Applying Knowledge Management to Projects in the Financial Sector

A case study of knowledge management in projects at a Swedish bank

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by

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Applicering av Kunskapshantering inom Projekt i Finanssektorn

En fallstudie inom kunskapshantering hos en svensk bank

Av

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Abstract

Within the financial sector, a Swedish bank realized that there was a need for knowledge management improvements in its projects, as new financial regulations forced the bank to conduct a large number of projects at once. Through these projects, it became apparent that knowledge management faltered within the organization.

Knowledge management is a subject that has been rising in popularity since the end of the 20th century. Knowledge management theories focus on allowing organizations to utilize the knowledge that resides within its employees and has proven to create significant advantages for organizations. Furthermore, knowledge management theories can be utilized to improve efficiency of projects.

The purpose of this exploratory case study is to apply knowledge management theories to projects in a bank to identify challenges for knowledge management for its projects, as well as identifying potential improvements for these challenges. This is done primarily through a series of interviews at the studied bank.

This thesis shows that several challenges can arise for projects within the financial sector. These challenges can be divided into three focus areas: challenges for understanding knowledge, challenges for knowledge management processes and challenges for institutionalization. Moreover, two to three key challenge topics are found within each focus area. Nevertheless, by applying current knowledge management theories improvements for these challenges areas can be found. Throughout this thesis, it has been shown that knowledge management can lead to an increase in organizational knowledge, which in turn can enhance the individual’s knowledge, resulting in a positive spiral of knowledge creation and utilization. Moreover, improving knowledge management in projects can reduce double work over projects while allowing projects to better keep track of their knowledge, resulting in a higher project efficiency.

To conclude the thesis, to improve knowledge management for projects in the financial sector, focus should be on three main focus areas. By improving these areas, knowledge can be better managed in projects, allowing projects to progress more efficiently, which in turn results in a higher competitive advantage for the organization.

Key-words: Knowledge management, project, financial sector, bank, institutionalization, knowledge processes, temporary organization.
Sammanfattning

En svensk bank inom den finansiella sektorns insåg att det fans ett behov av kunskapshanteringsförbättringar inom dess projekt, eftersom nya finansiella regelverk tvingade banken att starta ett flertal projekt samtidigt. Genom dessa projekt blev det tydligt att hanteringen av kunskap inte fungerade fullt ut i organisationen.

Kunskapshantering är ett område som har ökat i popularitet sedan slutet av 1900-talet. Kunskapshanteringsteorier fokuserar på att möjliggöra för organisationer att utnyttja den kunskap som finns hos varje anställd och teorierna har visat sig ge stora fördelar för organisationer. Fortsättningvis kan kunskapshanteringsteorier även användas för att öka effektiviteten inom projekt.

Syftet med denna explorativa fallstudien är att applicera kunskapshanteringsteorier inom projekt hos en bank för att identifiera utmaningar för kunskapshantering för dess projekt, samt identifiera möjliga förbättringar för dessa utmaningar. Detta görs primärt genom en serie intervjuer hos den studerade banken.

Denna studie visar att flera utmaningar kan framträda för projekt i den finansiella sektorn. Dessa utmaningar kan delas upp i tre fokusområden: utmaningar för att förstå kunskap, utmaningar för kunskapshanteringsprocesser och utmaningar för institutionalisering. Vidare identifieras två till tre nyckelutmaningar inom varje fokusområde. Genom att applicera moderna kunskapshanteringsteorier kan förbättringar för dessa utmaningar hittas. Genom studien visas det att kunskapshantering kan öka organisationers kunskap, som vidare kan utveckla individers kunskap, vilket resulterar i en positiv spiral av kunskapsskapande och -utnyttjande. Fortsättningvis kan förbättringar för kunskapshantering inom projekt minska dubbelarbete mellan projekt samtidigt som det kan få projekten att bättre hålla koll på sin kunskap, vilket resulterar i högre projekteffektivitet.

För att sammanfatta, för att förbättra kunskapshantering för projekt inom den finansiella sektorn bör fokus ligga på tre fokusområden. Genom att förbättra dessa områden kan kunskap bättre hanteras i projekt, vilket låter projekten fortsätta effektivare. Vidare resulterar detta i högre konkurrensfördelar för organisationen.

**Nyckelord:** Kunskapshantering, projekt, finanssektor, bank, institutionalisering, kunskapsprocesser, temporär organisation.
# TABLE OF CONTENTS

List of figures ...................................................................................................................... iii
List of tables .......................................................................................................................... iii
Foreword and acknowledgements .......................................................................................... iv
Definitions and abbreviations ................................................................................................. v

1 Introduction ......................................................................................................................... 1
   1.1 Background .................................................................................................................. 1
   1.2 Problematization .......................................................................................................... 2
   1.3 Purpose ........................................................................................................................ 2
   1.4 Research questions ..................................................................................................... 2
   1.5 Delimitations ............................................................................................................... 2

2 Research method ................................................................................................................ 4
   2.1 Methodological overview ........................................................................................... 4
   2.2 Research design & process ......................................................................................... 5
   2.3 Literature study ........................................................................................................... 5
   2.4 Primary empirical data ............................................................................................... 6
      2.4.1 Selection of interviewees ....................................................................................... 7
      2.4.2 Contacting interviewees ....................................................................................... 8
      2.4.3 Interview structure ............................................................................................... 8
   2.5 Secondary empirical data ........................................................................................... 9
      2.5.1 Archive documents and databases ........................................................................ 9
      2.5.2 Observations .......................................................................................................... 9
   2.6 Building the thesis ....................................................................................................... 10
      2.6.1 Focus topics for analysis ....................................................................................... 10
      2.6.2 Analysis, discussion, and conclusions .................................................................... 10
   2.7 Strengths and weaknesses of the methodology .......................................................... 11
      2.7.1 Reliability ............................................................................................................ 11
      2.7.2 Validity ................................................................................................................ 11
      2.7.3 Generalizability ................................................................................................. 12
      2.7.4 Ethics .................................................................................................................. 12
      2.7.5 Sustainability ....................................................................................................... 13

3 Theory ............................................................................................................................... 14
   3.1 Introducing and defining knowledge .......................................................................... 14
   3.2 Founding theories of knowledge management .......................................................... 15
      3.2.1 The SECI-model .................................................................................................. 15
      3.2.2 Best practice and lessons learned ....................................................................... 16
3.2.3 Communities of practice .................................................................................. 17
3.3 Knowledge management in projects ................................................................ 18
  3.3.1 Knowledge management processes .................................................................. 18
  3.3.2 Organization and institutionalization of multi-project knowledge management .... 19
  3.3.3 The use of ICT systems .................................................................................. 20
  3.3.4 Organizational knowledge culture .................................................................. 20
  3.3.5 Management commitment ............................................................................ 21
4 Empirical foundation for analysis ......................................................................... 22
  4.1 Overview of the organization ............................................................................ 22
  4.2 The project model for regular projects ............................................................... 22
    4.2.1 The project process ..................................................................................... 23
    4.2.2 The roles in the project .............................................................................. 23
    4.2.3 The supportive function for projects ......................................................... 24
5 Analysis .................................................................................................................. 25
  5.1 Introducing the regulation projects .................................................................... 25
    5.1.1 How regulation projects differ .................................................................... 25
    5.1.2 The additional supportive functions for regulation projects ..................... 26
  5.2 Thematic presentation of interview findings for knowledge management ............. 27
    5.2.1 How projects and personnel build knowledge ........................................... 27
    5.2.2 Different types of knowledge in projects .................................................... 28
    5.2.3 Communication ....................................................................................... 29
    5.2.4 Documentation .......................................................................................... 29
    5.2.5 Project delivery .......................................................................................... 31
    5.2.6 Supportive institutions for regulation projects ......................................... 32
  5.3 The need for knowledge management ............................................................... 34
6 Discussion .............................................................................................................. 35
  6.1 Focus areas ....................................................................................................... 35
  6.2 Understanding knowledge ................................................................................ 35
    6.2.1 Defining knowledge .................................................................................. 35
    6.2.2 The importance of differentiating between different types of knowledge .......... 36
    6.2.3 The importance of differentiating between knowledge of different subjects .... 37
  6.3 Knowledge management processes .................................................................... 37
    6.3.1 Creation of knowledge ............................................................................. 37
    6.3.2 Storage, organization and dissemination of knowledge .............................. 38
    6.3.3 Distribution and application of knowledge ................................................. 40
  6.4 Institutionalization ............................................................................................ 40
    6.4.1 The project offices .................................................................................... 40

ii
6.4.2 The temporary organization ......................................................................... 41
6.5 Consolidating the focus areas ........................................................................ 42
7 Conclusions ........................................................................................................... 45
7.1 The first research question ............................................................................. 45
  7.1.1 Understanding knowledge ........................................................................ 46
  7.1.2 Knowledge management processes .......................................................... 46
  7.1.3 Institutionalization .................................................................................... 46
7.2 The second research question ......................................................................... 47
  7.2.1 Understanding knowledge ........................................................................ 47
  7.2.2 Knowledge management processes .......................................................... 47
  7.2.3 Institutionalization .................................................................................... 47
7.3 Revisiting the purpose of the thesis ................................................................. 47
7.4 Contributions to current research .................................................................. 48
7.5 Limitations of the research ............................................................................. 48
7.6 Future research ................................................................................................. 48
8 References ............................................................................................................ 49

LIST OF FIGURES

Figure 1. The research process ............................................................................. 5
Figure 2: The SECI-model ..................................................................................... 15
Figure 3: The project process model of the bank .................................................. 23
Figure 4: Focus areas for discussion .................................................................... 35
Figure 5: Focus areas for knowledge management analysis in projects and their relationships ........................................................................ 43
Figure 6: Refined focus areas .............................................................................. 45

LIST OF TABLES

Table 1: Interviews ................................................................................................. 7
FOREWORD AND ACKNOWLEDGEMENTS

Through this report I present my Master thesis for my studies within the field of industrial engineering and management at KTH - the Royal Institute of Technology in Stockholm, Sweden. This thesis is my final step for my five-year journey towards my degree in Master of Science in Engineering.

