. This means the stakeholders participating in the project do not inhibit their knowledge and expertise and have trust in their knowledge being used confidently. On the organisational level, instability in the organizational environment may act as a facilitator for the knowledge creation process (Nonaka, 1994). The culture within organisations may stimulate the sharing of redundant information from a variety of requisite employees and might enable a 'creative chaos' to emerge from the changing environment (Nonaka, 1994). The organisational environment can also be considered a context, stimulating the creation of knowledge. This context is described by Nonaka et al. (2000) as *ba* (see figure 2.1). The key in understanding the concept of *ba* is interaction, assuming knowledge is created through the interaction among individuals and between individuals and their environment. Here *ba* functions as the context shared by the interacting individuals (Nonaka et al., 2000). Hence *ba* plays a significant role in facilitating organisational knowledge creation by building, maintaining and utilising a shared context. Based on the four modes of knowledge creation mentioned before, four types of *ba* can be discerned: originating, dialoguing, systemising and exercising *ba*. Each '*ba*' provides a context for a specific step in the knowledge creation process (Nonaka et al., 2000). The types are explained by two dimensions of interaction: the type of interaction (individual or collective) and the type of media (face-to-face or virtual).

The concept of *ba* indicates the need for a knowledge-friendly culture. A knowledge-friendly culture values learning and prefers expertise, experience and innovations over hierarchy. A culture in which KM thrives should contain several components. People should





have a positive orientation towards knowledge and are not inhibited to share knowledge (Davenport et al., 1998). Accordingly De Tienne et al. (2004) show such a culture need to be trustworthy. Thus project stakeholders have to be bright, intellectually curious and willing to explore; they are not isolated and do not feel sharing knowledge affects them negatively. Additionally, De Tienne et al. (2004) confirm the importance of culture, where another important aspect is cooperative involvement. The cooperative involvement assumes that within organisations employees contribute to the organisation with their knowledge or expertise. Consequently businesses that create environments wherein employees are stimulated to interact and openly share their knowledge have better success with KM programs (De Tienne et al., 2004). Furthermore, cooperative involvement can be achieved by creating communities of practice. Such communities of practise are formed by people engaging in a process of collective learning in a shared domain, where three characteristics are essential: the domain, the community and the practise. The domain describes the identity that is defined by the shared domain of interest, where participation to the network implies a commitment to the domain. The community reveals engagement in joint activities and discussions. Furthermore members of such a community are real practitioners, where a shared repertoire of resources is developed (Wenger, 2006). When such a community of practise is created in the project environment, learning can be stimulated.

Another important enabler, following from the community of practice concept, is a clear and shared purpose and language. This enabler emphasises the importance of having a clear terminology to prevent variance in interpretation. When KM is effective, it undoubtedly changes the way people think about knowledge and thus the language they use. This enables easier facilitation of discussions and stimulates effective communication of objectives (Davenport et al., 1998). Furthermore if objectives are clearly described, a foundation of common understanding is created and means to achieve collective goals are established (Inkpen & Tsang, 2005). Sharing objectives and language in group context can also lead to a degree of group identification. This is the process where individuals consider themselves as one with a group, which enhances the need for a collective process and outcome. When the group identity is strong, people are motivated to induce knowledge transfer and show cooperative behaviour (Kang & Kim, 2009).

### *2.5.2 Knowledge storage and retrieval*

Since it is demonstrated that organisations often forget what they have learned (i.e. lose track of former acquired knowledge), the storage and retrieval of organisational knowledge forms an important aspect of KM (Alavi & Leidner, 2001; Argote et al., 1990). This part is often described as the 'organisational memory', including both tacit and explicit knowledge (e.g. written documents, databases and personal networks). Here a distinction can be made between individual and organisational memory. Individual memory is developed based on a person's observations and experience, whereas organisational memory is based on collective organisational activities (Alavi & Leidner, 2001). Storing knowledge enables embeddedness of knowledge, which then facilitates retrieval more easily by locating and adapting organisational solutions (Argote et al., 2003). Thus to reach project learning it is important that the lessons learned are not forgotten and all stakeholders have access to these lessons learned.

The main enabler of knowledge storage/retrieval is a flexible technical knowledge infrastructure. Since knowledge is often vague, it is important to develop some structure. If a technology



infrastructure to share knowledge is in place, the project will be conducted more efficient. For example, structuring knowledge repositories make it easy to extract knowledge from it (Davenport et al., 1998). In enhancing organisational memory – and thus initiating effective KM – (information) technology as storage mechanisms and advanced retrieval techniques (e.g. e-mail, intranet or databases) can be effective tools in improving knowledge/retrieval capabilities (Chou, 2005).

### 2.5.3 Knowledge transfer

The transfer of knowledge is an important process, as the nature of organisational cognition is often distributed (Alavi & Leidner, 2001). Effective knowledge transfer is an essential aspect of a learning organisation (Goh, 20020). Within organisations, communication processes and information flows drive knowledge transfer. Although it is not an easy process, knowledge has to be transferred to locations where it is needed and can be used (Alavi & Leidner, 2001). Szulanski (1996) states – based on prior research – that four sets of indicators can be identified influencing knowledge transfer: characteristics of the knowledge transferred (i.e. tacit or explicit), of the source and recipient, and of the context in which the knowledge transfer takes place. Knowledge transfer infers a cost to the source of knowledge; time and effort are spent in helping others understanding the source's knowledge (Reagans & McEvily, 2003). Hence this process mainly focuses on the individual characteristics. Since multiple stakeholders with different backgrounds are involved in the projects, the transfer of knowledge is an important aspect.

The first enabler of knowledge transfer emphasises the availability of multiple channels for knowledge transfer. The use of various, complementing channels to transfer knowledge leads to effective KM, where each channels adds value in a different way (Davenport et al., 1998). With regard to knowledge transfer channels, Holtham and Courtney (1998) indicate these channels can be formal or informal, personal or impersonal. Here informal channels, most likely effective in small organisation (i.e. project context) comprise of unscheduled meetings or informal seminars for example (Holtham & Courtney, 1998; Fahey & Prusak, 1998). However such channels are prone to knowledge loss because it lacks of a formal coding of the knowledge. Thus when a clear knowledge repository is absent these channels do not lead to widespread dissemination. Formal channels (e.g. training sessions) could ensure greater dissemination of knowledge but may impede creativity (Alavi & Leidner, 2001). Furthermore personal, face-to-face channels enable effective distribution of context specific knowledge, whereas impersonal channels concerns knowledge repositories. Information technology (IT) can support all channels, as it enables an increase in knowledge transfer by extending the reach of individuals beyond the formal community (Alavi & Leidner, 2001).

The second enabler is motivation, which is the willingness to both share and acquire knowledge. Knowledge is inevitably bound to people's ego and occupation and hence does not flow across roles and functional boundaries easily. Thus one needs to be motivated to create, share and use knowledge in order to make KM projects successful (Davenport et al., 1998). The recipient needs to be motivated to absorb knowledge, whereas the source must have valuable knowledge to offer (Easterby-Smith et al., 2008). It has been shown that the recipient's intent to learn is a crucial determinant of the extent of knowledge transfer (Hamel, 1991), however the source's motivation to teach can be equally essential (Ko et al., 2005). In this sense Disterer





(2001) argues that people need to know why they have to share knowledge in order to foster knowledge sharing.

The third enabler is absorptive capacity, which is the ability to recognize the value of new knowledge, assimilating and putting that knowledge in use (Cohen & Levinthal, 1990). The absorptive capacity of the recipient is determined by its past experience and knowledge retention capacity (Lane & Lubatkin, 1998). Szulanski (1996) states knowledge transfer is only effective when the knowledge is retained. Zander and Kogut (1995) state that, based on studies on individual learning, new skills are more easily learned the more mutual elements with already acquired knowledge the new knowledge has.

#### *2.5.4 Knowledge application*

Ultimately, the application of knowledge is what creates competitive advantage, not the knowledge itself (Alavi & Leidner, 2001). The application process comprises the actual use of knowledge, however Gold et al. (2001) show that in literature effective application is often assumed or implied. With application is meant institutionalising the new obtained knowledge in order to induce integration. Like with the absorptive capacity, Szulanski (1996) describes the retentive capacity as an important aspect for knowledge application.

The enabler here focuses on primary mechanisms for integrating knowledge in order to create organisational capability, like directives and organisational routines. Directives mean specific rules, standards and instructions developed in an organisation by transforming tacit knowledge into explicit, integrated knowledge (Grant, 1996). Routines refer to coordinated protocols and process specification that enable individuals to integrate their specialised knowledge. Levitt and March (1988) show that this is reached when knowledge is embedded in the practices, systems and relationships of the organisation by the formation of knowledge-intensive organisational capabilities.

## **2.6 Conceptual model**

Based on the theory discussed a conceptual model is created (figure 2.2). The conceptual model shows all relevant concepts and their interaction in order to indicate the direction of this research. That KM processes (i.e. knowledge creation, storage, transfer and application) – and their enablers – directly stimulate organisational processes like collective and individual learning is confirmed by King (2009). Consequently these processes produce intermediate outcomes like improved decisions and organisational behaviour and services which ultimately benefit the organisational performance (King, 2009). In the blue arrow the influence of the KM processes and its enablers on the organisation and distribution of the lessons learned – thus effective project learning – is depicted. Different enablers are identified that are deemed as important requirements for the organisation of knowledge. Accordingly, Alavi and Leidner (2001) state the KM process is not a discrete and independent organisational phenomenon. This means individuals or groups within organisations may engage in various different processes at any point in time. These enablers allow for establishing whether projects are currently managing their knowledge effectively.

From the conceptual model it becomes clear that by managing lessons learned, effective project learning can be achieved. Here project learning means the organisation and distribution of the lessons learned among system actors which eventually allows for adoption of the lessons



learned in their parent organisation. Srikantaiah et al. (2010) show that KM in projects is a significant determinant of the success of a project and it allows for an efficient learning process. As a major benefit they mention the capture of lessons learned, where managing project knowledge helps to share best practices. The conceptual model indicates what – based on KM – conditions are necessary in the projects to reach effective learning. The scope of this research however lies within the context of UIPs, i.e. how the lessons learned can effectively be organised and distributed within the projects. Since leadership is an often recurring enabler of KM, the role of change agents is important as facilitators of this distribution of knowledge and more in general the project’s progress.

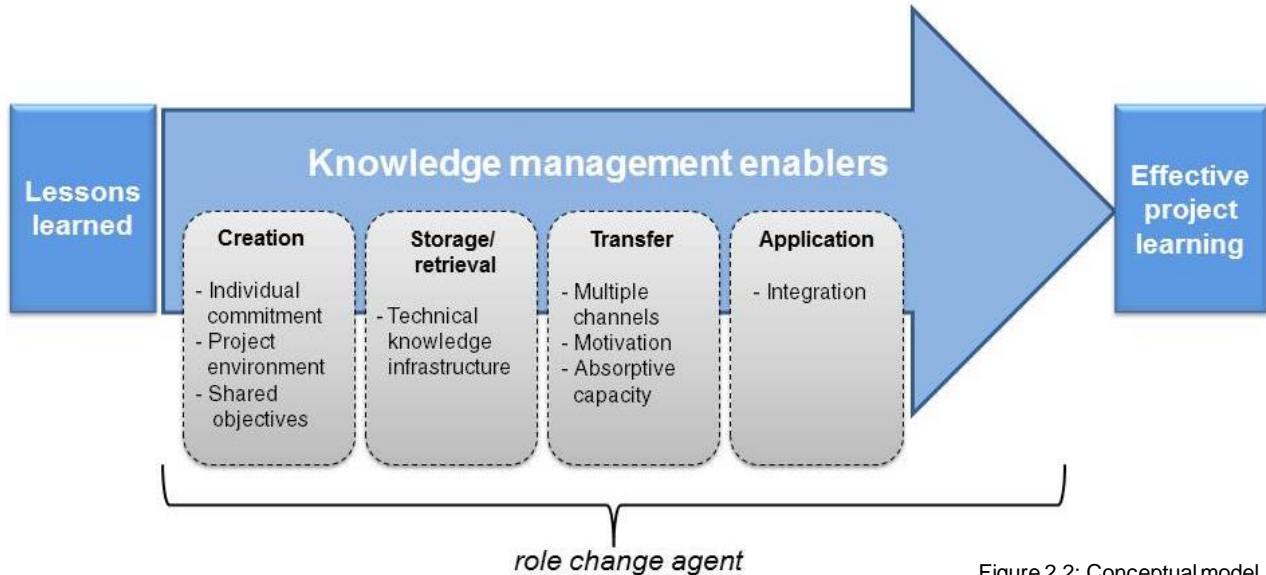


Figure 2.2: Conceptual model

In table 2.1 the enablers are operationalised based on the input from chapter two. Per KM process, the enablers are decomposed into multiple dimensions, clarifying the respective enabler. When these enablers are in place, it is assumed that the distribution of the lessons learned occurs more effectively and one can speak of effective project learning. In order to verify this, the indicators are described that reveal the presence of the dimensions and thus the enabler.



KM process	Enablers	Dimensions	Indicators
<b>Knowledge creation</b>	Individual commitment	Motivation	The presence of true intention to pursue new knowledge
		Autonomy	Feeling of freedom to create and provide new ideas
	Project environment	Participation	Involvement in and contribution to knowledge creation process
		Interaction	The way of collaborating among stakeholders
		Trust	Feeling assured the knowledge created and brought in is used confidently
		Knowledge resources	The knowledge sources and necessities used for the project development
	Shared objectives	Terminology	A shared language that creates understanding
		Alignment	The presence of mutual ideas and goals
<b>Knowledge storage/retrieval</b>	Technological knowledge infrastructure	Repository	A mechanism that allows for capturing the created knowledge
		Access	Ability to acquire this knowledge
<b>Knowledge transfer</b>	Multiple channels	Number of channels	Quantity of different channels
		Quality of channels	Effectiveness of channels
		Accessibility	The ease of reaching other stakeholders
	Motivation	Intention	Willingness to both share and receive knowledge
	Absorptive capacity	Comprehensibility	Ability to understand the created knowledge
		Recognition	Awareness of the added value of the created knowledge
<b>Knowledge application</b>	Integration	Adoption	Embedding of the lessons learned in organisational practices and systems

Table 2.1: operationalisation of enablers



### 3. Research methods

The method section explains which research design and strategy were used to answer the main research question: *How can learning be understood within urban innovation projects using knowledge management?* Ragin (1994) reveals that a research design entails a plan for collecting and analysing evidence that enables answering the main research question. Figure 3.1 shows this plan visually, providing an overview of the research steps. Section 3.1 explains the multiple case study design. Section 3.2 explains which cases are selected and why. Section 3.3 describes how a desktop study was used to answer the first research sub-question. Section 3.4 explains the empirical part and describes how the data was collected. Lastly, section 3.5 discusses how this data was analysed and how the quality of the research is assured.

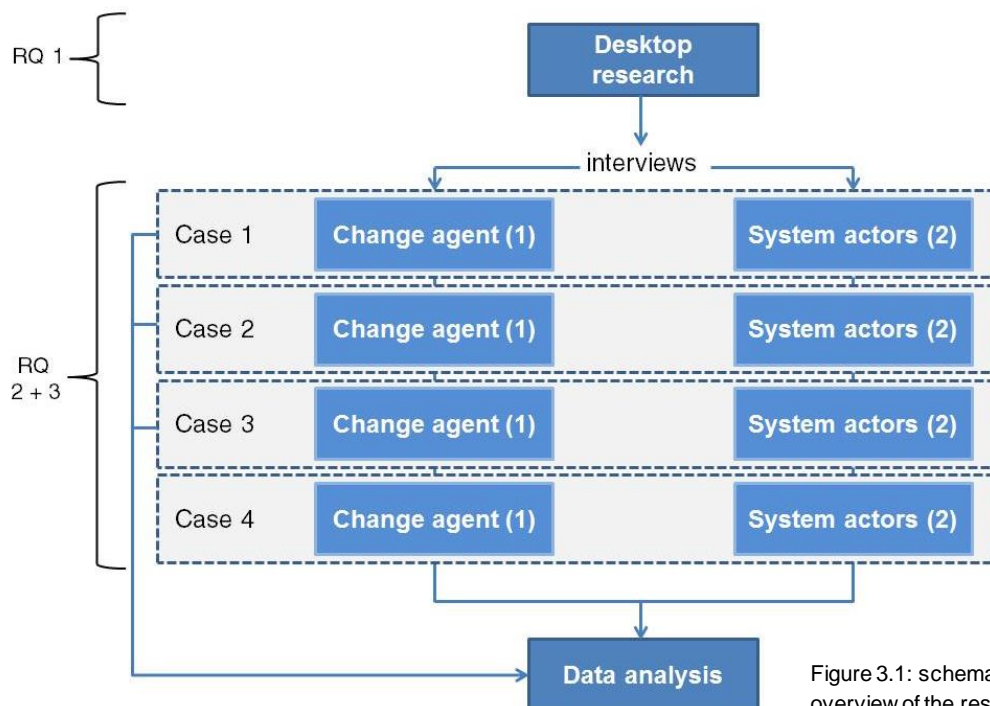


Figure 3.1: schematic overview of the research steps and methods

#### 3.1 Multiple-case study design

The research has a qualitative and exploratory character as it looks at how KM can develop insights in and stimulate the distribution of lessons learned and thus project learning. In order to study the influence of KM on the organisation and distribution of lessons learned, a multiple case study approach is taken. A case study is the intensive and detailed analysis of a case (Bryman, 2006; p. 66), which functions as the unit of analysis of the research (Yin, 2009). In this research the unit of analysis is the UIP, wherein the relation between the lessons learned and effective project learning is studied.