First, I would like to thank the bank studied for this thesis, as well as my supervisor at this bank. While the bank prefers to remain anonymous, I still want to thank everyone at the bank who helped me, though participating in interviews as well as being available for discussion. Moreover, my supervisor at the bank has been a great help all throughout my thesis process. I hope that my conclusions in this thesis can be of help for you.

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You guys are awesome!

Sebastian Alteryd
Stockholm, June 2017
<table>
<thead>
<tr>
<th>Definitions and Abbreviations</th>
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<tr>
<td>Knowledge management</td>
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<tr>
<td>Institutionalization</td>
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<tr>
<td>CoP</td>
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<tr>
<td>SECI</td>
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<td>ICT</td>
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1 INTRODUCTION

This thesis is requested by a bank in Sweden, operating in the financial sector. The main focus is applying knowledge management theories to projects within this sector. This chapter first begins with describing the background for the topic of the thesis. Second, the underlying problem for the thesis is explained. Third, the purpose and research questions for the thesis is presented. Fourth and finally, the delimitations for the thesis are given.

1.1 BACKGROUND

In the beginning of the 21st century, a request for more regulations regarding reporting of transactions of the financial markets started to grow. The reason for this was that there was a lack of transparency, which resulted in uncertainty on the markets. From this uncertainty, a regulation set called MiFiD, the Markets in Financial Instruments Directive, was created and implemented in 2007 (European Commission, 2017). MiFiD aimed to do three things: New market position were defined on an international scale, protection for investors were strengthened and transparency in trading were enforced (European Commission, 2017). However, these regulations were not enough to create full transparency. Moreover, this lack of transparency was one of the main reasons for the financial crisis of 2008 (Barth & Landsman, 2010). Therefore, several new regulations were created and developed for different financial markets, which all aimed to increase transparency, to prevent similar crises in the future. These regulations contained, for example, rules for reporting of transactions (European Commission, 2017).

The organization studied in this thesis, one of Sweden’s largest banks, is one of the financial institutions affected by these regulations. To implement these regulations the bank decided to start several projects covering different areas of the regulations. Uncommon for a bank, this organization is highly decentralized in its structure, specifically regarding decision making. This decentralization allows branches within the bank to make major decisions independently, which for example within the local banking offices allows for faster responses to customer requests. Nevertheless, the bank still consists of several central functions, as they are required to fully manage the organization. The decentralized culture does, however, mean that these central functions are run fairly independent from one another. For this thesis, the focus lies on the regulation projects primarily conducted within the functions for market and asset management as well as the central IT function.

As more and more regulations arose in different markets, more and more projects were started at the investigated organization to implement these regulations. However, the bank found that the regulation projects were facing several issues regarding the knowledge accumulated in these projects. Furthermore, it was found that the projects tended to have issues in both retaining knowledge over time and transferring this knowledge from the projects back to the organizational units.

Knowledge management is a subject that has been rising in popularity since the end of the 20th century. In short, knowledge management is a subject for creating, finding, sharing and utilizing knowledge within an organization, to both reduce redundancies of work within an organization and allow knowledge to be used in new situations (Frappololo, 2006). Moreover, it has been found that a focus on knowledge can lead to a sustainable competitive advantage for a firm (Bhatt, 2007). For example, knowledge management theories have been found to both drive strategy and to quickly solve problems, see Wenger & Snyder (2000). Furthermore, according to Lindner & Wald (2011), knowledge management theories can be utilized to improve temporary organizations such as projects (Lindner & Wald, 2011).
1.2 PROBLEMATIZATION
While knowledge management for projects is a prominent subject within most industry sectors, many firms still have issues with the subject (Lindner & Wald, 2011). As the financial sector is highly controlled, it is generally considered to lag in relation to newer management theories and processes. As such, knowledge management theories were not being utilized at the studied financial organization. However, the large amount of regulation projects created a need for knowledge management. The reasons for this were several. First, the regulation projects were longer than regular projects at the organization, increasing the risk of knowledge being forgotten over time. Second, the interpretations of the regulations changed over time, meaning that knowledge had to be continuously updated within the projects. Third, the bank was not fully staffed to cover all the regulation projects. Because of this, the bank hired external consultants to participate in the projects, resulting in that some knowledge was lost from the organization to these consultants. Forth, the decentralized culture of the organization meant that it was more difficult to gain an overview of knowledge to be managed.

It can be seen that the financial regulations have had a significant impact on the banks current business and organization. As the regulation projects were key components for compliance with regulation authorities, the bank risked high fines if the regulations were not fully implemented within the organization. Further, because of the importance of compliance, it is imperative that knowledge regarding the projects for compliance of regulations is facilitated and maintained efficiently throughout the bank. Therefore, it was requested that the current management of knowledge within the regulation projects at the financial organization was investigated.

1.3 PURPOSE
The purpose of this thesis is to investigate how knowledge management can be applied to projects for an organization within the financial sector, to improve how knowledge is managed within the projects. This will be done in two steps: First, focus areas within knowledge management for projects that are facing challenges within this sector will be identified. Second, potential improvements of these focus areas will be discussed, to increase the knowledge management for projects and in turn increase an organizations competitive advantage.

This will be exemplified using the financial sector, more specifically an exploratory case study at one of Sweden’s largest banks. Projects at this bank will be investigated regarding how they currently work with knowledge and how they can improve.

1.4 RESEARCH QUESTIONS
The purpose will be fulfilled by answering the research questions below:
RQ1: What knowledge management areas are facing challenges in projects in the financial sector?
RQ2: How can a financial organization work towards improving these areas?

1.5 DELIMITATIONS
This study will be conducted primarily at two central units within the studied bank, which means that the study is delimited primarily to these parts of the bank, even though there are possibilities of using the conclusions for other units. Moreover, the focus is primarily on projects within these two central units. This means that only limited conclusions can be drawn in regard to operations as a whole within these units.

The subject of knowledge management acts across a plethora of different subjects, for example project management theories, project management offices, organizational structure and more. While these subjects are important to understand in order to understand how knowledge management acts across
them, no in-depth investigation of either subject will be conducted, to prevent the thesis form extending forever and more. Instead, the focus is upon the interaction of knowledge management across these subjects. This means that these areas will only be discussed from a knowledge management perspective.

This study is focused on the strategic view of knowledge management, meaning that an in-depth study of different knowledge management systems will not be conducted. Instead, knowledge management theories are used as a tool for improving the overall strategy of an organization, in this case through improving knowledge management in projects.
2 RESEARCH METHOD

In this chapter, the method for the research is explained in detail. First, a general overview of the methodology is explained. Second, more details regarding the specific methodological design and process are described, as well as specific discussions regarding theoretical and empirical data. Third, the strengths and weaknesses of the research design is presented.

2.1 METHODOLOGICAL OVERVIEW

This master thesis is based on empirical data gathered through a single exploratory case study. According to Yin (2012), case study research is beneficial when the researchers main goal is trying to explain some present circumstance, with questions such as “how?” or “why?”, while the relevant behaviors of the situation cannot be manipulated and the focus is on contemporary events (Yin, 2012), which was the situation for this thesis. Furthermore, according to Eisenhardt (1989) theory development from case studies are likely to have strengths such as novelty, testability and empirical validity. However, a risk is that the theory becomes overly complex, which is why simplicity must be kept in mind during the research (Eisenhardt, 1989). Because of this, the focus of this study was continuously narrowed down and focused, to avoid the risk of the study becoming too complex through a too large scope.

The case study’s main empirical data consists of qualitative data from interviews gathered at the investigated bank during the spring of 2017, which are supported by additional qualitative data in form of documents and guidelines gathered from archives. Furthermore, the study has been conducted at the organization studied, meaning that addition data has been gathered through spontaneous interactions and observations. In conjunction with this qualitative data, academic papers and literature have been reviewed and the information gathered have been used to analyze the empirical data.

The research followed an abductive approach, as it was found suitable for this type of case studies. According to Dubois & Gadde (2002), an abductive approach is beneficial to case studies. The reason for this is that a case study research process is an intertwined process of research activities. This implies that a case study research should not follow traditional distinct phases, instead a case study researcher often has to go “back and forth” between empirical observation and theory. Through abductive case studies, the research focus develops over time as the research project progresses (Dubois & Gadde, 2002). As the case study in this thesis required the research to move between the studies of literature and empirics, an abductive approach was chosen as suitable.

Moreover, the during the writing of this thesis the boundaries of the empirical world, as discussed by Dubois & Gadde (2002), were continuously narrowed down to not end up in an infinite project. This allowed the research to start in a broad manner, while still preventing the possibility of ending to broad; instead the borders were continuously refined and strengthened, which can be seen through the thematization and focus areas defined later in the thesis.

In this thesis, the literature studies started with a broad overview within the topic of knowledge management. As the study progressed, more specific topics within knowledge management were found to be important for the understanding and analysis of the empirical study. These topics were therefore investigated further, allowing the literature study to develop alongside the empirical study. This method is supported by Dubois & Gadde (2002) for abductive studies, as the analytical framework is important to the research process. It is suggested that a tight and evolving framework is used, since a tight framework shows the researchers preconditions for the case and an evolving framework allows the project to react to empirical observations (Dubois & Gadde, 2002).

To conclude this section, this thesis was done through a qualitative case study which primarily based on interviews. Moreover, the research followed an abductive approach. To avoid fallacies common in abductive studies, the focus on both the literature study and empirical study was continuously narrowed
down. This allowed for an exploratory thesis supported by theory, while still hindering the scope of the study from becoming too large.

2.2 **RESEARCH DESIGN & PROCESS**

In this section both the research design and the research process is described. In Figure 1 below, an overview of the process can be seen. The figure should preferably be read from the top-left to the bottom-right and is divided into three main process flows: the literature study, the empirical study and the building of the thesis. Within each flow, different processes are shown. This figure will be explained in detail in this chapter.

![Figure 1. The research process](image)

2.3 **LITERATURE STUDY**

The unit of analysis for this thesis is knowledge management in projects. The literature study was done in two parts. First, a broad literature study within the field of knowledge management was conducted to create a general overview for state of the art research within the field. Thereafter, as focus topics were identified a more focused literature study was conducted towards these topics in relation to knowledge management. Furthermore, the literature study also covered additional topics needed to fully understand the data gathered during the study.

Important keywords for this study were: Knowledge Management, Decentralized Organization, Temporary Organization, Project Management, Program Management, Intellectual Capital, Tacit Knowledge, Explicit Knowledge, Implicit Knowledge, Lessons Learned, Best Practice, Communities of Practice, Organizational culture, ICT systems, Management Commitment, SECI, Institutionalization, Project Management Office.

These keywords were used when searching for academic articles and books using tools such as Google Scholar and KTH Primo, where the latter is provided by the Library at the Royal Institute of Technology.

For these academic research documents, I began with reading the abstract, introduction and conclusion. If these seemed relevant to the topics I was investigating, I read through the full text and summarized
the key points. The summarize were then compared and combined to create a greater picture for the topic discussed.

Besides using the defined keywords above, additional academic documents were found through following the references from other documents. Furthermore, some academic articles were recommended by my supervisor at the Royal Institute of Technology.

2.4 PRIMARY EMPIRICAL DATA

The main empirical data gathering in this thesis was qualitative and gathered through live, face-to-face interviews. These interviews were semi-structured with a focus on open-ended questions, which according to Collis & Hussey (2014) are beneficial for qualitative case studies (Collis & Hussey, 2014). Moreover, the ordering of the questions was altered as the interviews progresses depending on the flow of the conversation and additional questions outside of the prepared ones were used when deemed appropriate.

As seen in Figure 1, the interviews were divided into three parts. The first set of interviews were used to gain an overview of the organization studied, as well as to create initial focus topics to be used in the study. The second set of interviews were used to find data for the focus topics, as well as to further refine the focus as well as identifying new focus areas. The final set of interviews were used as a complement to the focus interviews, to fill gaps identified when analyzing the interviews.

The interviews were recorded, which according to David & Sutton (2016) is preferable since it allows the interviewer to focus fully on the interviewee, in comparison to taking extensive field notes (David & Sutton, 2016). By focusing on the interviewee, I aimed to more precisely, through asking investigating and exploring questions, gather the data needed for the thesis. However, shorter field notes were still taken to note key points found during the interviews. The first set of interviews were fully transcribed. However, as some of the data from the interviews covered areas irrelevant to the thesis, the rest of the interviews were summarized extensively. Nevertheless, those interviews were transcribed in parts, for data especially relevant to the thesis. Moreover, the parts of the interviews which has been used as quotes in this thesis were also transcribed.

After the interviews had been transcribed or summarized, they were sent to the interviewees for review. This was conducted to avoid any potential misunderstanding. Further, some interviewees took this as an opportunity to clarify their position, which meant that some additional data was gathered through these clarifications.

In total, 17 interviews were conducted during the study. The interviews covered a large variate of roles within the organization. The primary area interviewed was the different roles in the organization’s projects, since this was most closely related to the topic of this thesis. However, additional personnel outside of the primary topic were also interviewed, to gain their view of knowledge management, the project, and the organization. The full list of interviews can be seen in

Table 1 below, sorted by role. In this table, the roles of the interviewees are shown, as well as the duration of the interviews and their form. Moreover, some interviewees had or had had several roles relevant to the study, as indicated in the table. Finally, the interview set that each interviewee was part in, as shown in the research process in 2.2, is shown on the right. The roles are described in 4.2.2.
Table 1: Interviews

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Role</th>
<th>Duration</th>
<th>Interview set</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Project leader</td>
<td>72 minutes</td>
<td>Explorative</td>
</tr>
<tr>
<td>B</td>
<td>Project leader, consultant</td>
<td>47+22 minutes*</td>
<td>Focused</td>
</tr>
<tr>
<td>C</td>
<td>Project leader</td>
<td>58 minutes</td>
<td>Complementary</td>
</tr>
<tr>
<td>D</td>
<td>Project leader, Project commissioner, Leader for operations</td>
<td>58 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>E</td>
<td>Project commissioner</td>
<td>86 minutes</td>
<td>Explorative</td>
</tr>
<tr>
<td>F</td>
<td>Project commissioner, Operations manager</td>
<td>53 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>G</td>
<td>Operations manager</td>
<td>60 minutes</td>
<td>Explorative</td>
</tr>
<tr>
<td>H</td>
<td>Operations manager</td>
<td>57 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>I</td>
<td>Operations personnel</td>
<td>63 minutes</td>
<td>Explorative</td>
</tr>
<tr>
<td>J</td>
<td>Operations personnel</td>
<td>48 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>K</td>
<td>Operations personnel</td>
<td>40 minutes</td>
<td>Complementary</td>
</tr>
<tr>
<td>L</td>
<td>Project Responsible IT Manager</td>
<td>55 minutes</td>
<td>Complementary</td>
</tr>
<tr>
<td>M</td>
<td>Project member, consultant</td>
<td>46 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>N</td>
<td>Investigation leader</td>
<td>52 minutes</td>
<td>Complementary</td>
</tr>
<tr>
<td>O</td>
<td>Head of umbrella organization</td>
<td>55 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>P</td>
<td>Project office worker</td>
<td>50 minutes</td>
<td>Focused</td>
</tr>
<tr>
<td>Q</td>
<td>Project office worker</td>
<td>53 minutes</td>
<td>Focused</td>
</tr>
</tbody>
</table>

* This interview was done in two parts because of external events.

2.4.1 Selection of interviewees

The selection of interviewees was done firstly on an explorative, subjective basis, where I as the researcher identified key informants who was believed to be relevant to the research. This explorative selection is according to Denscombe (2016) beneficial for small scale research as well as to acquire qualitative data. Moreover, a subjective selection of interviewees is beneficial for case studies in that the researcher can focus on acquiring relevant data (Denscombe, 2016).

The selection method is, however, more beneficial when the researcher has prior knowledge about the company (Denscombe, 2016). To circumvent this, I initially received help from a supervisor from the organization, who aided me in finding and connecting to personnel I was interested in contacting. Moreover, as the interviews progressed I asked the interviewees if they believe that there is someone else who could aid my research, which according to Denscombe (2016) can be defined as a snowball-selection. This type of selection can be beneficial for projects where it is not clear at the start what personnel is relevant to interview. Furthermore, this type of selection is beneficial since it allows the researcher to determine the number of persons to interview, as each interviewee often can recommend at least one more (Denscombe, 2016).

As the topics for this thesis were found during the study, the snowball method was highly beneficial for finding new interviewees. As more and more potential interviewees were found, I could utilize the subjective selection method to find the ones most relevant. Moreover, the snowball method also reduces any potential bias that could occur if only personnel recommended by the organization supervisor were interviewed. As the study progressed, personnel outside of the organization supervisors personnel network was found, which allowed me to see several different views on the organization.

Using the snowball selection method, there was a risk of overload in number of potential interviewees, as more and more were recommended with each interview. To not conduct an endless study, it was therefore required to stop the interviews. As per recommendation of a supervisor at the Royal Institute of Technology, when I realized that I was hardly acquiring any new data in an interview, I found that it
was time to stop. To make certain this was the case, one final interview was conducted and used to find any potential holes in the empirical data.

2.4.2 Contacting interviewees

The interviewees were contacted primarily through email through the internal email server within the organization. By using this internal server, the emails were never disregarded as spam, which resulted in a 100% response rate. However, a few interviewees declined the interview. The email was formal, explaining the reason for the email, the topic of my thesis and the reason I was interested in interviewing the specific person. Furthermore, details regarding time and place, a proposition to record the interviews, as well as the interviewees anonymity was presented. When the potential interviewees had additional questions, these were resolved through a combination of email, instant messaging and face-to-face conversations.

2.4.3 Interview structure

As said by Voss, Tsikriktsis, & Frohlich (2002), it is important that during interviews the researcher is a good, flexible listener who is not trapped by preconceptions nor pre-conceived notions. Moreover, the researcher should have a firm grasp of the subject to be able to ask good questions and to understand the answers (Voss, Tsikriktsis, & Frohlich, 2002). Because of this, I aimed to keep an open mind and be well prepared with knowledge of the topic before conducting the interviews. Moreover, according to David & Sutton (2016) the questions for the interviews could be of several types. The interview should typically start with warm-up questions to establish rapport with the interviewee. There should also be demographic questions to acquire data about the interviewee himself/herself. For the main section of the interview, the core questions should be about the central themes of the research. From the answers, prompts should be used to further investigate the topics. Finally, questions for clarification should be used to make sure that nothing is misunderstood (David & Sutton, 2016). These different question types were used as a template when designing the questions and structure for the interviews. The interviews typically started with initial questions regarding the interviewee’s role in the organization. After this, the main set of questions was used to investigate the topics for the interview. Finally, as the interviews was finishing the interviewee was first asked if there was anything they wanted to add, as well as if there was anything that could be improved with the interviews. Furthermore, it was asked if the interviewee felt that it was easy to express their opinions and if the interviewer was neutral. For the few cases where interviewees had opinions regarding the structure of the interview, this was taken into consideration for future interviews.

The interviewees were not given the interview questions in advance, as I wanted to allow the flow of the conversation to dictate the order of the questions. This resulted in that some questions were occasionally missed during the interviews, as well as that the proposed timeframe of 60 minutes was sometimes exceeded. However, it allowed the interviewees to discuss what they felt was the most important factors for the topics, while still allowing me to control the flow of the conversation when needed. In hindsight, it can be said that the benefits of sending the questions in advance would be a better structure for the interviews. Nevertheless, the method used was highly beneficial as the interviews were highly explorative in identifying focuses and key topics. Because of the lesser structure, interviewees could more easily shift the conversation to area not known to me prior to the interview, which aided my research as it expanded my knowledge of topics.

For the overview interviews, all interviewees were asked the same set of questions. However, for the rest of the interviews, not all interviewees were asked every question. According to Voss, Tsikriktsis, & Frohlich (2002), when a set of questions can be answered by one key informant the researcher should focus on finding this informant rather than conduction a broad variety of interviews. On the other hand, for some questions several different perspectives from different interviewees are important to accurately find an answer (Voss, Tsikriktsis, & Frohlich, 2002). Because of this, the thesis was focused on defining what types of answers that were needed, key information or broad variety, and the questions were
adjusted accordingly. Moreover, for some topics investigated there was a limited number of relevant personnel available for interviews. For these interviews, the focus was primarily on gathering data regarding the specific topic. Nevertheless, a general set of questions regarding the key topic for the thesis was used as a template for designing questions for the interviews.