Conducting a multiple-case study allows capturing the process under study in a very detailed and precise manner (Flick, 2014; p. 122). A multiple case study enables the examination of the operation of generative causal mechanisms in different contexts (Bryman, 2006; p. 74). The use of a case study design allows for an in-depth understanding of real-life



process, taking into account contextual factors (Yin, 2009). In this research the processes (i.e. knowledge creation, storage/retrieval, transfer and application) and multiple enablers of KM in the context of UIPs need to be studied thoroughly. Hence crucial enablers of KM and their rationale were explored through semi-structured interviews which made a multiple-case study approach a suitable design. The multiple case study approach allowed testing several projects environments using the conceptual model, i.e. the influence of KM on effective learning. By comparing multiple cases, this research allowed to establish the conditions in which learning took place. According to Yin (2009) the evidence from multiple cases is often considered more convincing and thus is regarded more robust.

### **3.2 Case selection**

The four cases central in this research were selected from the TwentyOne network. Within this network, ten projects had a clear role assigned to change agents. As explained in section 1.2.2 and 2.1, change agents and system actors function as the pivot in the projects' facilitation, organisation and embedding. Thus it is important to obtain their insights on what role knowledge and learning currently plays within the projects. Considering the relatively low-scale scope of the projects, often two or three system actors can be clearly identified that are closely involved in the projects.

Due to the amount of projects in the TwentyOne network, the straightforward theory used in this research – which necessitates two or three cases according to Yin (2009) – and the amount of change agents and system actors per project, this research results in 4 cases. Thus the research entails four UIPs and includes 1 change agent and 2 system actors per UIP. The obtained data from both change agents and system actors gave an in-depth understanding of the role knowledge played in the projects. Experiences of the actors (i.e. change agents and system actors) are critical and can only be understood within the social and cultural context of the projects (Yin, 2009). This means a detailed description of the projects is given as well.

As a common strategy used with multiple-case design, the cases were sampled for both homogeneity (i.e. their sustainable objective) and heterogeneity (i.e. intrinsic differences on the content and methodological dissimilarities) (Bryman, 2012; p. 417). Despite the geographical and temporal (project phase) distinctions, all of the cases relied on a collaborative process that was dominant and fundamental, including relevant system actors. Moreover the cases were selected based on a shared difficulty in up-scaling, and all UIPs aimed at an inclusive and/or sustainable city. Table 3.1 shows an overview of the cases, change agents and system actors. A detailed description of the cases can be found in the following chapter, under the corresponding sections: Airborne,bdg (4.1), Kajjansi (4.2), Zorgverslimming (4.3) and Marconia (4.4).



Case	Airborne.bdg	Kajjansi	Zorgverslimming	Marconia
<b>Change agent</b>	Dwinita Larasati	Guustaaf van der Mheen	Marco Redeman	Marte Kappert
<b>System actors</b>	- Government (Economic Department) - Bandung Creative City Forum	- Uganda Local Government Association - District authorities	- Municipality of Utrecht - De Coöperatieve Samenleving	- Rijkswaterstaat - Centre of Expertise
<b>Location</b>	Bandung, Indonesia	Kampala, Uganda	Utrecht, the Netherlands	Rotterdam, the Netherlands

Table 3.1: schematic overview of cases and respondents

### 3.3 Desktop study

In chapter two a desktop study is conducted, resulting in a conceptual framework (section 2.6). The desktop study allowed getting familiar with relevant theory and it enabled answering the first research question: *What role does knowledge management play in effective learning?* It is important to answer this question first in order to understand the relation between lessons learned and its distribution to understand effective learning.

By looking into the subject of KM, its influence on the organisation of the projects' lessons learned was understood. In this research the conceptual model is used to provide the conditions under which a particular phenomenon – in this case effective KM – is likely to be found. The desktop study allowed for a comprehensive understanding of existing literature regarding KM (section 2.5), learning (section 2.4) and UIPs (section 2.2). Studying relevant concepts enabled linking the research findings to existing literature and hence shows credibility and contribution of this research (Bryman, 2012; p. 8). The theory chapter and the conceptual model were constructed using mainly academic literature, found through Scopus and Google Scholar. The following keywords were used to search for relevant literature: knowledge; learning; urban innovation; projects; knowledge management; project management.

### 3.4 Data collection

In order to empirically find out how knowledge can be managed, the data collection phase comprised semi-structured interviews with 4 change agents and 8 system actors in total (see table 3.1). The interviews lasted from 45 minutes to 1.5 hours, covered about 40 questions and were held in both English and Dutch. The respondents were asked inter alia about the learning process, project knowledge resources, personal motivation and embedding of the lessons learned (see Appendix A for an overview of the interview questions).

Semi-structured interviews allow the knowledge and experience of practitioners (i.e. change agents and system actors), which is often extensive implicit, to be made explicit. Through semi-structured interviews, verbal data is captured – which is useful as it provides analysis of professional experience and knowledge (Flick, 2014; p. 217). With the interviews, insight was gained on how both change agents and system actors use project knowledge and





perceive the lessons learned. Semi-structured interviews are a combination of both structured and unstructured (qualitative) interviews. Conducting semi-structured interviews was used since on the one hand these interviews were structured according to the conceptual model and aimed at answering all research sub-questions. On the other hand the interviewee's point of view and experience were central, resulting in rich and detailed information which demanded more flexibility (Bryman, 2008; p. 437). The semi-structured interviews cover the same set of questions regarding the KM processes, but allowed for deviation through personal experience. Hence it can be understood how knowledge can effectively be managed.

The initial contact with the change agents was facilitated by MVO Nederland and their involvement in TwentyOne. As for the system actors, these were identified and approached in collaboration with the change agents. Whereas the cases were selected through purposive sampling, the respondents as units per cases were selected through snowball sampling. The change agents assisted in corresponding with the system actors. This snowball sampling allowed for getting in contact with the right stakeholders more easily (Bryman, 2012; p. 424). Four interviews were conducted through skype interviewing due to the geographical distance. Skype interviewing is a form of online and synchronous interviewing. Due to the video element this method can be considered just as effective as face-to-face interviewing (Lo lacono, 2016).

### 3.5 Data analysis

The resulting qualitative data (i.e. interview transcripts) were analysed through coding. Coding allows for reviewing and interpreting transcripts and enables labelling components that seem to be of possible theoretical relevance (Bryman, 2008; p. 542). This process was guided by the conceptual model, which revealed what role knowledge played in the process of organising and distributing lessons learned. As was shown in table 2.1, the enablers were derived from literature. From KM literature common conditions can be identified that facilitate effective management of knowledge. Consequently these enablers are decomposed into different dimension in order to make them more concrete. The resulting indicators are incorporated into the interview questions in order to identify and assess the enablers.

Based on the conceptual model, the KM processes and enablers functioned as codes that were used to analyse the transcripts. This process is called deductive coding where codes are developed before examining the data. To give an example: 'project environment' (under the knowledge creation process) was used as a node, wherein 'trust' functioned as a sub-node. However since also other enablers were mentioned not covered by the conceptual model, inductive coding was conducted as well. Inductive coding resulted in codes derived from the data, i.e. information that was not captured by the conceptual model. This step is important in reflecting on existing literature and to add concepts to better understand theory. The coding was conducted with NVivo, a program that allows for structured coding of texts. Using open coding in NVivo allowed for insights in the current process of KM and showed how effective KM could initiate adoption of the lessons learned.

Due to the qualitative nature of the research the cases were generalisable to theoretical propositions (i.e. analytical generalisation) rather than populations (Iacono et al., 2011). This means conclusions drawn from this research are not generalisable to other, similar projects, but can validate or falsify the theories used for this research. The testing of the conceptual model in multiple cases functioned as a mean in effectively generalising to new cases (Iacono et al.,





2011). Reliability demonstrates that the procedure can be replicated with the same results, and is dealt with by making as many steps as explicit as possible. This is supported by the addition of the interview guide in Appendix A, which clearly displays the interview questions, so that the process can be audited. Moreover, initially a pilot interview is conducted in order to test the quality of the interview questions and their answers. This is substantiated by Flick (2014; p. 482), showing that the reliability of interview data can be increased by test interviewing. To assess the quality of the research, respondent validation assures the validity of the research (Bryman, 2008, p. 391). The latter is achieved by exchanging the individual result chapters with the change agents. As facilitators of the projects as a whole, they were able to corroborate the findings adequately.



## 4. Project results

In this chapter the project results are described per case. First the innovative urban project's background is explained. By unfolding the content and characteristics of the projects, the context in which the project learning takes place can be better understood. Furthermore the respondents are described in detail. In order to explain the different perspectives that are used to understand the project learning process, their roles and functions are described. Consequently the conceptual model (section 2.6) is used in every project, to structure the results per KM process (i.e. knowledge creation, storage/retrieval, transfer and application), with the corresponding enablers. Accordingly section 4.1 describes the Airborne.bdg case, section 4.2 describes the Kajjansi case, section 4.3 describes the Zorgverslimming case and lastly section 4.4 describes the Marconia case.

### 4.1 The Airborne.bdg case study

#### 4.1.1 Project background

Airborne.bdg aims to create a new gigantic landmark of Bandung, a city in Indonesia. The landmark will strengthen the city branding, which is a commitment of Bandung as it is admitted as a member of UNESCO Creative Cities Network (UCCN), in the field of Design. The process of creating this landmark is not about having certain standards for proper infrastructure, facilities, or aesthetics, but about optimising existing resources instead of building a brand new one. Furthermore it is about harmonising the output which means making the results relevant to its surroundings. The landmark is planned as a gigantic mural that will be painted on about 200 houses, which will be visible from a flyover/bridge that marks the entrance and exit of Bandung, and from airplanes that are about to land in Bandung. The inclusive aim of the project is to develop the community by creating local leaders around the project. Whereas such local areas usually are not connected to the city, this project makes the community more visible and strengthens their position.

The project is divided into four segments and currently the second segment is almost finished. The first segment is the social mapping of the area in which the project takes place. In this segment a group of anthropologists map the social dynamics of the area in order to depict the needs and concerns of the people living in the area (i.e. community). The second segment is the advocacy, including talking to the community more and try to develop support. The third segment is where the measuring of the space is done. The fourth segment is the activation of the community that will actively be involved in the actual painting of the houses.

#### 4.1.2. Respondents

The change agent of the Airborne.bdg project is Dwinita Larasati. The main stakeholders concerning the project are: Bandung Creative City Forum (BCCF), the government, the community and the paint company (i.e. business sponsor). Of these stakeholders, interviews were held with BCCF and the government as system actors.

1. BCCF

Within BCCF the product secretary and program coordinator of Kampong Creative – the



hub for the Airborne.bdg project – was interviewed. BCCF is the initiator of the Airborne.bdg project. BCCF conducts a form of activism, where communities show how urban challenges can actually be solved through urban acupuncture prototypes, that mainly require collaboration and active involvement of local inhabitants and relevant stakeholders. Instead of massive infrastructure, costly investment, or complicated bureaucracy, inclusive collaboration is central. BCCF mainly encourages district-based potentials, entrepreneurship, and bottom-up solutions by connecting to the biggest formal youth organisation in Indonesia, Karang Taruna, in escalating the areal scope. The objective is to create local leaders who could become creative agents, who again are able to maintain the existence and the sustainability of creative hubs in those districts. BCCF becomes a hub and consultant for both government and private sectors for such programs.

## 2. Government (i.e. economic department)

Within the local government the head of the economic department was interviewed. Due to Bandung's appointment by UNESCO as a creative city, the government has an important role. The city branding resulting from this appointment directly concerns the local government, as they are the stakeholder that develop policy and regulations for the city, and thus for the area in which Airborne.bdg takes place. Their role is reflected in facilitating and hosting the meetings wherein all stakeholders necessary for developing the project are invited. Due to their authority and credibility, the local government is able to invite stakeholders that would otherwise not participate (e.g. district government). Furthermore the local government has a budget for projects like Airborne.bdg which reveals their financial influence as well.

### 4.1.3. Results

#### Knowledge creation

Regarding the individual commitment, all three respondents showed a strong willingness to deliver input, i.e. all respondents felt free to share their insights in order to stimulate the project's progress. A main finding was that there was a clear motivation to create new ideas that would fit into the project. This was identified by both government and BCCF mentioning that the community was 'full of spirit' and challenged them to be innovative. Furthermore the change agent and BCCF indicated there was enough freedom to provide this new input or new ideas. Also the project itself was considered as something new for all stakeholders. It was exactly this newness that induced a collective learning process among all stakeholders: "*it (Airborne.bdg) is new, all of us are learning about how to connect these kinds of projects, because for communities we also learn how government works, how bureaucracy works, and we cannot just suddenly ask for money or support, so in a way this Airborne is a whole learning process for everyone*" (change agent). Especially BCCF and the change agent showed a strong willingness to share knowledge and were open to new ideas.

As for the project environment, both 'community' and 'knowledge' were most frequent used words in all three interviews. It becomes clear the knowledge within the project comes from



all stakeholders, but the community in specific. Since the project is developed in the community area, close collaboration with the community is essential. It is emphasized that every stakeholder brings in specific expertise and knowledge, meaning knowledge stems from people and their experience. This is highlighted by the following: *“(knowledge) comes from the variety of stakeholders that engage in this project, I think this causes discipline, partnerships, collaborations, where each party bring their own knowledge in the project which is a good resource or a very good fuel for this Airborne project” (BCCF).*

Besides the system actors, it was emphasized that the team behind the change agent plays an important role, as the change agent often does not operate alone. Like the project stakeholders, this team consists of members with different backgrounds as well. Thus the change agent’s team forms a second source of necessary knowledge for the development of the project. This is made clear by the following: *“We (project team) come from different backgrounds, some are designers but in our team there are also architects, photographers and so on. We each have our own way to approach the process and each is working with his or hers own capabilities (...) so you just use your own knowledge” (BCCF).*

A third important source of the knowledge is the interaction among the stakeholders itself. It was stated that by socialising – on a more informal level – with the stakeholders and through more formal collaboration like meetings, project knowledge was created: *“I think the cross-collaboration enriches the knowledge of this project” (BCCF).* For this collaboration it is important to approach each stakeholder differently in order to create mutual understanding, as indicated by the change agent. The government saw an important role for themselves in this process by organising meetings to bridge and connect the involved stakeholders: *“So government invited stakeholders to hear their ideas and to join, to implement it. Like, we connect with businesses, we connect with regional sub-district to help this project get implemented” (government).* Although these meetings are being organised, the change agent indicated they should be more frequent: *“maybe it’s better if we would have regular planned meetings, so to meet each other in a regular basis which we don’t have now. We only contact each other if we have updates. That is a loose way of doing a project (...) What can be improved as well is more talking” (change agent).*

Furthermore it was stated that finding the appropriate methodologies during the project also leads to newly gained knowledge, which can be termed as learning-by-doing. The change agent called this hands-on knowledge: *“it’s hand-on knowledge, so you have to right away implement it to the object (project) itself” (change agent).* However BCCF emphasised that, for effective learning, it is important that there is transparency of the benefits the project has for each stakeholder. What worked best during this collaboration is giving examples of previous work done by both BCCF and the paint company. This again creates new ideas and knowledge and helps to convince other stakeholders to participate in the project. Also the Airborne.bdg project itself is used by BCCF to promote similar projects and is used by the government to show other municipalities how such a collaboration model can be developed and used. What also helps – for the progress of the project more in general – is to know the right persons, in the right position. For example the change agent indicated the current mayor was from the community and was already a member of BCCF which helped to get governmental support for the project.

When looking at the shared objectives, all respondents agreed that there was mutual



understanding among the stakeholders. Although this understanding is reached through intense collaboration first, the approach depends on the stakeholder. The change agent and BCCF indicated for example that they are both in a municipal committee which increases the mutual understanding with the government: *“With the municipal it’s very special because since I’m in the committee, we’re now having this equal vote in developing Bandung as a creative city. I think we understand each other more now when we talk. They understand our agenda and we understand their agenda and then they understand how we communicate”* (BCCF). However the community is approached less formal and common understanding is reached through intensive dialogue to create trust. As for the alignment, it seems shared objectives are not necessarily a requirement for the project learning. It was indicated by the change agent and BCCF that with the government the city branding was a shared objective, but with the paint company there was less alignment. However the change agent indicated that through close collaboration the paint company began to see the value the project could add to their brand: *“I think they (paint company) have been actually learning this as well since this buzzword ‘creative economy/city’ and so on has become more and more popular. So they’re going that way as well. Because what can you sell now if you don’t have this social inclination as well. So it’s of their interest as well”* (change agent). It became clear that the closeness from the change agent and BCCF towards the stakeholders varied. The change agent was closer to the government – through the presence in the municipal committee – than with the paint company which increases communication with the government.

#### Knowledge storage/retrieval

All respondents made clear the lessons learned were documented. BCCF and the change agent said these documents were currently mainly for internal use. The documents were accessible for other stakeholders as well, however this is often demand-driven: *“The other stakeholders do have access to these lessons learned but it’s not out there as a website or as a book, but whenever we communicate with them we can give updates and so on”* (change agent). This is however something that is worked on; to make the lessons learned accessible for anyone and especially to make it understandable by avoiding long and technical language, graphics and videos are used. It was acknowledged by BCCF and the change agent to make comprehensive documentation and reports in order to capture the experience and create clear examples that can be used in the future.

#### Knowledge transfer

When considering the channels through which knowledge was shared, communication was an often recurring term. Communication was considered important by all respondents and frequently used interchangeably with learning. It was acknowledged by all respondents that communication was a requirement for collaboration, where it became clear that all stakeholders were relatively easy to reach when help was needed. It was shown before that the increased communication also improved the mutual understanding. This is highlighted by the following: *“The learning mostly comes in how you communicate to each other, for example I’ve told you about the head of the Economic Department and it’s her responsibility to decide how much goes where so if we get to communicate to her where, look, the problems of the city are so and if our project is relevant in the same way as the plan, she can easily approve it. (...) So you learn how to communicate it like that”* (change agent). As for the mode of communication, all respondents



agreed face-to-face is the most effective as this mode allows for building trust more easily: *“mainly face-to-face, because from my experience face-to-face meeting is always the most ideal, why? Because we can build trust, while face-to-face meeting and trust is not likely to be achieved through phone or internet or emails or things like that”* (BCCF). Hence the stakeholders mostly interact through meetings. However these meetings are mainly focused on one on one contact, where jointly meetings – in which all stakeholders are present – are not common. Furthermore it was stated by BCCF that knowing more people in each stakeholder group was preferred in order to better understand their needs.