For this thesis, the language used by the interviewees was used continuously when planning and conducting the interviews. This allowed me to gain a good understanding of the topics analyzed in the study. Furthermore, the parallel study of literature allowed the language from the interviews to be compared and synchronized to that of the academia. The use of empirical language is supported by Dubois & Gadde (2002), as they claim that using this language makes it easier to interpret the empirical data. Thus, the theoretical language should be used only at the final product, as it is being used in this thesis.

2.5 SECONDARY EMPIRICAL DATA

Besides the interviews, secondary empirical data was also gathered for the thesis. This data can be separated into two groups: archive documents and databases, as well as observations. These two groups will be described below.

2.5.1 Archive documents and databases

During the interviews, it was found that many interviewees referenced models, protocols, and other documents that was set up by the organization. Because of this, I gained access to these documents and used them to cross reference the data gathered in the interviews. These documents covered several different topics relevant to this study, including

- An overview of the organizational structure
- An overview of the umbrella organization’s structure
- A database containing the guidelines and templates for project planning
- Several databases handling past, ongoing and future projects

These different documents and databases were investigated in parallel to the interviews. Whenever any uncertainties were found, this was used as question material and thus clarified during the interviews. Furthermore, these sources were used to create the overview of the organization as seen in section 4.1.

It is important to note that while these documents were used to gain insight in the organization, the primary source of empirical data was the interviews. This meant that the knowledge gathered from the documents were not taken for granted, instead it was used during the interviews to gain the interviewees’ perspective on the documents and more importantly the guidelines and templates.

The documents and databases were used for triangulation of the data, to validate the interview data with the document data. According to Denscombe (2016), data triangulation is when one uses data from different information sources to validate the findings (Denscombe, 2016). The benefits of data triangulation are improved validity, control for biased data, and building a better picture of the findings in comparison to a single source of data (Denscombe, 2016; Collis & Hussey, 2014). In short, the use of archive documents and databases improved the validity of the study. However, one should note that a single organization was used for the study. This means that while the validity of the results in relation to the organization is improved, the generalizability is still low in that the results cannot be directly transferred to another organization.

2.5.2 Observations

During the process of writing this thesis, I was given a desk to use at the investigated organization. The desk was amidst the personnel of the organization, which allowed me to have day to day informal meeting with many around me. This opportunity was used to gain greater insight in the organization, as
well as to discuss questions that arose after interviews. Moreover, interviewees approached me several times after interviews to further discuss topics from the interviews.

These informal interactions were not recorded and thus not used primarily as a source for this thesis. However, one should note that seeing and studying within the organization studied may have affected how the results have been interpreted. This means that the findings are not fully limited to the interviews and documents, which makes it more difficult to replicate this study. Nevertheless, the observations have been beneficial to my understanding of the organization, and this aided me in my research.

2.6 BUILDING THE THESIS

The thesis was built in three parts. At the start, there was priority for defining the methodology as it is presented in this chapter. As the interviewing began, more focus was put on identifying focus topics for the thesis. Alongside with the focus identification, the analysis of the data began early in the process. Finally, as the thesis finished its completion I was able to draw conclusions based on the empirical data and literature. As the methodology is the theme for this chapter, this section will explain the methodology for defining focus topics, analysis and conclusions.

2.6.1 Focus topics for analysis

As the thesis started in a wide, explorative way, it was important to continuously narrow down the focus of the study. To achieve this, I decided to identify key focus topics to base the study on. Initially, after the first few interviews a raw draft of focus topics was created. This draft was then continuously iterated and refined through the later interviews.

The focus topics were found through separating the topics discussed at the interview into categories. According to Denscombe (2016), when working with qualitative interview data it is beneficial to codify the data and divide the codes into categories (Denscombe, 2016). Furthermore, Yin (2012) adds that the categorization is an iterative process, meaning that the first categories discovered might not be the most appropriate ones (Yin, 2012). Considering this, I kept an open mind throughout the study as to finding and replacing categories.

As the interviews progressed, I continuously noted key topics that the interviewees discussed. These topics were then used for further questions during later interviews. At the same time, the findings were continuously analyzed as the interviews were summarized. From the interview summaries, key words were identified. These key words were then divided into piles for different topics. Through this method, as second way of categorizing the data was made. The categories from the key topics were then compared to that of the key words from the summaries. This allowed me to create distinct categories that were exclusive while still covering all relevant areas for the thesis.

2.6.2 Analysis, discussion, and conclusions

As the focus topics were defined and redefined, the data was continuously analyzed. According to Yin (2012), there are several ways of analyzing qualitative data. One can analyze from the perspective of the theory, from the group-up based on the findings, from a case framework or from comparing findings with the literature (Yin, 2012). During the writing of this thesis, all of these methods were used. The primary method was the group-up method, as I build the thesis by exploring the areas where the interviewees identified challenges. However, using solely this method might have caused me to miss certain areas. The data was therefore also analyzed from the perspective of the literature. This lead to several interesting findings not identified by the interviewees themselves. Further, the case of knowledge management within a decentralized organization was used as a starting point for the thesis. However, it was later found that this case was non-inclusive for some topics relevant for the thesis, as it limited the focus towards specifically decentralization. Hence, a new wider case of knowledge management within projects was defined as a general theme, to cover the additional topics. Finally, the findings from the
literature perspective and those from the empirical perspective were compared, which in turn led to new findings.

By using these different analysis perspectives, I was able to draw conclusions not apparent at a glance. This comparison of perspective was imperative when concluding the findings. Furthermore, the conclusions were strengthened by comparing and aligning the conclusions to the state of the art literature. By using the literature for comparison, I was able to identify conclusions not clear from solely the findings, but important for improving knowledge management for the organization.

2.7 STRENGTHS AND WEAKNESSES OF THE METHODOLOGY

In this section, the research methodology and design is discussed from the perspective of reliability, validity, generalizability, ethics and sustainability to show the strengths and weaknesses of my approach.

2.7.1 Reliability

When conducting research, it is important to discuss the reliability of the findings. According to Yin (2012), reliability in case studies is the consistency and repeatability of the research procedures used. Moreover, it is important to record the procedures for how the case was conducted (Yin, 2012). To achieve this, I used the interview methodology as described in this chapter. However, the repeatability, which is an important part for testing reliability, is reduced because the interviews were semi-structured, since this means that there is no exact template for questions. Moreover, the repeatability is reduced since this thesis was conducted in collaboration with the studied organization during a specific period and it is likely that the organization have changed afterwards. Finally, the repeatability is reduced because of the informal observations conducted during the study, as informal, spontaneous meetings cannot be replicated. In sum, this thesis is reliable in that the methodology used is explained in great detail. However, given the nature of the study, fully replicating the study would be highly difficult.

To further increase reliability, the data gathered during the study was organized after both topic and time, which allowed me to track back old data at the later stages of the study. This database organization was suggested by Yin (2012) to improve the reliability through control and overview of the data (Yin, 2012). Further, Yin (2012) suggest that one should maintain a clear “chain of evidence” during the study, meaning that data should not be changed or altered, rather it should be clear to the reader that the data is presented as it was collected “at the scene of the crime” (Yin, 2012). Because of this, I made sure that analysis and data was kept separate, so that the core findings were not altered. However, as the later interviews in the study were merely summarized and not transcribed, there is a risk that my summaries were affected by my opinions of the data. Considering this, the summaries were compared to the field notes written during the interviews, as these field notes showed my interpretations of the interviewees body language and tone during the interviews. Furthermore, the summaries, and transcriptions, were sent back to the interviewees, allowing the interviewees to comment on any misconceptions. Through this validation of the summaries, the reliability is strengthened, even without the lack of complete transcripts.

Finally, the reliability of the thesis was strengthened by widening the range of the interviews from the initial focus area. As the focus was knowledge management within projects, the first set of interviews were with roles directly involved in projects at the organization. However, it was found that the projects interact with many other parts of the organization. The width of the interviewed roles was therefore widened to personnel outside of the immediate sphere of projects. This allowed me to get a greater view of how knowledge was managed within projects, as these new interviewees had a different perspective which in turn created key insights for the study as well as making the results more reliable.

2.7.2 Validity

It is important that the validity of the data is controlled, so that the findings can be used for future research. According to Collis & Hussey (2014), interviews create validity for qualitative data since the
interviewer can control and validate the data directly in the interviews. Furthermore, recording interviews increases the validity of the research since this means that the data can be controlled afterwards (Collis & Hussey, 2014). With the recordings, I could go back and double check information as well as perfectly transcribe important information. To achieve this, clear and precise recording equipment was used and the interviews were conducted in quiet rooms with little distractions, as suggested by David & Sutton (2016). There were no cases of faulty interviews, meaning that every interview could be fully comprehended. For the few cases where background noise invaded the recordings, the recordings could be slowed down, allowing me to determine with precisions what was being discussed through the noise.

It is worth noting that according to Denscombe (2016), the validity of interviews is reduced when they are semi-structured as this means that the data is dependent on the specific interviewees and their context (Denscombe, 2016). To adjust for the context of the interviewees specific situations, the interviews were initiated by asking a set of introductory questions, which aimed to create a picture of the interviewee’s situation. These questions involved topics such as the interviewee’s role, past experiences, their time within the organization, current projects and other ongoing events. Through this, the data could be controlled later, while allowing me to grasp the situation of the interviewee.

To further increase validity of this thesis, the theory section consists of several founding theories and models for knowledge management, as well as specific theories and models regarding knowledge management for projects. By using these theories and models, my research can be said to build upon prior research as well as using academically accepted definitions. By building upon previous research and through a thorough study of current academic articles within the field of knowledge management, the validity of this thesis is strengthened.

To summarize, the validity of the data was strengthened through controlled handling of the recordings, both through specifics questions during the interview and during the transcribing/summarizing process afterwards. Furthermore, validity is more strengthened as the literature review meant that the research was based upon previous research within the field.

2.7.3 Generalizability

Since this thesis is a single case study, the generalizability will be limited. This is because there could be biases such as misjudging events and exaggerating data (Voss, Tsikriktsis, & Frohlich, 2002; Eisenhardt, 1989). Furthermore, as the study was conducted at only one organization and did not include every section of this organization due to time limitations, it cannot be said to fully represent the studied organization nor other organizations.

However, according to Yin (2012) even though there is difficulty in generalizing a case study for populations and universes, it is still possible to generalize case studies for theoretical propositions similar to how single experiments can be generalized (Yin, 2012). Because of this, the focus in this thesis was on theoretical propositions. The findings were used both as indicators to how the organization functioned, or did not function, to find propositions for improvement, as well as to outline potential improvement within the field of knowledge management.

2.7.4 Ethics

When conducting case studies with personal data, it is important to maintain strict ethics in regard to the data. This was done in several ways. The recorded interviews were stored privately to prevent the data from being accesses unauthorized, which according to David & Sutton (2016) is important to do to not disclose sensitive personal data (David & Sutton, 2016). Moreover, the recordings, documents and summarized were not disclosed to anyone.

Before the interviews, the interviewees were given information regarding the scope of the study, the reason for conducting the study as well as their role within the study. Further, their anonymity was noted,
and withheld during the study, and it was confirmed that the interviewees accepted the terms before the interview began. Moreover, it was confirmed that the interviewees agreed with being recorded prior to the interview.

When the study began, a contract for confidentiality was signed with the investigated organization. This contract did not prevent the data from being presented in this thesis, however it required me to confirm that the finding did not break confidentiality to not damage the organization, before publishing the data. Furthermore, it was confirmed with the organization supervisor that the organizations name could not be used for the study. Moreover, the interviewees were made aware of the confidentiality contract before the interviews. This contract was also imperative for me to gain access to the internal documents at the organization.

Because of the contract of confidentiality and to protect the integrity of the interviewees, neither the raw summaries for the interviews nor the internal documents for the organization has been included in this report. Instead, the reader is given the data through chapters 4 and 5, which give an aggregated version of the findings.

2.7.5 Sustainability
One should consider the sustainability aspects of the research, as it is imperative for future developments. According to Giddings, Hopwood, & O’brian (2002), sustainability can be divided into three aspects: Society, Environment and Economy (Giddings, Hopwood, & O’brian, 2002). For this thesis, there is little that can be related to the environmental aspect. However, for the other two aspects there are clear benefits of this study. For the economical aspect, it can be said that the conclusions in this thesis can lead to a better economic situation for the organization studied. As the organization is a bank, this can in turn translate to a better economy for society. For the societal aspect, there are benefits for the worksite in the investigated organization. As the conclusions for this study aids in focusing the tasks for the employees, it can be said that the conclusions can improve the day to day workload of the personnel.
3 Theory

This chapter will begin with defining knowledge and how it differs from information. Afterwards, the founding theories of knowledge management will be explained, more specifically the different kinds of knowledge as well as the basic model of knowledge transfer. Following this, the different factors for knowledge management in projects will be explained.

3.1 Introducing and defining knowledge

This thesis primary focus is the management and transfer of knowledge. Therefore, it is imperative that the notion “knowledge” is first defined. According to Toyama, Konno, & Nonaka (2000), the traditional definition of knowledge is “justified true belief”. However, it seems this view is static and fails to fully describe the dynamic nature of knowledge (Toyama, Konno, & Nonaka, 2000). Therefore, the traditional definition should be adapted to this dynamic nature. First of all, almost a century ago Hayek (1945) argued that knowledge is highly context-specific and that acquiring “complete” knowledge is both impossible and impractical. On the other hand, since knowledge is dependent on the context it is imperative that one acquired enough knowledge to understand the context as well as actually looking at the knowledge from within the context (Hayek, 1945). Toyama, Konno, & Nonaka (2000) expands on this to create the differentiation between knowledge and information: knowledge without context is simply information (Toyama, Konno, & Nonaka, 2000). This difference between information and knowledge has since then become prominent in the literature, see for example Alavi & Leidner (2001), Shin, Holden, & Schmidt (2001) and Lindner & Wald (2011). An example of information would be “5 cups of coffee per day”. When this is put into context, it can become knowledge: “5 cups of coffee per day is needed to have enough energy to finalize a thesis”. Further, Toyama, Konno, & Nonaka (2000) argues that knowledge has a human aspect, in that information is always interpreted by individuals, which means that the knowledge is formed by combining the information with the individual’s experiences (Toyama, Konno, & Nonaka, 2000). Management of knowledge has over the later years been increasingly seen as an important asset for the success of a firm (Müller & Pemsel, 2012). Moreover, it has been seen that successful knowledge management can lead to long-term competitive advantages (Bhatt, 2007). In short it can therefore be said that knowledge can be defined as the dynamic process of human interpretations of information created within specific context and pose an important role for the success of a firm.

As knowledge is now defined, one can dive deeper into defining different types of knowledge. Stemming from Nonaka and Takeuchi’s book, Takeuchi & Nonaka (1995), as well as Nonaka’s popular article, see Nonaka (1991), summarizing the same book, the two generally accepted types of knowledge are explicit and tacit knowledge. According to Nonaka (1991), explicit knowledge can be defined as formal and systematic. Through this, this type of knowledge is easy to communicate and share. Moreover, explicit knowledge can be written down and shared through documents and other texts (Nonaka, 1991). In short, it can be said that explicit knowledge is easy to “grip” and understand.

However, one should not forget about tacit knowledge. Nonaka (1991) defines tacit knowledge as the opposite of explicit. It can hardly be formalized and is highly personal. This, in turn, means that it is difficult to communicate or share. One part of tacit knowledge is the experience one has in his/her profession. The other part is the mental models and perspectives that this person has created for himself/herself (Nonaka, 1991).

Adding to these two types of knowledge, a third type has been defined in later years, called implicit knowledge. Frappaolo (2006) defines implicit knowledge as explicit knowledge not yet made explicit. That is, implicit knowledge would fall in-between explicit and tacit (Frappaolo, 2006).
To summarize, tacit knowledge is informal and unstructured, implicit knowledge is more formal and has the potential to be structured and explicit knowledge is formalized and structured knowledge (Frappaolo, 2006).

3.2 Founding Theories of Knowledge Management

Here the founding theories of knowledge management are presented. First, the SECI model is presented. Second, the concepts of best practice and lessons learned are defined. Third, communities of practice are introduced.

3.2.1 The SECI-model

Besides creating the modern definitions of explicit and tacit knowledge, Nonaka (1991) also created one of the founding models of knowledge management known as the SECI-model. The model consists of four parts: Socialization, Externalization, Internalization and Combination (hence its name) and can be seen in Figure 2.

This model presents a way to interpret how knowledge is created within an organization. Moreover, the four parts cover the four possible interactions between tacit and explicit knowledge. For the parts explained below, an example of a firm of craftsmen will be used to give further insight into the parts and how they differ.

The first part is called Socialization and covers the knowledge transfer from tacit to tacit knowledge. According to Nonaka (1991), this knowledge transfer occurs when two individuals interact directly with each other on an individual level. Further, socialization is explained as when one individual shares his/hers experiences with another through teachings and similar situations. This means that the receiving individual learns through observation, imitation and practice. The main downside to this transfer method
is that the knowledge transfer has limited generalizability, because none of the individuals gain any systematic understanding of the knowledge transfer because of the tacit nature of the knowledge (Nonaka, 1991). An example of socialization would be when an apprentice at a craftsmen firm learns trade skills from a master.

The second part of the SECI model is called Externalization and covers the transfer from tacit to explicit knowledge. According to Nonaka (1991), this is done when an individual who has tacit knowledge articulates this knowledge and thus converting it to explicit. This articulation is important, since it allows the newly created explicit knowledge to be shared (Nonaka, 1991). For our example, this would be when an apprentice, after finishing his training, writes down his learning into a model of practice for himself/herself.

The third part of the SECI model is called Combination and covers the transfer from explicit to explicit knowledge. According to Nonaka (1991), describes this as the process of combining several pieces of explicit knowledge into something new. Further, this also covers when several pieces of information is combined, since the information is put into context and therefore creates knowledge. However, as with socialization this part is limited in that the ability to use it to increase the aggregated knowledge of a firm is limited (Nonaka, 1991). Following the example, this would be when a manager at the firm collects written learnings from apprentices and combines them into a well-defined template for how employees should work in the future.

The fourth and final part of the SECI model is Internalization, which is the transfer from explicit to tacit knowledge. According to Nonaka (1991), this part imperative for increasing the knowledge base of an organization. Internalization occurs when explicit knowledge is shared within an organization, so that employees can learn from. Moreover, by allowing employees to access new explicit knowledge they will combine it with their prior experiences and thus use it as a building block in their own tacit knowledge (Nonaka, 1991). For the example firm, this would be when the new template is distributed to the employees, who then add the new learnings to their own experiences and work ethic.

Nonaka (1991) explains that knowledge creation happens through a spiral interaction between the different parts of the SECI model. Furthermore, the spiral is extending outwards, since the level of knowledge for the organization is increased for each lap. Each part of the model is needed to increase organizational knowledge, however externalization and internalization are especially important, since they require the most active involvement from employees (Nonaka, 1991). This can be seen in the example presented above, where the articulation of experiences and well as the reading of template are key points for the knowledge creation to achieve effect. Furthermore, these four parts can be discussed in view of which level of interaction they affect; individual, group or organizational. Sabherwal & Becerra-Fernandez (2003) found that socialization is excellent for facilitating knowledge on a group level, however, it does not contribute to the organizational level. Instead, for the organizational level mainly combination contributed. Moreover, they found that the most difficult processes to enable in an organization were internalization and externalization, which contributed to the individual level of knowledge (Sabherwal & Becerra-Fernandez, 2003). To conclude the description of the SECI model, it can be said that the model goes from interaction between individuals (socialization), up to organizational level (externalization and combination) and then back to the individual level (internalization).

### 3.2.2 Best practice and lessons learned

As knowledge management became popular, the term best practice was coined. As the knowledge management theories later developed further, the concept of best practice was changed to be called lessons learned, however the gist of the concept was the same (Frappaolo, 2006). Furthermore, according to Quinn Patton (2001), the two terms are now used depending on the taste of the user and have the same conceptual meaning (Quinn Patton, 2001). The precise definition of the term is discussed widely, however, at a general level it can be said to be the generalization of a learning to be used in new contexts.
Between the two terms, lessons learned is preferably used, as the notion of best practice holds flaws in its name. as per Quinn Patton (2001), the notion best practice is flawed in several ways. First, defining what is “best” in a diverse world is counter intuitive, something that is best in one situation is hardly the best solution for every situation. Second, just because two things are the best of their respective kind does not necessary result in that the combination of these “best” thing is the best combination there is. The “best” must therefore be put in context, which however is not often the case. Third, when defining a best practice, one can fall into the trap of believing that this practice should be done the exact same way always. However, a well-defined best practice should be adaptive, which in turn lowers the value of the word “best” (Quinn Patton, 2001).