Among the respondents there was a clear motivation to share their own knowledge, but also receive knowledge from other stakeholders. Thus the sharing of knowledge was deemed essential for developing the project: *“Yes, (open to exchange knowledge) because it’s not only in my interest but also their (other stakeholders) interest as well if we want this to happen”* (change agent). Other stakeholder’s knowledge was clearly perceived as relevant for the project, where it was emphasized every stakeholder had its own relevant input.

Regarding the absorptive capacity of the newly created knowledge during the project, none of the respondents found it hard to adopt this new knowledge – often explained due to prior experience with similar matters.

#### Knowledge application

As for applying the lessons learned, both the change agent and BCCF mentioned that this is a slow process. This is mainly explained by the newness of the project content; every step that has to be taken in order to develop the project further, involves new competencies and new collaborations which evidently take time. Although it was emphasised that this might change the course of the project, none of the respondents said their way of working in the project changed.

#### Change agent as leader

It was emphasised by all stakeholders that BCCF was the leading institution. But there was no consensus on who exactly is the leader within BCCF and also more than one person was mentioned. It was indicated that there were multiple leaders, where it was also considered important to have a leader within every stakeholder group: *“it is important to have a leader, in two sides. On BCCF side and also from all the stakeholders. There should be one coordinator of each stakeholder. Why? Because it is easier to connect in that way and it’s easier to distribute resources. It is cutting time and energy”* (BCCF).

As for the competences of a leader, various characteristics were mentioned. First building trust was mentioned as an important competence to have for a leader. When there is trust among stakeholders, engagement can be reached. A leader has to be knowledgeable: *“the leader should be the one who has the knowledge the most. So he or she has to understand the challenge of developing programs for this typical site”* (BCCF). The change agent indicated a leader should be at the same time humble and authoritative. Furthermore a leader has to oversee the project as a whole and has to be able to make big decisions concerning the project.





## 4.2 The Kajjansi case study

### 4.2.1 Project background

Within Kajjansi area (Kampala, Uganda) lies the Kajjansi market where the community living around the market area mostly consists of factory workers. The market itself lies in a swamp at the foot of the hill, which causes regular flooding. There are no proper toilet facilities and major other challenges are garbage disposal and utility bills. These are part of the regular problems that challenge all markets in Uganda, and deeply affect the vendors at Kajjansi market. Other challenges are the disconnection to the road and problems with parking and taxi's. The energy, waste, drainage and water issues on the Kajjansi market, combined with the major infrastructural, spatial and mobility interventions in the close vicinity of the market and the presence of a variety of local businesses, can become a huge challenge for further development of the area. An uncontrolled urban sprawl is anticipated in the area, if not managed properly by the newly formed town council.

The project aims at mobilising inclusive and circular entrepreneurial solutions that can address the challenges related to the basic amenities in the area. These business opportunities are interconnected (circular) – connecting multiple stakeholders – and create employment opportunities for the youth and women around Kajjansi (inclusive). The overall project objective is to develop and implement an integral spatial development strategy with inclusive, circular business cases that form solutions to the challenges in and around the Kajjansi market area. In this way the project creates a spin-off for the local economic activities and considers the challenges regarding drainage, waste management, mobility, clean water, sanitation, reliable power supply, health facilities and infrastructure and affordable quality housing for lower and middle income.

### 4.2.2 Respondents

In this case the change agent in the Kajjansi case is an organisation called B-Space. Within B-Space Guustaaf van de Mheen was interviewed, which was the strategy director and project manager of the project. The main stakeholders concerning the project are: Uganda Local Governments Association (ULGA), Wakiso District Local Government, Government of Uganda and DASUDA (urban, spatial and mobility expertise). Of these stakeholders, interviews were held with ULGA and Wakiso District local government as system actors.

#### 1. ULGA

Uganda Local Governments Association is a membership organisation of all District and Lower Local Governments of Uganda whose mandate it is to unite local governments and provide them with a forum through which they can come together and make common positions on key issues that affect local governance. ULGA's main function is to advocate and negotiate for the interests of the local governments and its ultimate goal is to promote and build democratic and accountable local governments capable of delivering efficient and sustainable public services to the people. ULGA has embraced the objective of local economic development and has developed a specific interest in developing markets as a key element of local economic activity. ULGA is looking to fully understand the potential





to create inclusive and circular models in their development of economic areas with their members.

## 2. Wakiso District Local Government

Wakiso District Local government (Wakiso) functions as the local governmental institute as the Kajjansi project is located in this district. They are responsible for the improvement of the quality of life of the people living in the Wakiso district. Regarding the Kajjansi project, they are responsible to fulfil the mandatory monitoring and evaluation of Development Projects in Wakiso District.

### 4.2.3 Results

#### Knowledge creation

Regarding the individual commitment, all three respondents indicated that they were motivated to create new ideas and deliver input into the project in order to develop it further. From the governmental side, both Wakiso and ULGA consider it as their duty to improve the quality of life by stimulating local economic development. Here both ULGA and the change agent indicated that Kajjansi could be an example for other market place in Uganda.

When looking into the project environment, knowledge was considered an important resource and even mentioned as a purpose of the project as it could function as an example for other market places: *“knowledge is a key component of the project for which it forms one of the core purposes. The project as a living lab seeks to generate and build the necessary knowledge and skills around inclusive urban planning and development” (ULGA)*. As for the origin of the project knowledge, several sources were identified. Firstly all three respondents agreed that the necessary knowledge for developing the project is coming from all stakeholders involved in the project. As indicated by the change agent: *“I think that it is useful to sit down with the different experts, but also with the local stakeholders after every project phase, that I think is the most important thing and especially how you would continue further collaboration” (change agent)*. It was especially the experience and expertise the different stakeholders held that was deemed essential: *“I think first and foremost that in general all the people that were cooperating in this project, both the experts from Netherlands as the local team, were all experienced professionals and experienced in working in this kind of settings and were positive about the project and its outcomes and were willing to adapt their processes and way of thinking to contribute to those outcomes” (change agent)*.

Secondly the change agent stressed the importance of the local knowledge and how this local knowledge relates to external knowledge. It was emphasised that external knowledge, from DASUDA and also MVO Nederland, was very helpful for developing the project. However both ULGA and the change agent stressed that local knowledge and community participation are key requirements for developing the project: *“I think it is good to realise that maybe there is some expertise coming from the Netherlands but without the input from the local stakeholders I think the expertise becomes obsolete or irrelevant. So you need the local stakeholders too and place it in the local context but also to see what elements of that expertise is actually of added value, and what elements are actually not useful at all” (change agent)*. For example the change agent



indicated that an increased utilisation of local knowledge and expertise, supported by Dutch experts, would have been more useful.

Thirdly both Wakiso and ULGA indicated that an important source of knowledge and learning – more formally – were governmental resources. ULGA mentioned that the available policy and legal framework functioned as an important knowledge resource. Wakiso on the other hand emphasized that the learning mostly occurred due to the establishment of the steering committee in which the terms of reference of the project were created. Moreover both Wakiso and ULGA emphasise that the project learning comes about the interaction among project stakeholders in more formal, organised settings like workshops and consultations: *“The learning currently occurs within the project as being integrated in the on-going Budgeting and Planning consultations for the forthcoming Budget Framework Paper (...) By being involved in stakeholders consultations, sharing responsibilities and being participatory”* (Wakiso). The change agent on the other hand noted that the learning process was not that structured nor planned: *“That (learning) process is really ad hoc and is not coordinated; it almost happens spontaneous or not at all I would almost say. In the project design there was no time or space reserved to do that”* (change agent). Besides, the change agent added that the team behind the change agent (i.e. B-Space) and their deployment in different phases of the project was also an important element in the project learning.

Furthermore the project environment was characterised by a high level of newness, i.e. the project content and the approach used were considered unique for the local context: *“I think within this context, because it was highly innovative and improvisation was needed depending on the type of information that was delivered”* (change agent). This novelty then demanded the stakeholders to be more adaptive: *“Of course there were meetings and discussion but in general there was this ability to have a dialogue with regards to the need for adaption or moving forward”* (change agent). The project environment was also described as having a clear role division, there was openness in communication and cultures and mutual respect was present: *“what is really nice in this project setting, is that it was really clear who had what role within the project. (...) And we saw a lot of openness in the communication and respect for different cultures and different cultural settings within the project. And that created that openness and ability”* (change agent).

As for the shared objectives, there was consensus among all respondents that there was a good understanding between the project stakeholders. ULGA and Wakiso indicated that this was mainly induced by the government and achieved through official meetings: *“This (stakeholder alignment) was able to take place through the leadership and co-ordination of actions of ULGA (...) Therefore we were able to arrange meetings and secure the active participation of all key stakeholders in the preparations, consultative and design phases”* (ULGA). Besides the mutual understanding, in general the respondents agreed that they pursued the same objectives, in which different agendas could be present if they were transparent: *“I think another element is to really appreciate and dissect the different objectives of such a project, where all parties have a different agenda which is fine but then the agenda should be very open and visible. (...) all stakeholders had their own agenda’s, which was not always 100% clear, what the different agendas were in the long term”* (change agent).



### Knowledge storage/retrieval

Regarding the knowledge infrastructure, no clear storage mechanism was in place: *“On our side (B-Space), as far as I know there has not been an official evaluation moment with an official evaluation report with lessons learned but discussions have been taken place on various levels” (change agent)*. However both ULGA and Wakiso indicated that it was too early to discuss the issue of storage of information as the project was still in the beginning of the development phase. Wakiso mentioned that the intended Monitoring and Evaluation strategy and communication plan was not yet in place. Furthermore the change agents specified that the same people that were present from the start are still active in the project, so the knowledge is mainly with them: *“I think it’s also good to mention here that a lot of people that were involved in the project are still involved in the project so those learnings are still embedded in the project team people. However this leads to uncertainty whether or not the lessons learned are known among all stakeholders” (change agent)*.

### Knowledge transfer

When considering the channels through which information is shared, all respondents indicated that the best way to do this was through dialogue and face-to-face meetings. This method of exchanging knowledge was considered useful as it helped to generate and provide quick feedback which again is necessary for the project development and implementation process, as indicated by ULGA. This is made clear by the following: *“Learning so far takes place through the on-going consultative and feedback workshops as we develop the Project strategic framework. (...) Meetings, co-creation sessions, workshops as well as one on one interviews have been used to stimulate high levels of interaction amongst all players and stakeholders” (ULGA)*. Another benefit of interpersonal contact, mentioned by the change agent, was achieving common understanding that was present in the project environment.

As for the motivation, all respondents were clearly motivated to share their knowledge but also to receive knowledge from other stakeholders. As ULGA indicated before, the Kajjansi project is considered a ‘living lab’ (i.e. experimental space wherein innovation can be tested) in which the lessons learned and the created knowledge are considered valuable: *“as they (lessons learned) will be used to strengthen our advocacy on related policy and legal issues as well provide a framework to determine key capacity building strategies for the local governments” (ULGA)*.

The absorptive capacity was hard to determine, as both ULGA and Wakiso found it difficult to answer this question because they found it too early in the project to be able to give a concrete answer to this. On the other hand the change agent showed that the newly created knowledge in the project was easy to understand, albeit it was not necessarily close to his expertise: *“It was easy to understand, but it was not always close to my expertise. But that is why we bring in experts because it’s their expertise” (change agent)*. It thus becomes clear again that the necessary knowledge comes from different stakeholders.

### Knowledge application

Considering the integration of the lessons learned, the same story as for the absorptive capacity holds, where ULGA and Wakiso found it too early to answer this question sufficiently. From the change agent it becomes clear that the integration of the lessons learned it not straightforward and clear. Moreover the time span of the project was considered as too narrow in order for the



way of working within the project to change. This is made clear by the following: *“I would assume so (embedding lessons learned), but more in an informal way than in an officially documented way. (...) The time span to sufficiently integrate the lessons learned was too small and also the room within the project boundaries was not quite enough to make major changes during the course of the project”* (change agent). Within the project boundaries (e.g. budget-wise, stakeholder arrangements) the change agent found it unwise to change the way a project is organised in the midst of it, where it was considered better to save this for the evaluation phase.

#### Change agent as leader

ULGA and Wakiso clearly emphasised governmental leadership. Both system actors indicated that institutional strength and governmental coordination are important competencies of a leader: *“This (stakeholder alignment) was able to take place through the leadership and co-ordination of actions of ULGA, through my office, that of secretary general. ULGA is a respected voice for local governments and it is known to do what is in the good interest of its members”* (ULGA).

However all three respondents agreed that there was not a single person that had the lead. Accordingly, the change agent stated that there were multiple, equal leaders depending on the needs: *“Honestly I think it was much more a project that was run based on equality, so leaders would change depending on the different expertise needed. So, formally, if it was about creating the local contacts and creating a local setting or the local operations, it would be ULGA. If it was coordination within Wakiso it was done through Wakiso. If we were talking about coordination on inclusive businesses and circularity with the Dutch experts in that area, it would be me. So I think the leadership was switching depending on the knowledge expertise needed in that moment in time”* (change agent). This is substantiated by the following: *“So I can imagine in this kind of setting, actually having a leader with a capital L is not per definition necessary. If you associate a leader with someone who is the boss and makes the decisions, actually in this kind of setting I think it can be quite contradictory in reaching the objective. I can imagine if you have a team with lesser capability and with a lesser knowledge on the topic, then it is good to have a leader, but I would vouch in this kind of setting, it’s better to have a couple of good experts so that the whole leader question becomes an irrelevant question to ask”* (change agent). Furthermore as important competencies of a leader the respondents mentioned: the coordination of stakeholders, creating a space in which knowledge is easily shared, developing local networks and methodologies and create stewardship.



## 4.3 The Zorgverslimming case study

### 4.3.1 Project background

Zorgverslimming is a project that focuses on making (local) healthcare smarter. It is currently situated at the neighbourhoods of Leidsche Rijn and Vleuten de Meern in Utrecht. The project is initiated through the wonderment of how inefficiently healthcare issues are organised by the current system. By living in the neighbourhood itself, the initiator noticed that healthcare issues are often not organised well. However the people dealing with these issues also have smart ideas to tackle them. Thus, as a self-assignment, Zorgverslimming addresses these issues and organises smart healthcare solutions, by for example organising an evening in which people learn how to lift their disabled child without straining their back. Organising such an evening could lead to less people straining their back once a year, thus not having to go to the doctor, or to the physiologist, do not call in sick from work and not have to pass on caregiving tasks to others. It is calculated that each time straining your back costs about 2,000 euro, which means this could save a lot of social costs per year. Apparently this is not organised by the system because nobody feels responsible for it. Hence Zorgverslimming collectively – together with inhabitants and local business – aims at making healthcare in Leidsche Rijn and Vleuten de Meern more enjoyable, less expensive, more humane, future proof and thus smarter.

### 4.3.2 Respondents

In the Zorgverslimming case, the initiator Marco Redeman functions as the change agent. He is the main facilitator of the project together with a small team. The main stakeholders of the project are: De Coöperatieve Samenleving (DCS), the Municipality of Utrecht, the inhabitants/community, local healthcare providers in the neighbourhood and a possible health insurance company. Of these stakeholders interviews were held with DCS and the Municipality of Utrecht as main system actors.

#### 1. DCS

DCS is a network of entrepreneurial citizens, social entrepreneurs and their cooperatives. Together they form a learning environment for economic and social renewal. What is learned in one place is often applicable in another place, so DCS functions as a network wherein information is quickly shared. DCS aims at strengthening the role of civil society in which it is committed to induce circular economies and an inclusive society. The assumption is that before, market and government were leading and were able to sustain a certain standard of living. However due to the shift away from the welfare state, a lot of amenities are not taken care of by the government anymore. Thus the objective of DCS is to – together with the member cooperatives – structurally participate and tackle the voids left due to the transition and create an organised civil society.

#### 2. The Municipality of Utrecht

The municipality is organised according to different departments like environment, mobility, spatial planning etc. and every department has its own district office. In these district offices there is a 'wijkregisseur' (i.e. neighbourhood director) which is the face of municipality in that neighbourhood. The municipality respondent is the neighbourhood





director of Leidsche Rijn. It is their function to know what is going on in the neighbourhood and to translate what is needed to the municipality. Their objective is identifying, agenda setting and escalating on different levels in order to foresee in the local needs.

### 4.3.3 Results

#### Knowledge creation

The individual commitment to create new ideas and deliver input into the project is in this case closely related to the origin of the project. As the change agent described, the project was born from wonderment about the rigid and inefficient healthcare system. This wonderment, together with actually knowing local people experiencing these gaps in the healthcare system, created the drive to initiate the project and create new ideas to improve it: *“I was asking around and more people came up with smart ideas. So then we just started from self-command (zelfopdracht), we said to each other, now we’re going to organise things differently that are now organised weirdly, things that are not organised we are going to organise”* (change agent). Also DCS stressed the presence of wonderment; one has to have the right motivation and attitude to create ideas and learn. The change agent indicated this wonderment stimulated his conviction to start the project. Accordingly, the municipality indicated the project ‘triggered’ its participation: *“it triggered me, I thought we need to do something with this. (...) We can simply do this much smarter, it is not exactly like we (municipality) thought it should work but maybe it’s not worse, or it’s just different, so we do not really know, so in that sense I’m just curious if it works, and what’s needed to make it work or what barriers are faced, and how you can solve it”* (municipality).