In comparison, Quinn Patton (2001) believes that the term lessons learned gives a more personal approach to knowledge. Here, the emphasis is more personal and thus more adaptive to situations. However, it was found that even lessons learned could falter, as just because something is learned does not always account to that this lesson is “good”. Therefore, one should search for high-quality lessons learned. These high-quality lessons should be found not by a single source, but by a triangulation of sources with support from several perspectives (Quinn Patton, 2001).

3.2.3 Communities of practice
Communities of practice, CoP, is “a collection of people who engage on an ongoing basis in some common endeavor” (Eckert, 2006). The idea behind a community of practice is that personnel within an organization can have a forum to interact with one another in a more informal manner than a meeting. These forums could be lunches, events or even e-mail groups. The goal is to allow groups of people to interact with other employees within the firm outside of their own closed group of colleagues (Wenger & Snyder, 2000). Moreover, it can be argued that most people spontaneously interact within different CoP in their daily lives, based on their interests and activities. Theory of CoP is therefore focused on creating these communities actively within an organization (Smith, 2003).

Through a community of practice, people with different skill levels and expertise can share their knowledge and discuss their work (Smith, 2003). By doing to, these communities can be an excellent way for organizations to build knowledge and strengthen the firm. The reason for this is that a community of practice often develops its own language, allowing members to understand each other and discuss with ease. Moreover, new members can enter the community by learning to understand the common language used (Eckert, 2006). Using a community of practice within an organization is different to using a formal work group or a project team. A formal work group would focus on delivering a product or service, while a project team would focus on completing a specific task. Both of these groups are formed by a manager and focused on these specific goals. In comparison, a community of practice’s purpose is not goal focused, rather it is focused on building and exchanging knowledge. Moreover, a community of practice is not formed by a manager, it should be self-forming and members should select themselves (Wenger & Snyder, 2000).

In regard to knowledge, communities of practice have been found to help drive strategy, to start new lines of business, to quickly solve problems, to transfer best practices and to develop professional skills for employees (Wenger & Snyder, 2000). However, while these benefits are strengthening for a firm, the communities are not without issues. According to Wenger & Snyder (2000), communities of practice can be described as “like gardens, they respond to attention that respects their nature. You can’t tug on a cornstalk to make it grow faster or taller, […]. You can, however, till the soil.”, the point here being that a community of practice cannot be forced, rather it should be cultivated by motivating personnel to participate (Wenger & Snyder, 2000). Because of this unstructured nature, per Smith (2003) it can be seen that communities of practice have received criticism as they cannot be managed (Smith, 2003). However, as noted by Smith (2003) and Wenger & Snyder (2000), the benefits of communities of practice in term of knowledge sharing and building outdoes the troubles of management (Smith, 2003; Wenger & Snyder, 2000).
There are ways to form, or rather stimulate the forming, of communities of practice within an organization. According to Wenger & Snyder (2000), a firm should identify potential communities, where it can be seen that there is personnel interested in discussion. Further, manager could hint to employees that there are others sharing their interests. Moreover, an organization can provide the infrastructure for a community, allowing personnel to easier form communities as needed. This means that management should be ready to invest money and resources into situations where communities could be formed. By doing so, the organization can establish communities, which in turn increases the opportunities for knowledge management within the organization (Wenger & Snyder, 2000).

3.3 KNOWLEDGE MANAGEMENT IN PROJECTS

In this thesis, the focus is upon knowledge management within projects and knowledge transfer between projects and operations, from a project perspective. While knowledge management is the dependent variable and projects are an independent variable, it is still important to define project. A project is a temporary activity, meaning it has a set start and end. The exact constellation of people in a project depend on the situation, however it can be said that a project at least need a project leader. For this thesis, the important point to notice is the temporary form of projects. According to Lindner & Wald (2011), this temporarily creates a unique situation for knowledge management which differ from regular, static operations (Lindner & Wald, 2011). To identify and analyze the strength and weaknesses specific for the case study in this thesis, it is beneficial to first identify key factors from the literature for knowledge management, specifically for temporary activities such as projects. From a broad study of companies, in combination with an extensive combination of literature on the subject, Lindner & Wald (2011) tested a number of different factors to identify which could be deemed success factors for projects knowledge management. These factors were Knowledge management processes, Organization and institutionalization of multi-project knowledge management, The use of ICT systems, Organizational knowledge culture, and Management commitment. These factors will be discussed below in more detail.

3.3.1 Knowledge management processes

Knowledge management processes is defined by Lindner & Wald (2011) as systematic processes to generate, store and retrieve knowledge (Lindner & Wald, 2011). Several researchers have attempted to break down these processes into parts. For example, Lawson (2003) defined six dimensions: creating, capturing, organizing, storing, disseminating and applying knowledge (Lawson, 2003). In a similar fashion, Shin, Holden, & Schmidt (2001) defines the processes as creation, storage, distribution and application of knowledge (Shin, Holden, & Schmidt, 2001). Gold, Malhotra, & Segar (2001), defined the processes as acquisition, conversion, application and protection of knowledge. In this sense, acquisition is defined similar to creation. A notable difference between other process definition is the inclusion of protection of knowledge, as it focuses hindering knowledge from leaking from the organization to competitors or other actors (Gold, Malhotra, & Segars, 2001). As can be seen, there is currently no unified definition of knowledge management processes. However, most definitions seem to agree on the basic four dimensions of knowledge creation, storage, distribution and application. Furthermore, Lawson (2003) raises two valid points. First, that organization of knowledge, i.e. filtering and sorting, should be considered. Second, that dissemination of knowledge, i.e. formatting and personalization depending on the receiver before distribution, is important. On the other hand, protection of knowledge, mentioned by Gold, Malhotra, & Segars (2001), can be argued to be separate from the other dimensions, since it covers a more external competitive view, while the other dimensions cover the internal management of knowledge. Furthermore, protection of knowledge can be said to be outside of the scope of this report. Therefore, this dimension can be excluded. To conclude, by comparing the different definitions of knowledge management processes by Gold, Malhotra, & Segars (2001), Lawson (2003), Shin, Holden, & Schmidt (2001), and Lindner & Wald (2011), they can be defined and summarized into the following six dimensions:
1. Creation of knowledge; both the discovery of new knowledge and the internalization of knowledge found outside of the organization.
2. Storage of knowledge; moving the knowledge from the individual level to the organizational level.
3. Organization of knowledge; filtering and sorting the knowledge, as well as creating relationships between knowledge.
4. Dissemination of knowledge; adapting a common language for the knowledge, allowing it to better be received within the organization.
5. Distribution of knowledge; creating channel for distribution, as well as allowing access to the knowledge for the organization.
6. Application of knowledge; where the knowledge is implemented and applied in a new setting within the organization.

Comparing these dimensions to the SECI model, researchers agree that the SECI model focuses primarily on the first dimension, creation of knowledge (Gold, Malhotra, & Segars, 2001; Allameh, Zare, & Davoodi, 2011; Nonaka, 1991). Therefore, by utilizing the dimensions above, one can discuss knowledge management further than just the creation of knowledge, whilst the creation still remains imperative.

3.3.2 Organization and institutionalization of multi-project knowledge management
Lindner & Wald (2011) argues that the organization of knowledge, a dimension identified in 3.3.1 Knowledge management processes, is a factor for success of knowledge management in temporary organizations. Moreover, they argue that instituting a project management office (PMO) ensures a high degree of continuity as well as increases the willingness of users to participate in project knowledge management activities. Furthermore, a PMO can help facilitate knowledge between temporary and permanent organizations, creating a way to backup knowledge within the permanent organization (Lindner & Wald, 2011).

To further discuss institutionalization in form of PMOs, one must first explore the different archetypes of PMOs. However, since the focus on this thesis is on knowledge management and PMOs in this situation is merely a tool, this description will not go in-depth in research on PMOs. Instead, the focus will be on the different types of PMOs from a knowledge management perspective. Descouza & Evaristo (2006) divides PMOs into two dimensions: administrative and knowledge-intensive (Descouza & Evaristo, 2006). According to Descouza & Evaristo (2006), for the knowledge-intensive dimension, four levels of knowledge management PMOs are identified. First is the supporter. This level is purely administrative and thus does not focus on knowledge at all. Second is the information manager. This is the lowest knowledge-intensive level, where the PMO store information primarily to track and report the status of projects. Hence, this level is also partially administrative. Moreover, this level does not often take initiative and has often no enforcement authority. The third level is the knowledge manager. This level acts as a repository for best practices (or, as mentioned above lessons learned). By acting as a repository, this PMO can be a knowledge base for projects, sharing expertise, mentoring and training. In comparison to the information manager, the knowledge manger focuses less on collecting information and more on collecting insights. The fourth and final level is the coach. The coach is even more knowledge-intensive than the knowledge manager. It has similar functions in that is collects best practices and insights from projects, however this PMO also has an enforcing function, allowing it to ensure that the learnings from past projects are pushed out in the organization (Descouza & Evaristo, 2006).

As can be seen from the archetypes above, both the level of involvement in knowledge management as well as the authority of the PMO can differ. In relation to the claim by Lindner & Wald (2011) regarding that PMOs can improve knowledge management in projects, one must therefore also consider what type of PMO to implement. While the implementation of the “right” PMO is a difficult task not discussed in
this thesis, it can in short be mentioned that according to Descouza & Evaristo (2006), the level of administrative functions contra knowledge-intensive should depend on the level of maturity of project management within the organization. In addition, it should be considered that a centralized organization reacts more accepting towards an enforcing PMO, while a decentralized organization often prefers that the interaction with PMOs is voluntarily (Descouza & Evaristo, 2006).