It becomes evident that part of the municipal’s commitment stems from its own inefficient organisation. The municipality acknowledges the fact that because of its structured organisation and bureaucratic processes, projects like Zorgverslimming – which are not clearly demarcated – lack sufficient support. This is supported by the following: *“there’s so much knowledge in society that just doesn’t fit in how we think it should be, I think it’s a shame if we wouldn’t do anything with it, so it very much triggered me”* (municipality). Furthermore both DCS and the change agent substantiated this by emphasising the malfunctioning of the system as a whole, in which voids occur through the shift away from the welfare state.

As for the project environment, first local knowledge plays an important role. Besides all respondents emphasising the importance of knowledge from local inhabitants, ‘people’ was the most frequent used word in the interviews. Furthermore the change agent stressed the fact that local knowledge stemming from people is the cornerstone of the project: *“So the belief that all knowledge and all relevant information is in the community, the people, which gives us I think a lead on a lot of other parties who are looking for solutions and answers”* (change agent). Moreover the municipality indicated that it is exactly this knowledge that the municipality lacks. However a necessary requirement for extracting this local knowledge and learning with the community is the trust and involvement of the local community, as they function as the pivot of the project and legitimise its impact. Within the knowledge people have, an important aspect of knowledge creation is the orientation towards solutions. Instead of focussing on problems,





Zorgverslimming emphasises the importance of thinking in solutions which again can be found in the creativity of (local) people.

A second important source of knowledge and learning is the valuable connection between the stakeholders. Both the change agent and DCS mentioned each other as important learning environments, where the mutual learning is actually the connecting factor: *“(...) the laboratories where it is happening, which include Zorgverslimming (...) where one needs the other: Zorgverslimming would not by itself have all those entries in different ministries or in the banking world or at major health insurance companies and vice versa, DCS has no value for those health insurers or banks if you do not have the network of these concrete operating cooperatives” (DCS)*. An important step here is to analyse each other's need in an early stage in order to smoothen the collaboration and to know what the strengths of each party are. Moreover an important incentive in this knowledge exchange is the mutual value that is being shared. The change agent states that it is essential to make clear what value your project has to a certain party to create a link. However the municipality indicates that it is not always evident what the added value is of the project and that this should be made more clear.

A third source of information is coming from the people that broke out the current system and people that are still in that system. The system is described as the way business and official institutions are currently organised. This is shown by the following: *“so I need people, still in the system, who know the system well enough and who are able to exert influence on it and share that knowledge. (...) A third important source of knowledge are the people who have broken out (the system), so, I have worked at municipalities for 14 years, so I have knowledge of how municipalities work, how official political relations are, how you can play that game” (change agents)*. All respondents are aware of the diminishing control of the government that will lead to more responsibility and opportunities of civil society. The change agent indicates that there is a lot of knowledge and experience with people that are stepping out this system. DCS emphasises that this is a process of 'learning by stumbling' (struikelend leren), which can be described as learning-by-doing; a process in which one actively learns during an endeavour and is able to make mistakes. In the context of the shifting balance of power in society, DCS describes learning as follows: *“it is stumbling forward that you organise, but it is forward so you make progress and the tripping is the learning part. In the old days stumbling is seen as a failure, here it is seen as learning” (DCS)*.

A fourth, noteworthy source of knowledge within projects like Zorgverslimming is technology, as mentioned by DCS. With technology DCS particularly means the mobilising power of smartphones: *“But it (knowledge) is in your smartphone. The ability to combine smartly is infinite, you mobilise it yourself on the spot, if you want to organise a flashmob then you put something on your app or you make a tweet, well within an hour there are at least 50 people. (...) That smartphone is stronger than any government” (DCS)*. DCS stressed that the capabilities of a smartphone gives civil society more power in organising itself. Another noteworthy remark on knowledge is that the knowledge is not coming from books, as stated by the change agent. True knowledge necessary for the project is coming from the local people and knowledge from books in this case is believed to be old and irrelevant.

The interaction between the stakeholders is going well according to the change agent: *“interaction with the organisations, with the people who are involved, with the stakeholders, is actually very flexible and loose and based on trust because we only go where the energy flows”*



(change agent). DCS indicates that this interaction is guided by codes of conduct and integrity they have developed as a necessary agreement for collaboration. Additionally DCS plays an important role in developing a consorted action of local initiatives in which all official and informal parties come together and address local health care according to *Zorgverslimming*. On that note the change agent shows that it is important to create equal partnerships. For example, *Zorgverslimming* is part of a collective of local health parties like general practitioners and pharmacists. In this collective *Zorgverslimming* has an accepted, equal voice and belongs to the core group of the collective. On the other hand, partnerships with the municipality are much harder, as indicated by the change agent. In this collaboration a main finding is that collaboration with one party legitimised the collaboration with others; collaboration with a ministry gave the project credibility towards other stakeholders like the municipality.

In order to outline the characteristics of the project environment, first the flexible organisational structure of the project is described. The change agent emphasised that the project organisation is not rigid and adapts to where the energy lies, which means the focus of the project can shift. This flexibility allows the project with a lot of space and freedom to operate. Besides the aim, the project content is also different than any other standard initiative, as they function as a sort of mediating organisation. The municipality and the change agent both acknowledged this differentiating type of organisation, where the municipality sees this as a reason for difficulties in the collaboration with *Zorgverslimming*: *“which makes it very difficult for this type of initiatives that are actually a kind of mediating organisation, they are not initiatives themselves, but they ensure that the initiatives get off the ground and can be picked up smarter and help with approaching these issues and that's really less sexy than an initiative itself, which is concrete, you can grab it, you can say I've scored, this many people have done this. So it also lies a bit in the type of organisation that it is difficult to present them in a positive way”* (municipality). This leads to the municipal's perception of the project being still too vulnerable for an equal partnership.

This new type of organisation reveals the general 'newness' the project environment is facing. The change agent is the first to describe the project as being 'weird' and 'difficult to explain' to all stakeholders involved. The constant input of new ideas and the societal value thinking central of the project make it very unique. DCS confirms this by putting *Zorgverslimming* in the middle of the transition towards a society in which inhabitants take their role, making the project one big learning trajectory. This novelty and flexible organisational structure could explain the high degree of openness for new ideas and share them in the project environment: *“If I had something new? Yes, it's not strictly demarcated, that's the interesting thing, they just look and see if they run into something and then ask what can I do? So if I would have something, it would certainly be picked up”* (municipality). Besides the novelty of the project, the project environment is characterised by an intertwined collaboration between the respondents. Here the change agent is part of DCS, whereas the DCS respondent is part of the committee of *Zorgverslimming*. DCS purposely does this in the initiation phase in order to get the projects on the right track and position the project into the DCS context. Furthermore the change agent emphasises that within the project environment there is trust and a shared sense of pride among the stakeholders.

The project characteristics already shed light on the shared objectives. The collaboration is said to take place in a close group where close initial collaboration plays an important role.



This close collaboration allows DCS and Zorgverslimming to grow closer to each other. Furthermore, although the project type was considered unclear sometimes, the municipality indicated that the project fits in the urban program 'Utrecht Maken We Samen' and hence meeting the target inherent to that program is shared by the municipality and Zorgverslimming. However the municipality stated that they probably did not aimed at the same objectives as Zorgverslimming and that this is also not a requisite. As long as you are partly going in the same direction and you create transparency through dialogue, then it is fine: *"But that (having same objectives) doesn't matter, as long as you're aware of it, but partly you do have the same goals, and those you have to find with each other"* (change agent). The change agent stressed the fact that an agreement between two parties is only possible when you know why the other party is joining the project; this openness again creates equality and trust.

Despite the partly shared objectives, there was a common understanding among the stakeholders. This common understanding is mainly achieved by sharing the same principles. Moreover both the change agent and DCS stated that collaborating parties need to comply with criteria they developed. Both system actors emphasise a national trend, which is the erosion of the welfare state, leading to the inhabitants having to do more themselves. Here lies an opportunity and easily leads to shared objectives and common understanding.

#### Knowledge storage/retrieval

The municipality indicates that the lessons learned are partly being captured through a report called 'Samen leren en werken aan de stad', to which the change agent also has access. Furthermore both DCS and the change agent point to plans of developing learning documents in which the learning and added value of the project is written down. Thus although the intentions are there, lessons learned specific to the project of Zorgverslimming are currently hardly stored: *"We don't capture anything, or hardly, unless we are interviewed as by you, so I am very pleased that there will be something on paper about what we have done. (...) But otherwise no documentation, far too little"* (change agent). Accordingly, the municipality and the change agent stated that the knowledge is mainly stored in the people involved in the project. Here the municipality indicated that only writing down the lessons learned is not sufficient; they also have to be passed on but this is again hard due to the organisational structure within the municipality: *"because if it's only on paper it's not enough, that won't work, there are always new people coming in and out and they go to another place and that knowledge simply disappears. (...) So we have to find a way of how to keep it alive, how to continue to share experiences, in any way whatsoever"* (municipality).

#### Knowledge transfer

When describing the knowledge transfer, first the channels through which the knowledge is being exchanged are described. As explained before, the early involvement of both DCS and the municipality with Zorgverslimming lead to short linkages and easy knowledge transfer. Here the communication is often bilateral and face-to-face.

Regarding the channels, a main finding was that the channels can be grouped into formal or informal channels. All three respondents mentioned the importance of formal channels like meetings and committee involvement. The intertwined involvement of the respondents was mentioned as an important channel for communication. Furthermore the change agent pointed to several meetings that were organised together with the municipality. For example in the



beginning the change agent organised ‘founders meetings’ together with all initially involved stakeholders to determine the project’s direction and structure. Also a town council was deployed and a council expert meeting was held in order to make clear to the municipality and other healthcare stakeholders what it is that Zorgverslimming does exactly. This shows that the change agent actively involves the municipality in joining the project. As for the effectiveness of the meetings, the municipality said the following: *“I thought they were not so effective. In the beginning they were, the founders meetings, we said we’ll work on this together, but afterwards I thought they were really too much on how are we going to continue financially instead of what can we do and what we need from each other, it should have been more about the content. Because I think that is what catches people, me at least”* (municipality).

Besides the formal channels also the importance of informal channels was stressed by DCS and the change agent. Here informally ‘catching up’ is mentioned and especially regarding the local inhabitants, the change agent mentioned that conversations on the street or on the schoolyard are a common source of information sharing. The change agent also showed that sometimes approaching stakeholders through informal channels helps to get them to join the project or share their expertise.

As described before, technology plays an essential role as well in the sharing of knowledge, according to DCS. On the other hand the municipality and the change agent considered technology or media as supporting means, where face-to-face contact remained most important.

The motivation to share knowledge was not mentioned explicitly but it became clear through the fact that DCS and Zorgverslimming exist by the grace of each other’s knowledge and expertise. Moreover the municipality showed willingness to share knowledge and experienced freedom to do so within the project.

When explaining the absorptive capacity, again the intertwined collaboration between the respondents through the committees turned out to be beneficial for the absorptive capacity. This leads to the respondents sharing the same philosophy which makes it easier to understand the newly created knowledge: *“If you understand the three playing fields story (public, private and civic) and you understand that you come from a two playgrounds domain (public, private), if you have that picture clear you can understand those processes. (...) Then you know why your problem is really just the solution field but you just experience it as a problem, when you see the picture is not complicated anymore”* (DCS).

On the other hand the change agent indicated that it was exactly his lack of knowledge – concerning the healthcare system – that functioned as the added value. It was this lack of knowledge that led to the wonderment as source of initiating the project: *“The major added value was that I didn’t have any (health care) knowledge, so I could be surprised, I could say ‘I find it very strange, but maybe it’s not weird, explain it to me, is this weird or this is not weird?’ And if others then said yes that’s weird, I said ‘I told you so, shall we do something about it then?’ (...) as an outsider I can ask stupid questions, I can be surprised and as an outsider I do not have to blend into the system or conform to the system, so I do not have to have knowledge of that system”* (change agent). Moreover the high absorptive capacity of the change agent can also be explained by his prior experience and educational background. As an urban developer and through former working experience in several municipalities, the change agent is able to understand how interactions in neighbourhoods work and how the municipal unit works.



### Knowledge application

In order to get insight in the knowledge application, the integration of the lessons learned is discussed. First, when looking at the integration within municipality, a main finding is that there is enthusiasm and some sort of formal embedding, according to the change agent: *“And those officials in the municipality are very excited about it (Zorgverslimming), on the one hand the social costs reduction, that we make it plausible, they would like to spread it within the municipality, like yes this works you see, and this is also a new way of thinking that they are very happy about that we have tried it” (change agent)*. As for the formal embedding, the change agent mentioned that important issues of the project content are part of a coalition agreement, which again is part of the urban program ‘Utrecht Maken We Samen’. Furthermore embedding can be found in a council resolution: *“and it has also led to a first council resolution in 2016, unanimously adopted by the Utrecht city council, which is called ‘Continue with Zorgverslimming’, so the council said yes we think making healthcare smarter, of which we are an example, locally initiated, is so important that we want to continue the agenda and encourage the project wherever possible. And last week the program budget for 2017 was discussed in the council meeting and that resulted, that the Utrecht city council finds it important to support smart-making healthcare initiatives in the neighbourhoods permanently” (change agent)*.

However, despite this enthusiasm and embedding, the change and municipality indicate that thus far no real agreements are made with the municipality. Hence despite the subsidy and enthusiasm within the municipality, no real assignment or money has been exchanged between Zorgverslimming and the municipality. The change agent states that for this kind of transactions within the municipality, Zorgverslimming is still considered vague, which can be explained by the unclear type of organisation.

As a reason for this, the municipality and change agent point to the municipal’s organisational structure. This makes clear that the lessons learned need to reach more people in several levels of the organisation instead of only one person within the municipality. Here convincing other employees within the organisation of the project’s impact is considered an important element in order to keep the project on the (political) agenda, according to the municipality: *“and it also requires something of us as officials or as an official organisation to see what is needed instead of just the first reaction being how we should do it. And we’re not only doing it in this area but we’re doing this throughout the whole organisation, to make this kind of movement, and that is not easy. (...) Because sometimes you’ll manage in your workplace but you still have your boss who’s judging you, or not to mention politics” (municipality)*. Having external ambassadors (i.e. people outside your direct project organisations conveying your idea) was an often recurring theme with the change agent. As a main finding it was deemed essential to have such external ambassadors inside the system actor’s organisation that are committed to the project.

Secondly, the integration at the side of DCS is aimed at structuring the lessons learned in existing agreements. For DCS Zorgverslimming offers insight in a new type of learning. This learning is serving under the sharing economy instead of the current scarcity economy and therefore creates value and resources which are widely available. It is exactly this new type of learning DCS want to embed by tapping into existing agreements: *“In that way we structure inside arrangements that are already there, with a new law that is being developed or city deal arrangements (...) but always backed up with our cooperatives as learning labs, and that is how*





*the embedding works. (...) Because in the old economy, you have the law as guardian of the consistency in society, but in the public-private-civil era you have learning as a guardian of the consistency, you get a different control mechanism” (DCS). Furthermore DCS is collaborating with multiple faculties and lectureships in order to make this learning even more efficient.*

#### Change agent as leader

All respondents agreed that the change maker was indeed the leader of the project. More than a single leader, the respondents mentioned that mainly a carrier is needed in these kinds of projects, someone who feels responsible for the direction and content of the project and drives its progress. Besides the characteristics and competences of a so-called leader, a main finding was that the phase of the project also demands a different leader structure, substantiated by both change agent and municipality. Thus it is wise to have one ‘face’ (i.e. a representing person) in the beginning of the project, but later the project have to be carried and represented by multiple individuals. Representing the project through more and diverse individuals would create more capacity for the project. This is shown through the following: *“In the beginning, I think it’s very important, for the clarity, also for the continuity, however that is a little contradictory, so that it’s the same person, on the one hand continuity, on the other hand it is vulnerable and you need to make clear that it’s not just Marco (change agent), but he has people all around him. So in the beginning I think it is very important, because it is easier to follow someone that you trust instead of a plan you trust. (...) And now it just needs to stand as a much wider something with more faces” (change agent).*

As for the characteristics, building trust was a competence addressed by the municipality and the change agent himself. Furthermore, in relation to stakeholders involved in the project, it was deemed important to be able to understand (the needs of) your stakeholders, bridge values and communicate clearly. In order to bridge values, the municipality emphasised that it is important to adapt your story strategically and to have your business pitch ready, according to the party you are dealing with. The change agent stressed the importance of emitting persuasiveness and have self-knowledge (i.e. know that your project might be considered vague). Lastly – like the municipality indicated – DCS added that a leader should be truly inspired by (the impact of) his project and enthuse others. Moreover there should be a high level of openness towards newly participating parties and ideas.





## 4.4 The Marconia case study

### 4.4.1 Project background

In 2013 the city of Rotterdam assembled creative entrepreneurs around the Marconi Free Zone (part of Rotterdam Innovation District, in Rotterdam West) and asked if they could come up with activities to revitalise 30.000 acres of wasteland. Since the large-scale transformation of the area into an urban area starts only from 2025, the entrepreneurs were offered the site for the coming ten years. The cooperation of entrepreneurs thought out a plan for a temporary public experimental area in the context of developing a new level playing field for new alliances between civil, public and private parties. The plan consists of a living and working zone, an experimental zone (where builders can experiment with constructions and materials), a public stage and park, and a meeting point and leisure zone. Thus Marconia was founded, wherein four creative entrepreneurs combined their ambitions to realise an experimental free zone through combining time, networks and knowledge.

Marconia's social and urban development is based on the principle of developing a new level playing field and 'cross-sectional connectivity' through creating transferable and tangible experiments. Combining the experiences and expertise of society, government, knowledge institutions and business in new networks, Marconia is able to create sustainable solutions for the city of Rotterdam and beyond. This cross-sectional connectivity helps to move towards a new reality, with new solutions for economic and societal issues. Meanwhile Marconia investigates new forms of governance and supporting financial structures.

### 4.4.2 Respondents

In the Marconia case, one of the initiators is Marte Kappert, who is interviewed as the change agent. The main stakeholders of the project are: De Coöperatieve Samenleving (DCS), Rotterdamse Droogdok Maatschappij Centre of Expertise (RDM) and Rijkswaterstaat. Of these stakeholders interviews were held with RDM and Rijkswaterstaat as main system actors.

#### 1. RDM

Within RDM Centre of Expertise educational institutions, research centres and companies collaborate in order to improve technology education, new knowledge and sustainable innovations, needed for the port and city of Rotterdam. This cooperation takes place in communities of practice in the field of maritime and offshore, logistics and mobility, energy and process technology, new manufacturing and circular and floating constructions. RDM is a centre of expertise of Rotterdam University, recognised and being supported by the Ministry of Education, Culture and Science (OCW). Together with Marconia, as a project that focuses on sustainable urban development, RDM also aims at filling this gap in urban environments. Thus RDM uses Marconia to develop a circular area together with construction companies, creating sustainable neighbourhoods, which means that in the field of energy, raw materials, water and utilities, resources have to be shared.

#### 2. Rijkswaterstaat

Rijkswaterstaat is an independent administrative authority and part of the Dutch Ministry of Infrastructure and the Environment. Their aim is to create a safe, liveable and



connected country. Recently Rijkswaterstaat has developed a new program called ‘start with the Environmental Law’ (omgevingswet). This entails a partnership between the state, county, municipalities and water authorities to ensure that governments but also businesses and citizens can work with the environmental law. In order to develop the content and policy for this law, Rijkswaterstaat has found a partner in Marconia by learning from their experimental process with urban area development.

#### 4.4.3 Results

##### Knowledge creation

The individual commitment is again closely related to the reason for initiation of the project. The municipality and the change agent indicated that they were triggered by the project which created a strong feeling to take part in it. The change agent had a strong general drive to develop and induce new forms of democratic collaboration in which alliances between civil, public and private parties – including surrounding communities – are central: *“and therefore ultimately for me to develop new forms in which you do it democratically, that was what I wanted to do. So that’s what I’m doing. (...) and then I said I’m leading this project, because I think it’s cool and therefore I’m going to experience things which initiatives in many other places in the Netherlands experience too. And I do it with great pleasure, it’s hard work”* (change agent). Furthermore the change agent indicated that the expected newly gained experience was also an important driver of her individual commitment. Accordingly RDM stated that Marconia could be useful in testing their assumptions on circular area development. As regards to the environmental law of Rijkswaterstaat, which indicated to be a demand driven development, this depends on societal needs. This shows that the commitment to create knowledge and the learning of Rijkswaterstaat is closely related to the output a project like Marconia could have.

Albeit the general commitment, Rijkswaterstaat emphasises the importance of the person inside the organisation you are communicating with: *“I think that is very dependent on the person, if you can see what the potential is and if you can see what kind of energy is present and if you’re sensitive to that. (...) So it also depends on how open you are for connections and that again has to do with the job you have and how drilled you are by your organisation”* (Rijkswaterstaat). Here the responsive stance of the change agent was also an important factor in inviting Rijkswaterstaat.

When delineating the project environment, several sources of knowledge were mentioned. Rijkswaterstaat even thought knowledge was the most valuable resource projects like Marconia has. The first important source of knowledge, mentioned by all respondents, was actually each other’s knowledge and experience, i.e. knowledge from the stakeholders. All respondents showed that the other stakeholders could complement the knowledge and experience they lack. This complementarity again creates a process of collective knowledge creation in which the project environment allows for overcoming barriers collectively encountered.

A second closely related source of knowledge is the network each stakeholder provides. All three respondents agreed that opening up each other’s networks stimulates the development of knowledge. This is substantiated by Rijkswaterstaat: *“So I think actively opening up networks and use those, and by continuing to build on a kind of “infrastructure” around an area, in the*



sense of a network, wherein you will continue building, in which the knowledge further accumulates. (...) So you see actually that networks, more networking in this case, is very important for the way my knowledge has developed” (Rijkswaterstaat). As an important example Rijkswaterstaat mentioned the involvement of DCS (see section 4.3.2). Through the connection with DCS, Marconia is not the only project Rijkswaterstaat is working with, thus Rijkswaterstaat has access to much more learning environments which legitimises its involvement with Marconia.

As for the interaction and learning, the stakeholders are just in the beginning of the learning process. Hence all respondents indicated that in the current phase the stakeholders are mainly occupied with exploring what each stakeholder is able to offer and what the needs are: “We must first, as always, explore each other, get to know each other and know what you can expect and what you cannot expect from each other, that is the phase we are in now. We have now scheduled the first meeting and then we look at what path we can follow together, and what is yours, what is ours, what we can do together” (RDM). Here RDM stressed the fact that it should be clear what every stakeholder brings and takes from the collaboration, and this preferably should be in balance. Thus the change agent indicated that the optimal way of learning within the project has not been reached yet: “I think we do not have the optimal form at the moment to do that (learning) in a constructive way. What I'm looking for is that we put our agenda's next to each other, to see everyone's need, plus the opportunities that you can organise from this place, where you can let others join in” (change agent).

Furthermore the change agent felt that she and her team are still the causing party, meaning that they are the ones activating others in participating and delivering input. This results in the change agent functioning as a central party, whereas preferably the change agent would want other stakeholders to interact with each other as well. This could be explained by the lack of collective meetings, as the interaction currently mostly takes place one on one. This initial one on one contact is deemed essential by the change agent in first building trustworthy relations with the stakeholder individually before jointly collaborating: “I think we have spent a lot of time and attention the last few years to prepare the people, the parties individually to work together with us and that takes time, that introducing yourself” (change agent). This individual contact is considered intense by Rijkswaterstaat, who indicated that through intense contact the relationship slowly got more interesting and valuable.

The way the learning process was described by all respondents was explicitly named by RDM as a community of practise. Here all respondents acknowledged that learning functioned as the combining element of the project environment in which the exchange of mutual added value is key. This is shown by the following: “The knowledge that Marconia brings in has to flow to us. For me it's important that we see what's happening, there is something special here, there are all kinds of parties, how are they connected, for us it is important that you have access, that you see what happens and that you can also link it back to the issues we are dealing with” (Rijkswaterstaat). RDM states that in this process it is important to be willing to invest in each other as stakeholders, even when stakeholders in the current phase might not yet be of use. Inherent to a community of practice is collectively tackling a shared problem in which knowledge is open source. However, again the lack of collective meetings is impeding the development of an effective community of practice thus far, according to the change agent.



When looking into the project characteristics, several elements are mentioned by the respondents. First a main finding is that the project environment is experienced as trustworthy. Both Rijkswaterstaat and the change agent indicated that trust is key in collaborating in these kinds of projects. Secondly both system actors confirmed the novelty of the project and especially the spirit inherent to Marconia: *“but what I do see is that they are, and that’s always with something new, there is a lot of enthusiasm, a lot of spirit, there is a lot of brainpower in it when it comes to where we need to go, and how you shape that, and there is experience in developing such projects”* (RDM). Thirdly both system actors shared a feeling of freedom and openness to share new ideas and deliver input into the project.

As for the shared objectives, RDM stated that – delineating a shared context – the stakeholders operating in Marconia all deal with the changing role of the government. Instead of investing in projects like Marconia, the (local) government more and more adopts a directing and facilitating role. Hence RDM mainly described this shared problem – that of the voids left in urban landscape due to the shift away from the welfare state – as a binding element. It became evident from Rijkswaterstaat that the respondent was very aware of this and that the way the system (i.e. government) is currently working might not be that efficient. Moreover all respondents showed a shared vision, enforcing the alignment among each other. All respondents were aware of the novelty of the project which again raised the awareness for approaching area development in a new way.

A main finding was that in order to reach further alignment among the stakeholders, the creation of common understanding is essential. Rijkswaterstaat indicated that they and the change agent did not understand each other from the beginning, but through intensive dialogue common understanding was shaped. Rijkswaterstaat stressed that this common understanding is a necessary requirement for the exchange of knowledge. The change agent stated that common understanding among the stakeholders is again essential in creating a trustworthy project environment and enables to reveal each other’s needs and offers. This common understanding can partly be explained by the mutual interest Rijkswaterstaat and the change agent have: *“this team of people that are on the same subject, saying yes this is what joins us and we find each other here, and that is thus for Rijkswaterstaat and RDM and for me and for DCS, that regional development and how you can think of new financing structures (...) and to ensure that all necessary knowledge and skills are present”* (change agent). The change agent argued that transparency on the individual or organisational interest or ambitions is pivotal in developing sustainable collaboration. Despite the lack of collective meetings, the change agent indicated that there is already a common understanding and shared language, albeit more in a bilateral way.

It became clear that the respondents do not exactly have the same objectives but are connected by a shared challenge: *“I think you don’t all need to have exactly the same goals, but what matters is that you respect the other’s position and that you’re willing to contribute to that position, partly because you too can benefit from it. (...) You can have several objectives but they always connected in one way or another. Of course it’s ideal if everybody wants the same but that’s also a bit of an illusion, (...) we have more or less the same vision, but you have your own preferences in what you can achieve it and that makes it also fun”* (change agent). Here it is important to jointly formulate questions you want to collectively answer and be aware that every stakeholder holds a piece of that answer. Thus all respondents emphasised that the project can



be a shared learning environment, in which different objectives can coexist.

#### Knowledge storage/retrieval

Despite the early phase the project is in, the change agent acknowledged the importance of capturing the lessons learned, which currently happens insufficiently. The change agent indicated that there are ideas to capture the lessons learned in a film format, but it just lacks of adequate time and money to do so: *“I think too little, we do it (capturing and sharing lessons learned) but we do too little. That has to do for us with the lack of time now, because actually you have to do it in a smart way. (...) And I'd really like to have a bag of money to put some film makers and documentary makers on the process because that allows you to organize the continuous reflection on your process. (...) So when it comes to retaining the lessons learned then I think there are beautiful forms and that it really lacks of resources to do it in a good way” (change agent).*

#### Knowledge transfer

In order to get insight into the process of knowledge sharing, first the channels are described. As described before, the initial communication was mainly one on one with the objective to understand and explore the needs and offers other stakeholders have. The change agent emphasised that the collective meetings were too few and the project would develop much faster if such meetings would occur more often. Here Rijkswaterstaat indicated that face-to-face contact was the most effective method: *“I think the real things arise by seeing each other and if you have that as a basis then the elaboration is by mail, (...) I think the real knowledge exchange is face-to-face and the elaboration, accountability, is by mail or in documents” (Rijkswaterstaat).* Rijkswaterstaat notes that in the beginning also informal meetings like having lunch contributed to the mutual understanding and collaboration with Marconia.

More formally, two collective meetings were organised by the change agent and her team. These were organised to get to know the stakeholders and explore the connections. The change agent stressed the importance of these collective meetings because it allows community (of practice) building among the stakeholders. As can be derived from the community of practice concept, the motivation for sharing and receiving knowledge was high. It was recognised by all respondents that the knowledge and expertise each of the stakeholder holds, is considered valuable for them or the project. Rijkswaterstaat again mentioned the importance of networks here, as actively exchanging knowledge allows knowledge from different networks to flow to the project environment.

The absorptive capacity varied among the system actors. On the one hand Rijkswaterstaat was aware of stepping into a new world (i.e. the world of bottom-up initiatives), but the potential project value was recognised early on and the project content was understood by a process of learning-by-doing. The respondent of Rijkswaterstaat indicated that its working attitude already shifted from operating in the ‘old’ system towards more focusing on networking and finding connections as a new way of working (i.e. learning). On the other hand, RDM indicated that the newly created knowledge within the project was easy to understand since they have dealt with similar issues before. Also the change agent stated that – partly due to former municipal experience – the knowledge was understandable, however also new matters are learned which makes the project challenging.





### Knowledge application

When discussing the integration and application of the lessons learned, it was found that this was mostly evident – albeit sparsely and informal – at Rijkswaterstaat. They mainly address the issues encountered at Marconia through agenda-setting: *“Well those are issues (e.g. financing) that Marconia cannot solve, but by addressing them in our organisation (...) I can discuss those issues here again, I can say ‘people we need to talk about funding. Well, why then? Yeah that’s a serious issue, because of this and this reason, we need to talk about it’. We can explore these issues, we have the resources to investigate those issues, to put someone on it to really find out, or connect it to legislation people” (Rijkswaterstaat)*. What is impeding this integration is the organisational structure, as mentioned by Rijkswaterstaat. As the environmental law program is a collaboration of many parties, the respondent has to constantly link back to those parties in order to clarify and justify what he is doing and why.

The change agent indicated that the integration mostly takes place in experience. The embedding of the lessons learned are not that visible in the project itself but can be mainly found in the experience, and thus the changing way of working of the change agent.

### Change agent as leader

Leadership was believed to be best held by multiple people. Both RDM and the change agent stated that it is best to have multiple people that are driving the project. Mobilising and connecting stakeholders was found to be one of the most important competences a leader (or multiple leaders) should have. The change agent stressed that in order to mobilise effectively, one also has to be knowledgeable: *“so it is extremely important that you know well who is actually situated in your surrounding and how you can involve what’s important. And not only what you think is important, but also to make the connection with what they can bring in a good way. So it’s knowledge of people and knowledge of business. (...) And it’s very important to be able to respond to different types of people so you can actually bind many different qualities” (change agent)*. Other important characteristics that a leader should have are persistency, persuasiveness (show stakeholders why they should join), curiosity (dare to explore), have a clear plan and create trust in order for the collaboration to work.





## 5. Analysis

In the analysis chapter a synthesis of the individual cases is provided, in which the results are compared and examined. Based on the KM processes (section 5.1 – 5.5), analysis reveals the main themes found in the cases.

### 5.1 Knowledge creation

#### 5.1.1 *Creative chaos*

In essentially all cases a strong link was found between the individual commitment to create knowledge – i.e. deliver new ideas and input advancing the project – and the origin of the project. As all projects aim for either sustainable or inclusive (or both) objectives, a negative personal stance towards the project was difficult to detect. Nonaka (1994) describes individual commitment as one of the most important components of the creation of new, individual knowledge. In all cases there was an ambitious vision for the project, often proclaimed by the change agent. Furthermore, as all projects deal with novel processes aimed at both content and participatory collaboration, the cases lacked a rigid organisational structure. This lack of rigid organisational structure could explain a degree of autonomy among the system actors since there was no fixed role division with specific expectations. Nonaka et al. (2000) indicate that autonomy increases the commitment of individuals and increases the chance of finding valuable information. Moreover autonomy can stimulate participating parties to create knowledge.

Moreover, together with the flexible organisational structure, the ambitious vision could create a creative chaos – albeit unintentionally – to force the system actors to operate outside their traditional boundaries. A creative chaos is a sense of crisis among participating members which encourages them to transcend existing boundaries and brake down routines and cognitive frameworks in order to tackle problems (Nonaka et al., 2000). The combination of individual commitment and an unstructured organisation could reveal a creative project environment in which knowledge creation is stimulated.

#### 5.1.2 *Socialisation*

Clearly evident from all cases is that knowledge for the project comes from people. The most used knowledge resources were the local community, the stakeholders (e.g. experience and expertise) and networks (i.e. groups of possibly influential people linked to stakeholders). This people-based and experience-related knowledge indicates primarily tacit knowledge is present. Nonaka (1994) shows that knowledge creation starts at individual level by the accumulation of tacit knowledge through experience. The quality of this tacit knowledge is influenced by two factors: the variety of an individual's experience and the knowledge of experience (Nonaka, 1994). For the change agents these factors were often clearly present, more than for the system actors. Through different educational and professional (working) experience, the change agents were often equipped with the right experience to drive such diverse UIPs. Moreover, as drivers of these projects, the change agents have true hands-on, bodily experience with the gained knowledge.

As explicit knowledge resources were hardly mentioned, the main mode of knowledge conversion is socialisation (see section 2.6.1, figure 2.1). In the process of socialisation, tacit



knowledge is converted through shared experience (Nonaka et al., 2000). In all cases it was recognised that every stakeholder holds a 'piece of the puzzle' based on their own knowledge and experience. Nonaka et al. (2000) indicate this tacit knowledge is hard to formalise and space- and time specific. Thus tacit knowledge can only be acquired by shared experience. In the socialisation process individuals mainly empathise with one another which reduces barriers between them (Nonaka et al., 2000). To a much lesser extent the tacit knowledge is made explicit, which can be derived from the low level of storage of the lessons learned in most cases (see section 5.2.1). It is this interaction between tacit and explicit knowledge that induces new knowledge creation, where externalisation allows the tacit knowledge to be articulated and to be shared with others. Thus in the socialisation process mainly experiential knowledge is created: shared tacit knowledge developed through joint hands-on experience (Nonaka et al., 2000). This experiential knowledge is very specific to the project and is hard to grasp, evaluate and share.

Nonaka (1994) shows that although each knowledge conversion process creates knowledge independently – and on an individual level – organisational knowledge creation is reached when there is interaction between the different conversion modes. Although the interaction with stakeholders is recognised as essential and dialogue is the main form of communication, the newly created knowledge is hardly made explicit. This makes moving between the conversion modes difficult. However – in two cases mentioned explicitly, in the other two more implicitly – it was mentioned that learning (by doing) is taking place. Nonaka (1994) shows that this type of learning usually occurs in the internalisation process. This indicates that within UIPs, explicit knowledge is considered less important and learning mainly occurs through the sharing of tacit knowledge. Moreover in all cases the project environment was considered a trustworthy place and learning-by-doing characterised the learning process. In the project environment the stakeholders felt free to share their knowledge. This mutual trust is considered an important requirement for articulating tacit knowledge (Nonaka, 1994). Thus although this trust is present in the project environment, there is no conceptualisation of the tacit knowledge.