To further discuss PMOs with focus on knowledge management, one can discuss how PMOs can act as a knowledge broker between projects. Pemsel & Wiewiora (2013) investigated the possibilities for PMOs to act as knowledge brokers in project based organizations. They found that for PMOs to function as knowledge brokers, the PMOs must focus on two things. First, PMOs should improve their knowledge sharing capabilities, by improving facilitation of knowledge, process promotion and relationship promotion. This means that PMOs should strive towards improving relationships between departments so that there are possible knowledge flows within the organization. Second, PMOs should increase their boundary encounter activities, meaning that PMOs should have an active role on consulting and supporting activities that bridge the gap between projects (Pemsel & Wiewiora, 2013).

3.3.3 The use of ICT systems
According to Lindner & Wald (2011), ICT (information and communication technology) systems increases the project knowledge management effectiveness through both facilitating knowledge and by providing a way to store, search for and retrieve data (Lindner & Wald, 2011). However, one should note that other researchers have found that it was less important, see for example Adenfelt & Lagerström (2006). According to Lindner & Wald (2011), a reason that they found ICTs to be effective was that the projects they examined were conducted in multiple location, which made communication more difficult (Lindner & Wald, 2011). Thereby, it can be said that the effectiveness of ICTs is debatable and dependent on the possible communication methods available for the project. Because of the possibility of benefits from ICTs, the use of ICTs should be examined further. Sian Lee & Kelkar (2013) researched the how the use of ICTs impacted knowledge management. They found that the use of ICTs, such as telephones, email, instant messaging etc. supported all phases of the SECI model. First, they found that ICT supported externalization, in that it allowed persons to formalize their knowledge. Second, they found that traditional ICTs, such as telephones and email, were preferred for socialization. Third, e-collaborative systems were found to support combination in that users could find and access content and expertise else not available to them. Forth, repositories and e-learning systems were found to allow distance learning and intra-organizational transfer of knowledge, thus supporting internalization (Sian Lee & Kelkar, 2013). Further, they found that ICTs are not only beneficial for storing data, rather that ICTs can be used to maintain relationships as well as sharing experiences, which is beneficial for knowledge sharing. Moreover, a combination of multiple ICTs created the best effect for all SECI-phases, since it creates a quasi-real face-to-face interaction (Sian Lee & Kelkar, 2013).

3.3.4 Organizational knowledge culture
The organizational culture is another beneficial factor for successful knowledge management. According to Lindner & Wald (2011), while ICT systems are important, they can lack the ability to fully capture tacit knowledge within the organization. In comparison, the authors found that a positive culture which promotes a positive set of values, attitudes and expectations towards knowledge is greatly beneficial for knowledge sharing. Furthermore, it was found that culture can compensate for a lack of routines which is often common in temporary organizations such as projects (Lindner & Wald, 2011). Organizational culture should therefore be further explored.

According to Shein (1985) culture can be said to exist at three levels: basic assumptions, values, and artefacts. Basic assumptions represent how people understand situations and how they make sense of events around them. Values are more distinct, in that they are the beliefs of a group of people with the same culture. Artefacts represent the highest level. These consists of visible manifestations of culture, such as art, ceremonies and technology (Shein, 1985). Through these levels, one can describe a culture.
However, when studying organizations, the middle level, values is the most apparent as represent the culture of a group, in this case the organization. In comparison, basic assumptions forms at the individual level and artefacts on a societal level. When discussion organizational culture, one should therefore focus on the values of that organization (Kayworth, Alavi, & Leidner, 2005).

According to Gold, Malhotra, & Segars (2001), organizational culture can aid knowledge sharing within an organization. If a culture encourages employees to interact with one another, both formally and informally, the possibility of knowledge exchange is increased as employees will transfer tacit knowledge throughout their conversations (Gold, Malhotra, & Segars, 2001). Moreover, Shin, Holden, & Schmidt (2001) argues that organizational culture could be one of the strongest factors in spreading tacit knowledge in an organization, which in turn is imperative for building organizational knowledge. To achieve this, Gold, Malhotra, & Segars (2001) notes that it is important that the corporate vision guides the employees towards interaction (Gold, Malhotra, & Segars, 2001). It can therefore be said that having a core set of values promoted by the organizational vision is a strong factor for achieving sharing and management of knowledge.

3.3.5 Management commitment

Building on the discussion on culture, Lindner & Wald (2011) further argues that management commitment has a direct impact for knowledge management effectiveness, as well as in strengthening a knowledge management culture. Management commitment means that there should be a project leader who is responsible for knowledge within the project, as well as a supportive project organization that aids the project leader with these responsibilities (Lindner & Wald, 2011).

According to Gupta, Iyer, & Aronson (2000), Management commitment can pose a challenge for an organization, as it might require major changes in the organizational infrastructure (Gupta, Iyer, & Aronson, 2000). According to Hislop (2003), personnel may be reluctant to share knowledge within an organization. Therefore, focusing on management commitment for knowledge management is important for knowledge sharing, as a committed management can further motivate employees to share their experiences and expertise (Hislop, 2003). Moreover, Chiu & Chen (2016) found that commitment within the organization was one of the strongest factors as a mediator for the capability to process knowledge in relationship to the organizational effectiveness. This means that management commitment holds an important role for realizing the knowledge possibilities within an organization (Chiu & Chen, 2016).
4 EMPIRICAL FOUNDATION FOR ANALYSIS

This chapter introduces the underlying organization for the empirical study, to build an understand of the situation investigated. First, a general overview of the organization is presented. Second, since this thesis focuses on knowledge management in projects, the organization’s project model is explained to give insight in how projects are conducted within the organization.

4.1 OVERVIEW OF THE ORGANIZATION

The investigated bank is one of Sweden’s largest actors within the banking sector. The following data was taken from the bank’s annual financial report: As of the beginning of 2017, the organization had total revenues of around 40 billion SEK. Further, the organization have about 800 offices spread over six northern European “home markets”; the main market being Sweden. Besides these home markets, the bank also has additional smaller offices spread all over the globe. Throughout these offices, the organization currently have about 12'000 employees.

The bank defines itself as a knowledge organization, meaning that knowledge is deemed the most important asset. In addition, the bank is a decentralized organization, meaning that responsibilities for functions resides to a large extent on the individual units of the organization. Moreover, there is a strong culture for independence within the organization and most workers feel a strong sense of responsibility and control.

This culture follows through to the different units of the organization. For this thesis, the focus has been on two functions within the bank, functions for market and asset management (MAM) as well as the central IT function (CIT); the former being the primary focus. MAM is responsible for handling of investments for the bank. Moreover, MAM is in turn is divided into several individual functions response for different parts of the process of managing investments. These range from front office functions, such as customer connection and agreement, to back office functions, such as transaction reporting and using IT-systems. On the other hand, CIT is responsible for the maintenance and developments of IT systems for the bank. This includes both ongoing support for current systems as well as building completely new functionalities and systems. As the organization is heavily decentralized, this means that both MAM and CIT are fairly autonomous in their decision making. Furthermore, each function within both MAM and CIT also have decision making capabilities and control.

4.2 THE PROJECT MODEL FOR REGULAR PROJECTS

Here, the project model used for regular projects within the bank will be explained. While the bank primarily has an operative function of conducting banking, the organization continuously engages in projects to improve. Most projects at the organization have a focus on IT, such as developing or upgrading software for the organization. This focus is apparent through the setup of the project model. In this section, this project model will be described. First the process of project will be described. Second, the roles and functions for projects will be explained. Third, supportive functions for projects will be outlined.
4.2.1 The project process

The process to start, execute and finish a project follows a fairly strict process. This process can be described through four steps, see below, and is visualized in Figure 3:

1. Within an **organization unit**, a need for change to a current process is discovered.
2. Within the same unit, a **pre-study** is conducted to decide if the change should be pursued. A pre-study can stretch from a few weeks up to 6 months depending on the scope of the change.
3. If the change is deemed needed, an **investigation** is started, separated from the unit itself. The purpose of the investigation is to identify the size of the change, the dependencies within the organization, the resources needed, a cost analysis and the different solutions to how to conduct the change. The scope of an investigation can stretch from a few weeks to a few years.
4. After the investigation is finished, a **project** is started to conduct and implement the change for the unit that requested it. The project should, according to the model, be no longer than 18 months. As the project is finished, the product is delivered back to the organizational unit that requested the change.

Through this model, the bank aims to achieve a high level of control and traceability for the projects. Between each step, there are several template documents that should be filled in and controlled. Further, the organization hopes to be able to fully outline the project before it is started, through requiring both a pre-study and then an investigation.

To support the process model, the bank makes use of a database containing all relevant **templates** as well as outlining the project steps. Within the organization, a successful project is considered one which follows the templates, stays within budget and delivers on time.

Within the fourth step, “Project”, the template contains additional structures for how the processes should look. This is implemented through 6 **phases**, which are: Establish, Structure, Detail, Complete, Verify and Implement. With these phases, the bank wants to achieve a high level of planning and control, as well as allowing project personnel to know how far in the project they have reached. The phases focus primarily on what they are called, meaning that the first few phases are focused on establishing the project, structure the process and detail what should be done. Following this, the project moves on to completing the task at hand and verifying its success. Finally, the project should implement the solution into operations.

4.2.2 The roles in the project

For each regular project, there is a set of roles that should be appointed, to divide responsibilities and tasks between the persons relevant to the project. These roles are described in short below:

*The Project Leader* is the leader of the project and the main person responsible for the success of the project. The main tasks of this role are making sure the project follows the template project model. This includes planning, arranging meetings, requesting resources and budgeting. The role is commonly appointed form the IT unit (CIT), since it is the unit primarily responsible for IT within the organization.

To aid the project leader is an **Operations Manager**, who is responsible for the communication with the unit of operations affected by the project. This role is responsible for making sure that the operations
unit is onboard with the project changes. As from the name, this person usually comes from the operations parts of the organization.

To start a project, a Project Commissioner is required. This person usually comes from the unit which identified the need for a change. The project commissioner is not itself a part of the project, instead this person sits at the receiving end unit throughout the process. This person is responsible for finding resources from operations as per requested by the project leader, as well as decision making regarding the project solution from an operations perspective.

Finally, from the IT side of the organization a Project Responsible IT Manager is required. This role is responsible for finding resources from the IT department, as well as to monitor how the IT infrastructure is affected by the project. Similar to the project commissioner, this person is not a part of the project but work closely to it.