### *5.1.3 Shared context*

As shown in section 5.1.2, the importance of the expertise and knowledge from stakeholders and their networks was stressed in all cases. It was emphasized in all cases that collectively, based on inputs from the stakeholders and their networks, knowledge was created and progressed the project. Benefitting from the aggregate of the resources that the stakeholders bring in, available through and derived from the network of relationships, is what Inkpen and Tsang (2005) describe as social capital. As an important dimension they mention the presence of shared goals. From three cases it became evident that not the exact same objectives were pursued. This was not considered an issue as long as they partly overlap. In one case it was stated that the same objectives were pursued, but with different agenda's. Altogether all cases agreed that having diverging objectives is not a problem as long as all stakeholders are transparent about this and there is overlap in interest of the project. The lack of a clear consensus on the objectives was not considered an impediment to the further development of the project. This can be explained by the clear mutual understanding that was present among the stakeholders in all cases, achieved through intense collaboration and dialogue. This mutual understanding often coincided with the stakeholders sharing the same principles or vision; the



sustainable or inclusive aim of the projects was often recognised by all stakeholders.

The conversion of knowledge ought to take place in a certain place, described by Nonaka et al. (2000) as *ba*. *Ba* functions as a shared context in which knowledge is created, shared and utilised. In describing this shared context, Nonaka et al. (2000) set out several types of *ba*, defined by two dimensions of interaction: individual or collective and media or face-to-face (see figure 2.1). *Ba* provides a context for every step in the knowledge creation process, where it is important to build and maintain *ba* in order to facilitate organisational knowledge creation (Nonaka et al., 2000). As clearly evident from all cases, interaction takes place face-to-face and on an individual, bilateral level. This points to an ‘originating’ *ba* which allows for care, trust and commitment within the project environment. In the ‘dialoguing’ *ba* collective, face-to-face interactions are central in which individual mental models can be articulated as concepts (Nonaka et al., 2000). This relation possibly indicates why the lessons learned are hardly articulated: the lack of collective interaction might impede the conversion from tacit to explicit knowledge.

Chou (2005) describes both absorptive capacity (explained in more detail in section 5.3.2) and organisational mechanisms as positively relating to knowledge creation. Here organisational mechanisms are described as: “structural arrangements or a variety of design actions to facilitate interactions and knowledge exchanges among organisational members”. It becomes apparent that such a structural mechanism is absent in the UIPs. Accordingly Chou (2005) states that organisational mechanisms can result in team (i.e. project) learning and can transform individual tacit knowledge into team-level knowledge.

## 5.2 Knowledge storage and retrieval

### 5.2.1 Personalisation strategy

In all cases there was a general awareness that the storage of the lessons learned is an essential aspect of effective project learning. However in the Airborne.bdg case there was some documentation, albeit mainly for internal use. Moreover in the *Zorgverslimming* case it was stressed that documentation is not the way to diffuse the lessons learned, but that they have to be passed on personally. This shows that the knowledge is currently primarily held by the individuals involved in the projects. Accordingly Alavi and Leidner (2001) emphasise the importance of organisational memory (i.e. the created knowledge in the project) in light of effective KM. They consider IT-related systems to have a positive influence on the storage of newly created knowledge. However, besides a clear lack of an IT related infrastructure, the lessons learned are not systematically stored, congruent with the findings of Kasvi et al. (2003). Despite the lack of codification in all cases, it was often emphasised that the lessons learned were indeed communicated albeit in a verbal, face-to-face way.

In the research of Kasvi et al. (2003) besides people, documents were the main source of knowledge. The total absence of documents as information source can be explained by the novelty of the UIP’s content. In the *Zorgverslimming* case the change agent even stated information from books is irrelevant since books always contain out dated information. This prevalence of personal knowledge and interaction points to a – unintentional – personalisation strategy for managing knowledge. In this strategy, knowledge is strictly bounded to individuals



who develop it and consequently the knowledge is shared by personal interaction (Kasvi et al., 2003). As also Alavi and Leidner (2001) indicated, in KM there is a heavy reliance on IT-related tools and explicit knowledge (Kasvi et al., 2003). However all cases revealed that knowledge was hardly shared through electronic means, like e-mail and was always inferior to face-to-face contact. Hansen et al. (1999) state that organisations that effectively use their knowledge, focus on either one strategy predominantly (i.e. personalisation or codification) and use the other as support. This could indicate that if the projects would better document and store their lessons learned, this could enhance the personal storage and transfer of knowledge. Only in the *Zorgverslimming* case, DCS stressed the importance of technology as the main source of knowledge and as a mean to distribute it. Chou (2005) however – congruent with the case results – shows that the knowledge storage capability does not directly affect the individual's ability to utilise available knowledge. It is possible that other, softer factors like collaboration and trust have more impact on knowledge creation than the storage of knowledge.

### 5.3 Knowledge transfer

#### 5.3.1 External ambassadors

In all cases, among almost all respondents, there was a strong motivation to both share and receive knowledge. This can be explained by the knowledge-friendly project environment mentioned in section 5.1.3. Since the context in which knowledge transfer takes place is often mentioned as an important influencing factor (Alavi & Leidner, 2001; Szulanski, 1996), knowledge transfer and the project environment are closely related. Goh (2002) confirms that a (organisational) culture open to cooperation and collaboration enables the transfer of knowledge. In all cases the sharing of knowledge occurred through more informal channels (e.g. having lunch, unscheduled meetings) than formal channels (e.g. committee involvement, collective meetings), where both were considered important in communicating project relevant information. The communication was mainly bilateral and face-to-face, where it was recognised that (more) collective meetings would be more effective in exchanging knowledge. Accordingly, Newell et al. (2008) have demonstrated that social networks and informal dialogues are more efficient in transferring knowledge than IT.

Although both informal and formal channels of knowledge transfer were present, there was no close, tight interface present, as the meetings were mostly unstructured. Inkpen and Dikur (1998) indicate that a narrow and distant interface can be an impediment for learning and knowledge sharing. Thus although there are multiple channels present, there remains a lack of externalisation. Alavi and Leidner (2001) show that this impedes dissemination and leads to deterioration of the created knowledge.

Moreover the significance of personal channels was broadly acknowledged. In three cases it was emphasised that 'knowing the right person, in the right position' was essential in collaborating with system actors. Two change agents showed that when the individual within the system actor you are communicating with is committed to the project (i.e. external ambassadors), close collaboration is much easier. Alavi and Leidner (2001) substantiate that personal channels may be more effective in transferring context-specific, tacit knowledge. Also Cross et al. (2000) showed that people usually prefer to turn to other people rather than documents to obtain information. As the projects often deal with novel ideas and concepts,



personal channels are expected to be the most suitable. Nevertheless the change agent from the Airborne.bdg case stated that knowing one person per stakeholder group or system actor is not sufficient.

As described before (section 5.1.2), the knowledge each stakeholders holds was deemed essential by all respondents, explaining the openness towards exchanging knowledge. Szulanski (1996) showed that knowledge transfer of tacit knowledge is encumbered by lack of absorptive capacity of the recipient, causal ambiguity and an arduous relationship between source and recipient. However, despite the novelty of the projects, the absorptive capacity was relatively high. This means the newly created knowledge was easy to understand for most respondents and was considered relevant. Firstly this was explained by close initial collaboration, leading to alignment among the stakeholders in an early stage. Secondly most respondents had prior knowledge and experience which made it easy for them to understand the knowledge. Especially for the change agents prior knowledge in sectors the system actors were operating in (e.g. municipality), benefitted their collaboration and understanding. Since collaboration and interaction was experienced positively in all cases, an arduous relationship as a barrier to knowledge transfer (Szulanski, 1996) is also refuted. Due to the individual involvement of the stakeholders and a lack of an organised and structured form of collaboration, here the absorptive capacity on individual level is central. Malhotra et al. (2005) demonstrate that absorptive capacity strongly influences the exchange of knowledge among individuals. As it is mainly determined by the individual capability to send and receive information, Chou (2005) shows that an individual's absorptive capacity is also able to affect knowledge creation.

## 5.4 Knowledge application

### 5.4.1. Inertia

For the application of the lessons learned it became evident that a distinction should be made between the integration of lessons learned by change agents and by system actors, and also to take into account the type of system actor. All cases showed that the integration of the lessons learned was a slow and difficult process. This resulted in no real embedding of the lessons learned in any case. From the change agents it became clear that the embedding has a somewhat tacit connotation and can be traced back to their personal experience. It became apparent that, in accordance with learning-by-doing, the change agents adopted the lessons learned in their project tasks and way of approaching the UIP. However the integration by the system actors is most significant as this could lead to up-scaling. Although there was general enthusiasm to integrate the lessons learned, the more classical system actors (e.g. government) showed no real integration.

In two cases, the lack of embedding on the governmental system actor side was explained by the organisational structure. From the Airborne.bdg, Rijkswaterstaat and Zorgverslimming case (see also section 5.3.1) it became clear that having an external ambassador leads to a higher individual absorptive capacity, i.e. the individual system actor is committed to the project and thus understands the relevance of the lessons learned. However these two cases make clear that although the individual absorptive capacity seems to be high, the system actor's organisational absorptive capacity was insufficient. Chan (2011) substantiates this by showing that the vertical flow of knowledge within organisations is difficult due to the





different codes and languages within organisational layers. The other two cases did not specifically address the organisational structure as an impediment but neither showed integration of the lessons learned. DCS on the other hand, as a less classical system actor, showed a clear attempt to embed the lessons learned by actively structuring them into existing agreements (see section 4.3.3).

Another reason for the lack of embedding was the peculiarity of the UIPs, as indicated by the governmental system actors in three cases. Continuing on the findings of Szulanski (1996), the novelty of the projects could create knowledge and lessons learned that contain some degree of causal ambiguity. Winter (1995) shows that causal ambiguity can occur due to the badly understood distinctive features of the new context in which the knowledge is put. As the projects introduce innovative ideas that are not tested or proven yet, it is likely that the system actors do not know what specific use the newly created knowledge could have.

## **5.5 Change agent's leadership**

### *5.5.1 Multiple project drivers*

The importance of having a leader was shared in all cases. However all cases stressed the need for having multiple leaders within the UIPs. Instead of having one leader, the cases showed a strong need for more individuals, truly driving and supporting the project. The aspect of having multiple leaders was clarified by the emphasis on the team behind the change agent as an important source of knowledge. In three cases it was stated that the change agent was not acting alone and needed the input of its team, often existing of individuals with varying backgrounds. The notion of having multiple leaders is not consistent with the central and dominant role given to project managers, as described by Wiewiora et al. (2009). In all cases it became evident that the project strength is based on the collective knowledge and expertise. In the Marconia case it was even stated that the change agent aimed for an interlinked web of stakeholders in which the change agent does not have to be central.

The connecting and mobilising character, also identified by TwentyOne as an important aspect, is congruent with the insights of Fowler (2014). All cases revealed awareness for close collaboration with different (institutional) actors, confirming a change agent's need for collaboration-supporting competencies. Considering change agents as project managers, Wiewiora et al. (2009) corroborates the constant communication a project manager has to sustain with different stakeholders in order to obtain and transfer knowledge.

Furthermore all change agents were fully aware of the novelty and peculiarity of the projects. As described by Fowler (2014), the change agent acknowledged that the projects induced a process of 'changing the rules of the game', in which the incentive structures of the involved actors changed as well. They were aware of addressing the mutual added value each stakeholder could have and vice versa. Other than Fowler (2014) stated, in these cases leadership was not conflict-orientated. All cases seemed to be more solution driven and considered co-creation as a basis for collaboration. Another important attribute is trust, described by multiple authors (Fowler, 2014; Dhanaraj et al., 2004; Levin & Cross, 2004; Inkpen & Tsang, 2005). This was also apparent from the cases, where trust seemed to be a necessary condition for the project environment to be participatory and to stimulate interaction. The need for multi-actor entry points was also addressed in almost all cases. As two cases were part of





DCS – assuring connection to a wider, national network – this helped to put the local project in a system perspective. Furthermore the Airborne.bdg case showed that they were part of an international network of similar urban projects, which again could put their UIP in a broader framework.

The awareness of being knowledgeable indicates that the change agents were mostly aware of the existing governance structure. Because often governmental system actors were involved and due to prior relevant experience, the change agent were aware of the field they were operating in. Furthermore the high absorptive capacity, the common understanding and positive experienced communication indicate that the change agents were able to ‘speak different languages’ in order to understand and bridge different stakeholders.



## 6. Conclusion

This research considers UIPs as valuable learning environments, in which change agents and system actors come together in a distinctive, participatory process. It is assumed that each UIP is able to contribute to a sustainable urban transformation due to its sustainable and/or inclusive objectives. To reach this impact, the innovations inherent to the UIPs not only have to lead to business-to-business collaborations but have to lead to more people benefitting from the innovation and system change on city scale. In this process, system actors play an important role for the UIPs in creating a supporting environment.

The collective action inherent to the UIPs takes place in experimental environments that result in valuable lessons learned for both change agents and system actors. These lessons learned often suggest transformative changes in current systems. In order for the lessons learned to be adopted by the system actors, organising and distributing the lessons learned effectively within the project itself is key. Thus in order to reach effective project learning, the created knowledge and project experience has to be organised and distributed among all system actors, a process in which change agents play a pivotal role.

In order to examine how effective learning could be reached, the concept of KM is used as a heuristic model. Based on KM literature a conceptual model is developed. The conceptual model indicates what enabling factors are necessary to reach effective learning. Effective KM eventually leads to a better distribution of the lessons learned and consequently leads to effective project learning. Four cases – representing four UIPs – are examined based on the conceptual model. The central research question to be answered in this chapter is:

*How can learning be understood within urban innovation projects using knowledge management?*

The research question is answered according to the KM processes. Per process the role of knowledge within UIPs is explained, after which the role and function of the change agent is clarified.

The knowledge creation in UIPs occurs through direct, social interaction where individual commitment is clearly present. The knowledge creation process is characterised by socialisation, based on tacit, experience-based knowledge. The creative chaos that seems to be present is supporting the knowledge creation as no real reference for this novel knowledge is present. Thus the creative and novel content and structure of the UIPs – which differs from projects often described in the context of KM or project-based organisations – stimulates the knowledge creation process. The learning process within UIPs shows that having different objectives is not necessarily impeding knowledge creation. KM suggests however to establish shared objectives in order to stimulate the knowledge creation process. As tacit knowledge is often embedded in personal beliefs and thus diffusion is difficult, shared meaning has to be created in order to reach mutual understanding. Since tacit, experience-based knowledge is prevalent, KM suggests a personalisation strategy. Moreover the knowledge creation within the UIPs can be amplified when the tacit knowledge is articulated.

The role of the change agent becomes apparent by showing that they are able to mobilise and connect the necessary stakeholders and have understanding about the project and the individual stakeholders. Hence the change agents succeed in establishing a project



environment in which knowledge is easily shared and system actors are involved and challenged to create knowledge.

As for the storage of the created knowledge, this research indicates the UIPs clearly lack the articulation of knowledge into a repository. Although the knowledge is often stored in the heads of the change agents and system actors, the organisational memory – i.e. collectively created knowledge and lessons learned – is absent. Thus the change agents function as the embodiment of the organisational knowledge. The knowledge storage process is related to the knowledge creation process, as in the knowledge creation process making tacit knowledge explicit is evidently omitted.

The role of the change agent here falls short as they hardly make an effort to develop such an infrastructure. This research shows that the codification strategy is not better per se, but it could enhance the personalisation strategy, therefore making the knowledge storage and retrieval process more effective. Regarding the participatory process, the great variety of stakeholders is able to benefit from an organised storage of the lessons learned.

The process of knowledge transfer could be improved by creating multiple and divergent channels. Currently the cases show mainly informal and personal channels, which leads to a lack of formal coding and thus widespread diffusion of the lessons learned. The knowledge sharing process mainly focuses on bilateral, face-to-face meetings and dialogues. This seems to be stimulating the common understanding and alignment among the stakeholders, but it does not seem sufficient for reaching knowledge application. As stressed in most cases, multiple collective meetings would benefit the knowledge sharing and possible articulation of the lessons learned. Such a close, organised interface stimulates the sharing of knowledge.

The role of the change agents becomes apparent through actively seeking multiple – more formal – channels. The presence of more and diverging channels again stimulates the transfer of knowledge.

The knowledge application is mainly dependent on integration outside the project boundaries, i.e. within the system actor's organisations. The change agents show an integration of the lessons learned by adapting their way of working or simply approach it as a new experience. As for the system actors – besides DCS – integration was absent. Thus there is no embedding or institutionalisation of the lessons learned, leading to the created knowledge having no effect yet in the system actor's organisation.

All in all the change agents enable the mobilisation of the necessary stakeholders and the creation of a project environment which stimulates knowledge exchange. Through active dialogue they induce interaction, albeit still mainly bilateral. The change agents can improve learning by developing an infrastructure that captures the lessons learned. Furthermore this helps to make the prevalent tacit knowledge more explicit. In order to diffuse these lessons learned among the system actors, the change agents have to develop various, mutually supportive channels. These endeavours encourage the organisation and distribution of the lessons learned, which consequently induces the system actors' uptake of the lessons learned and their application in their parent organisations.



## 7. Discussion

In the discussion chapter various parts of the research are reflected on. Section 7.1 discusses the societal and scientific contribution of the research, complemented with avenues for further research. Section 7.2 reviews the conceptual model and section 7.3 shows the limitations of the research.

### 7.1 Contribution of the research

The nature of the projects central in this research differs from projects central in most literature, which mainly concentrate on projects established by project-based organisations (Srikantaiah et al., 2010; Koskinen & Ajmal, 2008). In such cases, the project originates from a parent organisation and consists of a project team in which familiarity and a strong sense of relationship is present among the project members (Srikantaiah et al., 2010). The UIPs central in this research lack such coherence as most projects contain distinctive collaborations, involving a variety of stakeholders who have never cooperated before. Such collaborations are considered necessary in order to address to sustainable or inclusive problems the UIPs try to tackle. Furthermore the projects often do not clearly originate from a parent organisation and thus have a more independent nature. Hence this research reveals a type of project that is not previously discussed in literature. This research thus reveals the role of knowledge and its management in a different context, extending KM literature. However, since this research looked into the learning process of the UIPs, further research may conduct comparative analyses on UIPs and – more classical – projects from project-based organisations in order to clearly define UIPs.

The enablers of KM are mostly described in the context of large organisations or project-based organisations, implementing grand KM systems. Since the UIPs did not implement actual KM, the findings do not show KM enablers but show factors that stimulate the learning within the UIPs. Having external ambassadors or having multiple leaders for example, were factors that contributed to the knowledge transfer and leadership in the UIPs respectively. Therefore these factors extend the current KM and change agent literature. Moreover this research extends the development of enablers for KM in small and medium enterprises as described by Wong (2005). Like SMEs, the UIPs showed a lack of resources (i.e. time, financial and human resources). For example, this resource scarcity shows the inability to develop a (technological) infrastructure to clearly articulate the newly created knowledge and integrate the lessons learned. The UIPs are not able to put an advanced technological system in place that is often assumed in KM literature (Snider & Nissen, 2003; Chun et al., 2008). Furthermore as a technological infrastructure is often assumed in KM literature, this research contributes to a better understanding of how the social side of KM could support a better organisation of knowledge within a diverse group of stakeholders. As became evident from the findings, the UIPs mainly adopt social mechanisms to create, store and share their knowledge. This reliance on social mechanisms revealed the lack of communication and information technologies in storing and diffusing knowledge.

Furthermore Bresnen et al. (2003) show that most research on project-based learning is focused on product innovation. Learning in product innovation processes often follows a convergent rationale, where different sources of knowledge are integrated in a single product or service. This results in the knowledge being more easily captured and transferred (Bresnen et al., 2003). However the UIPs, like the cases central in Bresnen et al. (2003), tend to address



more process innovations, where the project procedure itself can also be considered innovative. Bresnen et al. (2003) stress that learning in process innovation is tacit, intangible and context-specific, like changes in work practices, roles, responsibilities and values. As a result this learning is difficult to measure and makes externalisation of the (tacit) knowledge hard. This could give the knowledge that is created within the UIPs a momentary and esoteric character which consequently makes embedding within the system actors' organisations problematic. Further research can therefore focus on methods to measure the learning in the context of UIPs. As UIPs inherently steer at changing the system, looking into the external environment can complement this research.

In the literature the importance of an organisational context or culture that facilitates learning is widely acknowledged (Martins & Terblanche, 2003; Oliver & Kandadi, 2006). However such an organisational culture is – due to its distinctive and unstructured nature – not present in the UIPs. Koskinen and Ajmal (2008) show that an organisation's culture is the basis for its management system and practices, and moreover is able to stabilise the organisation's methods of operation. The awareness of such a culture among its members leads to the identification and recognition of the tacit assumptions and beliefs embedded in the organisation (Schein, 2000). Other than ba, a concise culture thus allows for efficient knowledge creation and transfer. Future research could aim at investigating how such a culture can be created; how to move from ba to a more prescriptive culture in which its members are stimulated and motivated to exchange and structure knowledge effectively.

Like the nature of the UIP itself, this research contributes to a better understanding of the nature of the person leading or driving the project. It is broadly accepted that there needs to be an individual, often described as champion, to facilitate the KM implementation. In this research their role and function was put into the context of project learning, not in the context of KM implementation. Hence their perceived characteristics and competences may vary with the competences of champion or project managers. Especially considering the distinctive nature of the project, both the content and the participatory collaboration, indicate that the change agent's potential in driving UIPs is open for further research.

## **7.2 Review of the conceptual model**

The perspective on knowledge is noteworthy when discussing the conceptual model. This is important since different perspectives on knowledge result in different perceptions of knowledge management (Carlsson et al., 1996). Generally, knowledge can be considered either a commodity/object that can be transferred to others, or it can be viewed more as a (socially created) process (Alavi & Leidner, 2001; Koskinen & Ajmal, 2008). In the process view, interpersonal social relations create knowledge and stimulate its transfer. Since knowledge creation, but also knowledge storage and IT-related mechanisms are considered important aspects of KM, KM inherits both perspectives. In the case of this research, in which knowledge is considered mainly as a process, KM ought to focus on the knowledge flow and the processes of knowledge creation, sharing and distribution (Alavi and Leidner, 2001). Based on the results, which clearly revealed a focus on tacit knowledge, the conceptual model could focus more on the knowledge creation and transfer processes, by for example developing more enablers for these processes. For example when reflecting on the various processes, Wiig (1993) divides the knowledge creation process (i.e. knowledge building) into five main activities: obtain, analyse,



reconstruct/synthesise, codify and model, organise knowledge. As the knowledge creation part plays a significant role in the case of UIPs, the conceptual model could focus more on this process by looking into these necessary activities more thoroughly. Especially the organisation of knowledge could benefit the learning within the UIPs. Wiig (1993) shows that the knowledge is organised according to an established organisational framework. This again could stimulate the UIPs to become more structured and organised as a whole.

Furthermore the conceptual model lacks some sort of evaluation of the knowledge. As the UIPs operate in experimental spaces and deal with tacit knowledge from different stakeholders, it could be helpful to have a moment of reflection. Bukowitz and Williams (2000) address this issue by devoting an important part of the KM cycle to the 'assess' step. After knowledge has went through an individual cycle of understanding, using, learning and contributing, the knowledge is assessed on the group or organisational level. Here assessment entails the evaluation of the knowledge and demands the organisation to define mission-critical knowledge and to decide whether the knowledge is essential for future knowledge needs (Bukowitz & Williams, 2000). As a lot of knowledge is created within the UIPs, based on various stakeholders' experience, it could be helpful to integrate such an assessment process into the conceptual model. This again aids the structuring and organising of the knowledge which stimulates the distribution of the lessons learned to the system actors. Irrespective of the different perspectives on knowledge and KM, the insights in different KM models of different authors could improve the conceptual model in this research.

Lastly, although the KM processes are shown as being independent and sequential, it is emphasised that this is a simplification as it is possible for the processes to function in parallel. The sequential nature of the conceptual model is used in order to gain insight in the learning by looking into each process individually. Since the focus in this research is on understanding the learning process per KM process, the direction of the processes is considered less important. Furthermore Dalkir (2005) shows that in literature all KM models have a cyclic nature, albeit more implicitly. Hence the conceptual model assumes the knowledge creation process within UIPs is a continuous process. For example the application of the lessons learned was the most difficult process, meaning this process demands for new knowledge to be created in order to induce integration.

### **7.3 Limitations**

The main limitations of the research can be traced back to the methodology. First the knowledge application process was insufficiently addressed. As the application of the lessons learned was ought to take place outside the project boundary, i.e. within the system actor organisations, interviewing only one system actor respondent per organisation is not enough. The UIPs deal with system actors as organisations, indicating that in order to assess the knowledge application process, more research should be conducted within the system actor organisations. This leads to more interviews within the system actors. Another implication that could have influenced the lacking application process was the early stage some projects were in. Kajjansi and Marconia are both relatively young, which can contribute to the lack of the system actor's integration of the lessons learned.

Secondly two respondents from the Kajjansi case were not able to conduct an interview





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through skype. This resulted in two interviews being conducted via e-mail. These written answers were less comprehensive than in the case of a skype interview.

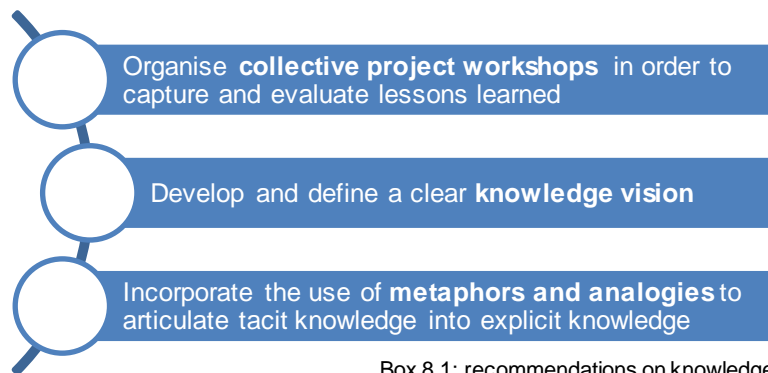


## 8. Implications for UIPs

Based on the analysis of the cases in chapter 5, this final chapter provides recommendations for improving the project learning in UIPs. As MVO Nederland developed a platform (TwentyOne) in which change agents and their UIPs are connected, it is assumed that MVO Nederland will benefit from these insights as well. TwentyOne contributes to the inter-project learning and the recommendations could assist TwentyOne in supporting future change agents and their UIPs. Thus the recommendations, divided over the four KM processes, are directed to the UIPs. In particular the change agents are advised how they could use the insights from this research to encourage effective project learning.

### Knowledge creation

In box 8.1 the three main points of attention are summarised that a change agent can use to improve the knowledge creation process. Below these points are explained in more detail.



Box 8.1: recommendations on knowledge creation process

First the UIP structure indicates the need for systematic organisation. For UIPs to systematically manage their created knowledge, the projects themselves have to be systematically managed as well. Based on Kasvi et al. (2003), it is proposed to systematically organise project workshops that update the content of two project documents: the project plan and the team contract. The project plan contains project knowledge like project definitions, activities and results. The team contract entails organisational knowledge like experiences and captures the lessons learned. Besides the need for externalisation, this step also stresses the importance of evaluation. During every project workshop the knowledge and lessons learned are assessed which could reveal the relevance of the created knowledge to all stakeholders.

Furthermore it is important for the change agent to create a vision that binds all project stakeholders. As was seen from the findings, having shared objectives was not obligatory for effective project learning. Hence this vision should be aimed at the knowledge that has to be created. This knowledge vision expresses what kind of knowledge the project needs and what knowledge it has to create in what specific domain (Nonaka et al., 2000).

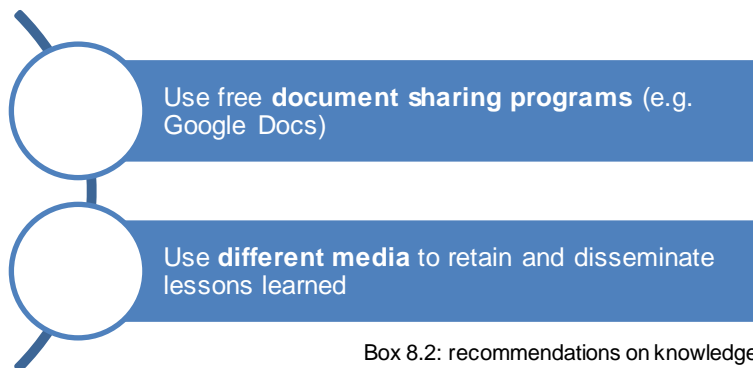
In the process of knowledge creation, Nonaka (1994) emphasise the interplay between tacit and explicit knowledge. In the cases central in this research, it became evident that tacit knowledge is the primary form of knowledge used and created. Making the tacit knowledge explicit is deemed essential in articulating and diffusing the hands-on and context-specific



knowledge. In order to encourage this conversion, Nonaka (1994) suggests the use of metaphors. The use of metaphors enables one to experience a new behaviour by making inferences from another one's behaviour. Using metaphors assumes a degree of imagination and intuitive learning through symbols instead of the combination of common attributes (Nonaka, 1994). The use of metaphors can be incorporated in the project workshops described before. Here the change agents could map and visually depict the created knowledge through metaphors. The creative and cognitive process of using metaphors that relate concepts that are far away in an individual's memory, matches the distinctiveness of UIPs. Consequently the contradictions inherent to metaphors can be overcome by the use of analogies, which enable the reduction of ambiguity by highlighting the similarity of two different issues (Nonaka, 1994). In this creative process the tacit knowledge of all stakeholders can be bridged by finding common ground.

### Knowledge storage and retrieval

In box 8.2 the two main points of attention are summarised that a change agent can use to improve the knowledge storage and retrieval process. Below these points are explained in more detail.



Box 8.2: recommendations on knowledge storage and retrieval process

From the knowledge creation process it already became apparent that externalisation of tacit knowledge is an essential step in creating knowledge. Once knowledge is made explicit, it should be structurally organised in the knowledge storage process. Currently the knowledge is mainly stored in the heads of the stakeholders of the UIPs where the change agent functions as the embodiment of the organisational memory. Accordingly, the change agents would benefit from a technological structure that assists in storing the created knowledge and lessons learned. This would prevent knowledge loss and stimulates the diffusion and organisation of the lessons learned. Moreover if the lessons learned are stored, the stakeholders can easily retrieve them. As the UIPs lacked resources on many levels, the change agents could simply use a free document sharing program like Google Docs. This platform allows people to simultaneously work on shared documents. Such a program could help all stakeholders to articulate their knowledge and lessons learned, making sure they are not getting lost. Moreover every stakeholder has access to this program, stimulating exchange and diffusion of knowledge.

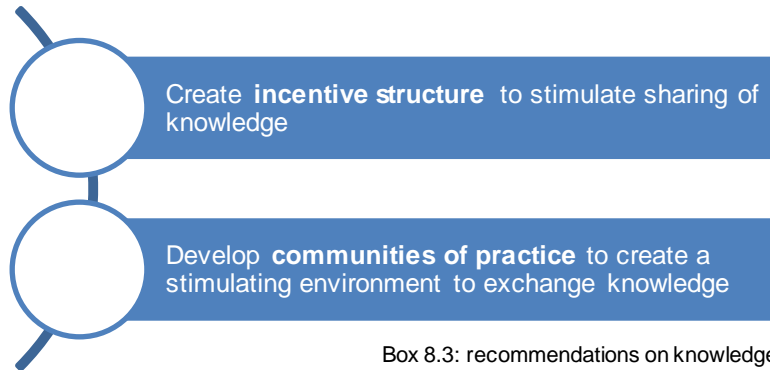
Another way of storing and diffusing the lessons learned was the use of media like film and books, as mentioned by two change agents. The lessons learned could be made visible through storytelling in the form of a book or through a short film or documentary. It was



mentioned that this would allow for retaining the lessons learned and allow for a continuous reflection of the project process.

### Knowledge transfer

In box 8.3 the two main points of attention are summarised that a change agent can use to improve the knowledge transfer process. Below these points are explained in more detail.



Box 8.3: recommendations on knowledge transfer process

A stimulating factor for the transfer of knowledge – also clearly acknowledged by the change agents – was the establishment of more formal channels like collective meetings. When all stakeholders involved in UIPs are together, this would speed up the project learning. In order to organise such collective meetings, the concept of project workshop discussed in the knowledge creation part, can be elaborated on. Logically when all stakeholders are present, the project workshops can speed up alignment among the stakeholders with respect to project definitions and activities. Furthermore experiences can easily be shared and the capturing of lessons learned becomes more effective.

As trust and motivation to share knowledge seemed to be present, change agents could focus on creating an incentive structure in order to encourage knowledge exchange. Considering the scarce resources of the UIPs, change agent could build on other than financial incentives, like the added value the UIP has for the respective system actors. By clearly showing what benefits the UIP could have, the system actors may be stimulated to share their knowledge. One change agent showed this kind of approach by stating that one has to ‘talk about gifts’ when talking to system actors. This means that when approaching system actors, you clearly have to show what the UIP’s value is for them.

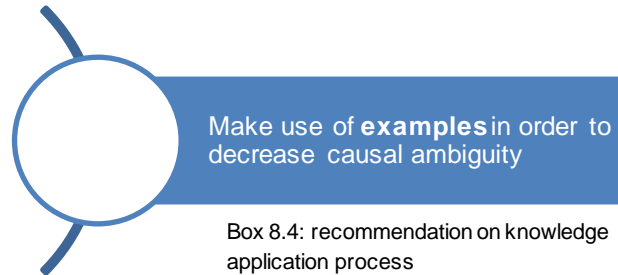
Besides the development of formal channels, the change agents could focus on the creation of communities of practice (see section 2.6.1) – already implicitly done in most cases. An informal network like a community of practice could emphasise mutual learning and stimulate knowledge exchange. Although different objectives could coincide, often a common sustainable or inclusive goal was pursued. A community of practice also demands a certain commitment, wherein participation is fuelled by trust, interest, professionalism and ethical behaviour (Dalkir, 2005). Lastly a shared workspace that allows for a shared repertoire, is an important aspect. As the structure of UIPs is often vague and the ability to gather all stakeholders might pose some difficulties, a virtual workspace could be a solution. However all cases indicated that face-to-face communication was preferred, indicating real time exchange is more effective. Hence a virtual workspace could function as a supportive channel to the face-to-face approach. As the design of



communities of practice occurs organically, social structures determine the course. Here it is important for the change maker to focus on the added value the UIP could have for all respective system actors. Moreover they should aim to organise continuing activities that support learning.

### Knowledge application

In box 8.4 the main point of attention is summarised that a change agent can use to improve the knowledge application process. Below this is explained in more detail.



The application of the lessons learned into the system actor's organisation leads to institutionalisation and eventually to up-scaling. However it became evident that this is not a straightforward task considering the organisational structure and its low absorptive capacity (see section 5.4.1). Thus this makes clear that the change agent is fairly unable to tackle this issue, as the change agent does not operate in the system actor's organisation. They could however, make sure the lessons learned are understandable, i.e. eliminate the causal ambiguity of the created knowledge as much as possible. As mentioned by change agents in multiple cases, the use of examples can be of use here. Examples could entail other, similar UIPs which have shown to have impact or other projects conducted by the change agent. Here the importance of TwentyOne emerges, as this platform allows for such exchange of examples.



## 9. References

- Ajmal, M. M., & Koskinen, K. U. (2008). Knowledge transfer in project-based organizations: an organizational culture perspective. *Project Management Journal*, 39(1), 7-15.
- Alavi, M., & Leidner, D. E. (2001). Review: KM and KM systems: Conceptual foundations and research issues. *MIS quarterly*, 107-136.
- Argote, L. (2012). *Organizational learning: Creating, retaining and transferring knowledge*. Springer Science & Business Media.
- Argote, L., Beckman, S. L., & Epple, D. (1990). The persistence and transfer of learning in industrial settings. *Management science*, 36(2), 140-154.
- Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management science*, 49(4), 571-582.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Bresnen, M., Edelman, L., Newell, S., Scarbrough, H., & Swan, J. (2003). Social practices and the management of knowledge in project environments. *International journal of project management*, 21(3), 157-166.
- Bryman, A. (2008). *Social Research Methods*. Third edition, Oxford University press.
- Bukowitz, W., & Williams, R. (2000). *The knowledge management fieldbook*. London: Prentice Hall.
- Bulkeley, H., Broto, V. C., Hodson, M., & Marvin, S. (2010). *Cities and low carbon transitions*. Routledge.
- Caldwell, R. (2001). Champions, adapters, consultants and synergists: the new change agents in HRM. *Human Resource Management Journal*, 11(3), 39-52.
- Carlsson, S. A., El Sawy, O., Eriksson, I. V., & Raven, A. (1996). Gaining Competitive Advantage Through Shared Knowledge Creation: In Search of a New Design Theory for Strategic Information Systems. *ECIS*. (pp. 1067-1076).
- Chan, P. (2011). Implementing knowledge management. *Journal of business and economics research*. Volume 2, number 5.
- Chou, S. W. (2005). Knowledge creation: absorptive capacity, organizational mechanisms, and knowledge storage/retrieval capabilities. *Journal of Information Science*, 31(6), 453-465.
- Chun, M., Sohn, K., Arling, P., & Granados, N. F. (2008). Systems theory and KM systems: The case of Pratt-Whitney Rocketdyne. In *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual* (pp. 336-336). IEEE.





- Church, C. & Elster, J. (2002) *The Quiet Revolution* (Birmingham: Shell Better Britain).
- Cijsouw, R., & Jorna, R. (2003). Measuring and mapping knowledge types. In *Dynamics and Change in Organizations* (pp. 215-243). Springer Netherlands.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152.
- Cross, R, Parker, A and Borgatti, S (2000) A bird"s-eye view: Using social network analysis to improve knowledge creation and sharing. "Knowledge Directions", 2(1), 48-61.
- Dalkir, K. (2005). Knowledge management in theory and practice. *McGill University*.
- Davenport, T. H., De Long, D. W., & Beers, M. C. (1998). Successful knowledge management projects. *MIT Sloan Management Review*, 39(2), 43.
- DeTienne, K. B., Dyer, G., Hoopes, C., & Harris, S. (2004). Toward a model of effective knowledge management and directions for future research: Culture, leadership, and CKOs. *Journal of leadership & organizational studies*, 10(4), 26-43.
- Dhanaraj, C., Lyles, M. A., Steensma, H. K., & Tihanyi, L. (2004). Managing tacit and explicit knowledge transfer in IJVs: the role of relational embeddedness and the impact on performance. *Journal of International Business Studies*, 35(5), 428-442.
- Disterer, G. (2001). Individual and social barriers to knowledge transfer. In *System Sciences, 2001. Proceedings of the 34th Annual Hawaii International Conference on* (pp. 7-pp). IEEE.
- Drayton, W. (2006). Everyone a changemaker: Social entrepreneurship's ultimate goal. *innovations*, 1(1), 80-96.
- Easterby-Smith, M., Lyles, M. A., & Tsang, E. W. (2008). Inter-organizational knowledge transfer: Current themes and future prospects. *Journal of management studies*, 45(4), 677-690.
- Egbu, C. O. (2004). Managing knowledge and intellectual capital for improved organizational innovations in the construction industry: an examination of critical success factors. *Engineering, Construction and Architectural Management*, 11(5), 301-315.
- Ernstson, H., Barthel, S., Andersson, E., & Borgström, S. T. (2010). Scale-crossing brokers and network governance of urban ecosystem services: the case of Stockholm. *Ecology and Society*, 15(4), 28.
- Fahey, L., & Prusak, L. (1998). The eleven deadliest sins of knowledge management. *California management review*, 40(3), 265-276.
- Flick, U. (2014). *An introduction to qualitative research*. Sage.
- Fowler, A. (2014). Innovation in institutional collaboration: the role of in



- Frey, R.S. (2001). Knowledge management, proposal development, and small businesses. *The Journal of Management Development*. Vol. 20 No. 1, pp. 38-54.
- Goh, S. C. (2002). Managing effective knowledge transfer: an integrative framework and some practice implications. *Journal of KM*, 6(1), 23-30.
- Gold, A. H., Malhotra, A. & Segars, A.H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18(1), 185-214.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic management journal*, 17(S2), 109-122.
- Hackbarth, G. (1998). The impact of organizational memory on IT systems. *AMCIS 1998 Proceedings*, 197.
- Hamel, G. (1991). Competition for competence and inter-partner learning within international strategic alliances. *Strategic Management Journal*, 12, Summer Special Issue, 83–103.
- Hansen, M. T., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge?. *The knowledge management yearbook 2000–2001*, 55-69.
- Holtham, C., & Courtney, N. (1998). The executive learning ladder: a knowledge creation process grounded in the strategic information systems domain. *AMCIS 1998 Proceedings*, 199.
- Iacono, J. C., Brown, A., & Holtham, C. (2011). The use of the case study method in theory testing: the example of steel e-marketplaces. *The Electronic Journal of Business Research Methods*, 9(1), 57-65.
- Ichijo, K., von Krogh, G. & Nonaka, I. (1998). Knowledge enablers. In G. von Krogh, J. Roos & D. Kleine (eds.). *Knowing in Firms: Understanding, Managing and Measuring Knowledge* (pp. 173-203). Gateshead: Athenaem Press.
- IIRR (International Institute for Rural Reconstruction). (2000). Going to Scale: Can we bring more benefits to more people more quickly? IIRR Workshop, Silang, PH.
- Inkpen, A. & Dikur, I. (1998). Knowledge management processes and international joint ventures. *Organisation science*. (9:4). pp. 454-468.
- Inkpen, A. C., & Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of management review*, 30(1), 146-165.
- Jorna, R. J. (2002). Organisational Forms and Knowledge Types: a cognitive multi-actor approach. *Australasian Journal of Information Systems*, 10(1).
- Kang, M., & Kim, Y. G. (2010). A multilevel view on interpersonal knowledge transfer. *Journal of the American Society for Information Science and Technology*, 61(3), 483-494.



- Kasvi, J. J., Vartiainen, M., & Hailikari, M. (2003). Managing knowledge and knowledge competences in projects and project organisations. *International journal of project management*, 21(8), 571-582.
- King, W. R. (2009). *Knowledge management and organizational learning* (pp. 3-13). Springer US.
- Ko, D. G., Kirsch, L. J. and King, W. R. (2005). Antecedents for knowledge transfer from consultants to clients in enterprise system implementations. *MIS Quarterly*, 29, 59–85.
- Kotnour, T. (1999). A learning framework for project management. “*Project Management Journal*”, 30(2), 32-38.
- Lane, P. J., & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic management journal*, 19(5), 461-477.
- Latha, A., Suresh, J.K., and Mahes, K. (2010). Knowledge management in project: methodology and experience. In *Convergence of project management and knowledge management* (pp. 145-174). Scarecrow Press.
- Levin, D. Z., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management science*, 50(11), 1477-1490.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14 , 319–340.
- Lo Iacono, V., Symonds, P., and Brown, D.H.K. (2016). Skype as a Tool for Qualitative Research Interviews. *Sociological Research Online*. 21(2)12.
- Lundvall, B. (2000). The Learning Economy: Some Implications for the Knowledge Base of Health and Education Systems. In KM in the Learning Society. *Education and Skills*.
- Malhotra, A., Gosain, S., Sawy, O.A. (2005). Absorptive capacity configurations in supply chains: gearing for partner-enabled market knowledge creation. *MIS Quarterly* 29(1). 145–87.
- Martins, E. C., & Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. *European journal of innovation management*, 6(1), 64-74.
- McCormick, K., Anderberg, S., Coenen, L., & Neij, L. (2013). Advancing sustainable urban transformation. *Journal of Cleaner Production*, 50, 1-11.
- McElroy, M. W. (2008). *Social footprints: Measuring the social sustainability performance of organizations* (Doctoral dissertation, University of Groningen).
- Nevens, F., Frantzeskaki, N., Gorissen, L., & Loorbach, D. (2013). Urban Transition Labs: co-creating transformative action for sustainable cities. *Journal of Cleaner Production*, 50, 111-122.



- Newell, S, Goussevskaja, A, Swan, J, Bresnen, M and Obembe, A. (2008). Interdependencies in Complex Project Ecologies: The Case of Biomedical Innovation. *Long Range Planning*, 41(1), 33-54.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, 5(1), 14-37.
- Nonaka, I. & Takeuchi, H. (1995). The knowledge Creating Company. *Oxford University Press*, Oxford.
- Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. *Long range planning*, 33(1), 5-34.
- Oliver, S., & Reddy Kandadi, K. (2006). How to develop knowledge culture in organizations? A multiple case study of large distributed organizations. *Journal of knowledge management*, 10(4), 6-24.
- Organisation for Economic Co-Operation and Development (2000). KM in the Learning Society. *Education and Skills*.
- Pentland, B. T. (1995). Information systems and organizational learning: the social epistemology of organizational knowledge systems. *Accounting, Management and Information Technologies*, 5(1), 1-21.
- Prencipe, A., & Tell, F. (2001). Inter-project learning: processes and outcomes of knowledge codification in project-based firms. *Research policy*, 30(9), 1373-1394.
- Project Management Body of Knowledge (PMBOK® GUIDE). (2008). In *Project Management Institute*.
- Ragin, C. C. (1994). Constructing social research.
- Reagans, R., & McEvily, B. (2003). Network structure and knowledge transfer: The effects of cohesion and range. *Administrative science quarterly*, 48(2), 240-267.
- Rosa, M. L., & Weiland, U. E. (2013). *Handmade Urbanism: From community initiatives to participatory models*. Jovis Verlag.
- Rotmans, J., van Asselt, M., & Vellinga, P. (2000). An integrated planning tool for sustainable cities. *Environmental impact assessment review*, 20(3), 265-276.
- Scarborough, H., Swan, J., Laurent, S., Bresnen, M., Edelman, L., & Newell, S. (2004). Project-based learning and the role of learning boundaries. *Organization Studies*, 25(9), 1579-1600.
- Schein, E.H. (2000). Sense and nonsense about culture and climate. In N. M. Ashkanasy, C. P. M. Widerom, & M. F. Peterson (Eds.), *Handbook of organizational culture and climate* (pp. xxiii–xxx). Thousand Oaks, CA: Sage Publications.



- Schumpeter, J. A. (1983). *The Theory Of Economic Development*. New Brunswick, NJ: Transaction Inc.
- Seyfang, G., & Smith, A. (2007). Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental politics*, 16(4), 584-603.
- Simonin, B. L. (2004). An empirical investigation of the process of knowledge transfer in international strategic alliances. *Journal of international business studies*, 35(5), 407-427.
- Snider, K. F., & Nissen, M. E. (2003, June). Beyond the body of knowledge: A knowledge-flow approach to project management theory and practice. Project Management Institute.
- Srikantaiah, T. K., Koenig, M. E., & Al-Hawamdeh, S. (2010). Convergence of project management and knowledge management. *Scarecrow Press*.
- Stephens, J. C., Hernandez, M. E., Román, M., Graham, A. C., & Scholz, R. W. (2008). Higher education as a change agent for sustainability in different cultures and contexts. *International Journal of Sustainability in Higher Education*, 9(3), 317-338.
- Stonehouse, G.H. & Pemberton, J.D. (1999). Learning and knowledge management in the intelligent organization. *Participate & Empowerment: An International Journal*, Vol. 7 No. 5, pp. 131-44.
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic management journal*, 17(S2), 27-43.
- Turner, R. (1990). *What are projects and project management?*. Henley The Management College.
- Turner, J. R., & Müller, R. (2003). On the nature of the project as a temporary organization. *International Journal of Project Management*, 21(1), 1-8.
- Un-Habitat. (2008). *State of the World's Cities 2008-2009: Harmonious Cities*. Earthscan.
- Von Krogh, G., Nonaka, I., & Aben, M. (2001). Making the most of your company's knowledge: a strategic framework. *Long range planning*, 34(4), 421-439.
- Wang, F. & Plaskoff J. (2002). An integrated development model for KM. In R. Bellaver and J. M. Lusa (eds.), *Knowledge Management: Strategy and Technology*. Norwood: Artech House.
- Weber, M., R. Hoogma, B. Lane, and J. Schot. 1999. Experimenting with sustainable transport innovations. A workbook for strategic niche management. Seville: IPTS.
- Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Loorbach, D., Banerjee, B. (2011). Tipping toward sustainability: emerging pathways of transformation. *Ambio*, 40(7), 762-780.
- Wiig, K. M. (1995). Knowledge management methods. *Arlington (TX)*.



Wilmink, M. (2016). Proposal TwentyOne (internal document). *MVO Nederland*.

Wiewiora, A., Trigunaryah, B., Murphy, G. D., & Liang, C. (2009, September). Barriers to effective knowledge transfer in project-based organisations. In *Proceedings of the 2009 International Conference on Global Innovation in Construction Proceedings* (pp. 220-230). Loughborough University UK.

Winter, S. G. (1995). Four Rs of profitability: rents, resources, routines, and replication. *Resource-based and evolutionary theories of the firm: Towards a synthesis* (pp. 147-178). Springer US.

Wong, K.Y. (2005). Critical success factors for implementing knowledge management in small and medium enterprises. *Industrial Management & Data Systems*, 105(3), 261-279.

WWF. (2010). *Reinventing the City: Three Prerequisites for Green Urban Infrastructures*.

Yin, R. (2009). *Case Study Research: Design and Methods*.

Zander, U., & Kogut, B. (1995). Knowledge and the speed of the transfer and imitation of organizational capabilities: An empirical test. *Organization science*, 6(1), 76-92.





## Appendix A: interview guide

### **1. Introducing questions**

- a. please introduce yourself (i.e. name, educational and work background)
- b. could you describe the project shortly (e.g. content, duration, objectives, how did you get involved in the project)
- c. (CA) why was the project initiated? (i.e. what was your motivation)
- d. (SA) what was your organisation's motivation to participate in the project?
- e. which are the main stakeholders of the project?

### **2. Effective knowledge management**

#### **2.2 knowledge creation**

- a. what role does knowledge play in the project environment?
- b. what are, so far, the most important lessons learned **during the project?** (i.e. newly gained knowledge and experience)
- c. why are these lessons learned important and to whom?
- d. how did these lessons learned arise?

#### **[project environment]**

- e. how does learning currently occur within the project? (i.e. how do you learn from other project members?)
- f. how does effective project learning look like according to you? (i.e. what are necessary requirements for effective learning)
- g. what do you consider as knowledge resources within the project?
- h. do you feel the project environment allows for new ideas?
- i. does the project environment stimulates interaction among project members? If yes, how does this interaction look like?
- j. do you feel that there is truly new ideas/knowledge created in the project? (or is it mainly learning from each other?)
- k. (SA) how do you feel sharing your knowledge and expertise in the project? Why (not)?
- l. how does your knowledge contribute to the project you think?

#### **[individual commitment]**

- m. are you motivated to create new ideas/deliver input into the project?
- n. do you feel that you have freedom within the project to provide new ideas/input?

#### **[shared objectives]**

- o. do all members of the project understand each other easily? (i.e. do you speak the same language)
- p. are all project members aligned? (i.e. shared same objectives) if yes, how did that occur? If not, why?
- q. As part of the project, do you feel part of a close group? Why (not)?



## **2.3 knowledge storage/retrieval**

### **[flexible technical knowledge infrastructure]**

- a. are the lessons learned during the project captured/stored? If yes, how? If no, why not?
- b. do all members have access to these lessons learned?
- c. (CA) how would you make sure other stakeholders understand and acquire the lessons learned?

## **2.4 knowledge transfer**

### **[channels]**

- a. how do you communicate with other stakeholders? (e.g. through face-to-face or media)
- b. do you consider this/these (a) useful method(s)? Why (not)?
- c. are all project members easy to reach?

### **[motivation]**

- d. are you open to exchange knowledge? Why (not)?
- e. do you consider knowledge from other stakeholder in the project valuable for the project?
- f. (SA) do you think lessons learned within the project are relevant for you/your organisation?

### **[absorptive capacity]**

- g. is the newly created knowledge within the project easy to understand? (i.e. is the knowledge close to your expertise)
- h. (CA) how would you determine if external knowledge is suitable for your project?
- i. (SA) how do the project's lessons learned relate to your parent organisation's knowledge?

## **2.5 knowledge application**

- a. are the lessons learned embedded within the project? if yes, how? If no, why not?
- b. how are the lessons learned applied within the project? Was this difficult/easy?
- c. did the lessons learned changed the course of/ the way of working in the project?
- d. (CA) did the lessons learned change the way you used to manage the project? How?
- e. (SA) did the project change the way you were used to work prior to this project? If yes, how?

## **3. Change agents as knowledge manager (CA)**

- a. how would you manage knowledge effectively? (how do you manage your own knowledge now)
- b. what could be done to improve the sharing of knowledge within the project? (among project members)

### **[leadership] (CA+SA)**

- c. is there a clear leader of the project? If yes, how did he/she arise. If no, why not?
- d. is it important to have a leader in this kind of project? Why (not)?
- e. what are his/hers main competences according to you?
- f. what are his/hers main tasks according to you?

## **3. Lessons learned between projects (CA)**

- a. do you think the created knowledge within the project can be applicable/valuable elsewhere?



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If yes/no, why (not)?

b. how do you see the exchange of lessons learned between projects?