Besides these core roles for the project team, the project team requests resources from different units within the bank, depending on the needs of the project. Commonly requested personnel can be said to be key personnel from operations who can aid in clarifying demands on the project, as well as developers from IT who can work with developments and upgrades. This means that the core group for the project consists of the roles listed above, however other personnel can be more or less involved in the project depending on the topic. Moreover, at the organization it was encouraged that personnel from the receiving end unit for the projects should be active during the project process, to gain insight in what was being developed. Preferably, the project should use as much personnel as possible to allow for an easy transition back into regular operations.

The roles create several channels for communication between a project and operations. First, there is a direct communication between the project leader, on the project side, and the project commissioner, on the receiving end, to make sure that the project is in line with the requirements set up by the operations unit requesting the project. Second, the project commissioner also communicates with the operations manager of the project, who in turn communicates directly to operations. Third, the project leader can use the same communication with the operations manager to communicate with operations. Fourth, the project group can use the Project Responsible IT manager to communicate with the IT side of the project.

4.2.3 The supportive function for projects
To aid projects, the bank makes use of project offices. These are a permanent part of the organization and there are several of them. For this thesis, the focus has been on the operations project office (MAM) and the IT project office (CIT). The goal of these offices is to support the projects through guidelines, development of the project model and to aid the different roles of the project succeed in their tasks. One can say that the project offices aids with the procedural parts of the projects, that is, the processes of a project itself, regardless of the specifics of the change that the project is implementing. Furthermore, the CIT project office is responsible for handling and updating the project templates, which as mentioned is used by project leaders when conducting a project.
5 Analysis

In this chapter, the empirical data for the study is presented and analyzed in its context. First, the regulation projects for the organization are introduced and their main differences to regular projects are outlined. Second, the findings from the interviews are described, divided into themes.

5.1 Introducing the Regulation Projects

As mentioned in 1.1 Background, during the recent years authorities around the globe has realized that to prevent future financial crises and create transparency as well as prosperity in the financial sector, firmer regulations are required. Because of this, there is currently several ongoing creations of stricter financial regulations for different stock markets. These regulations will, when set in motion, drastically affect the way banks do business. During the time the regulations are created, they go through several official and public channels, which allows banks to prepare for the coming changes. At the bank, it was identified that regulations affected several different functions within the organization. Hence, the bank decided to start projects for each function, which served to change the different functions to become compliant with the different regulations. Note here that the projects were divided per function, not per regulation, which meant that one project could work with several regulations, if the all affected the same function. An example would be that all regulations regarding tax reporting were group into a “tax reporting”-project. For this thesis, these projects will be called “regulation projects”. This section is divided into two parts: first, the difference between regulation projects and “regular” projects are described. Second, the additional supportive functions specific for regulation projects are presented. Further, the information presented below is an aggregate of the descriptions of regulation projects as given by the interviewees.

5.1.1 How regulation projects differ

As the project model for the bank was introduced in chapter 4, it should be important to note that the regulation projects differ from “regular” projects in several ways which are important when discussing knowledge management. These differences are outlined below:

First, one should note that the regulation projects are started because of requirements from an external part. That is not to say that the regulation projects do not have an internal project commissioner, however the underlying reason for the projects is that new international regulations demand that the bank act in a specific way. For example, new regulations may set requirement for management of customer data or how to report transactions. Moreover, following these regulations is not voluntary; in fact, when new regulations are put in action MAM is obliged to comply. This has led to the odd situation where a project is started to make the organization compliant, where the project does not have a clear commission nor a clear unit of operations to be the receiver of the project. Moreover, while regular projects often have a few selected units that the project should deliver to, regulation projects usually affect a large part of the organization. This means that identifying units that the regulation project should deliver to becomes critical.

Second, the launch of these new regulations is determined by the regulation facilities that create and distribute the regulations. Furthermore, as regulations are founded through law it is imperative that the regulations are being followed as soon as they are launched. This which means that the deadlines to finish the projects are set by an external part. Moreover, this means that projects cannot be delayed the same way as regular projects; a delay would result in non-compliance which could cause high fines for the bank. In sum, the regulation projects must therefore be finished before the external deadline.

Third, while the regulation faculties notice several years in advance what new regulations that are about to be launched, the specifics of a regulation set are often difficult to define. This difficulty is further strengthened by the fact that the regulation faculties often sends out guidelines which define how the
regulations should be interpreted. These guidelines are sent out sporadically after the first notice and are often changed several times up until the actual launch of a regulation. In short, this means that MAM must be adaptive to changes during the whole project process.

Fourth, the general rule at the bank is that a project should not extend 18 months. However, since regulations take years to implement and changes several times during the process, the regulation projects often span over years, which means that they end up being much longer than regular projects. This creates a situation which is uncommon for the bank, since the regular model is built around a much shorter timespan than the timespan for regulation projects. In sum, it can be said that the regulation projects exceed the projects maximum time limit, as set by the project model at the organization.

Fifth, the regulation projects that were currently being implemented were so many that the bank was reaching short on personnel available for the projects. As mentioned, according to the project model most project should include as much regular personnel as possible in the projects. However, as personnel was not available or already under a full workload, the bank had had to hire external consultants for the projects. Hiring consultants was common practice for the bank, but nevertheless the current level of consultants was a new high. Moreover, some regulation projects consisted almost fully of external consultants.

To summarize the differences between regular projects and regulation projects, it can be said that regulation projects are forced to start by an external part, the deadline is set by an external part, there are rapid changed to the requirements for the projects during the project process, the projects far exceeds the standard 18 months and there is a much higher level of consultants than usual.

5.1.2 The additional supportive functions for regulation projects
In addition to the project offices that support regular projects at the bank, the regulation projects have support from two additional sources, one internal and one external. These two are presented below:

The first supportive source was the internal one. When more and more regulation projects were started, the bank started to notice similarities between these projects. Since several projects worked with the same regulations from different perspectives, they often faced similar issues in regard to for example interpretations of regulation paragraphs. Because of these similarities between projects, MAM decided to form what they called a “temporary umbrella organization” (from now on “the umbrella organization”), which in short can be defined as a network binding all the related regulation project together. This organization was temporary, meaning that it would end when the regulation projects finished. A head of the umbrella organization was appointed, with the purpose to create interaction between the different related projects. In short, the umbrella organization acted as a forum, where different roles from different regulation projects could meet and share their current work and discoveries. The goal of these forums was to motivate communication between projects and to avoid that different projects worked on the same tasks.

The second supportive source was the external one. As regulations affect every actor on the financial market, the financial actors in Sweden, the bank among them, used The Swedish Securities Dealers Association (SSDA) to handle issues that arose with regulations. The SSDA arranged meetings where financial actors could bring questions regarding regulations, where the SSDA could reach a unified decision of interpretation of these regulations. These interpretations were the forwarded to relevant authorities for confirmation. Thereby, the SSDA was a great source of interpretations as well as a discussion forum for the bank.
5.2 Thematic Presentation of Interview Findings for Knowledge Management

In this section, the empirical findings directly related to knowledge management within projects as well as knowledge transfer between projects and the organization are presented. The findings are focused on knowledge management within regulation projects, however some empirics in relation to regular projects are also presented, to create room for analysis of differences. As regulation projects are the main focus of this thesis, these are the projects primarily discussed. For clarity, it is explicitly stated when the findings relate to regular projects. To create cohesiveness in this section, the findings are divided into different themes in relation to knowledge management. As discussed in chapter 2, these themes were created through analysis of the findings, while considering important themes from the literature. First, it is discussed how knowledge is built within the studied organization. Second, the knowledge types in the projects is described. Third, the communication methods at the studied organization is outlined. Fourth, the documentation is explained. Fifth, it is described how project delivery is made. Finally, the supportive functions for projects are investigated.

5.2.1 How projects and personnel build knowledge

To begin with, it should be discussed how the interviewees explained how they found and built knowledge within the organization, both for themselves and for their respective projects. When they were asked how they gathered knowledge, the direct answer given by all was that they simply “asked”. It was explained that since the bank is highly decentralized, one could more often than not simply go to the person who had knowledge and ask this person. There was no need to request permission from either person’s manager nor to go through any formal channels. On the contrary, a simple e-mail or phone call was enough to establish contact. Furthermore, it was said that the bank encourages that personnel interacted with one another and most personnel was open to answer questions when asked. Through this, the interviewees all agreed that the bank culture was a strong enabler for knowledge sharing. By not having to follow strict formal channels, the culture allows personnel to come in direct contact in no time at all. Further, for the regulations projects the majority of the involved personnel reside in one of three central offices in Stockholm, Sweden. This allows for spontaneous interaction throughout the day which further allowed discussions. One interviewee noted:

One can solve world problems by just meeting in the coffee room.

To further discuss this in the light of regulation projects, it can be said that the culture for easy discussions and meetings at the bank was a strong enabler for knowledge building, since the project team could go directly to the source of the knowledge they seek. However, this raises the question of how one can know who holds certain knowledge. Unanimously, the interviewees responded that the most important asset in their work was to have a vast network of relationships within the organization. Strengthening this, most interviewees said that they had worked at the bank for over 10 years, which in this organization was highly common. When an operations manager was asked how they knew who to ask for something within the organization, it was answered:

Many stay within the bank so if I have a problem I know who to ask. I can contact that person directly.

From the same question, another interviewee answered:

You should have an awesome network within the bank. That is also why it is tough for [external] consultants. If you have been here a while you know who to ask.

While the personnel greatly benefitted from the culture and their vast network at the bank, external consultants hired for regulation projects were at a loss. The consultants interviewed claimed that finding knowledge without a network within the organization would be difficult at best. However, since no consultant interviewed worked in a project which was fully consultant driven, they all found at least one
person who had a large enough network to allow them to find knowledge. Through that network, they gained the opportunity to utilize the openness of the bank’s culture. An interviewed consultant said:

I don’t keep track of [the knowledge of others] in detail, instead I am dependent on other employees.

From this, it can be seen that having many consultants in regulation projects currently does not hinder the access of knowledge, however it poses a risk if the consultants have issues finding a network facilitator.

From the interviews, issues regarding “givers” of knowledge, the personnel who was asked questions daily, were identified. Since everyone in the organization easily can contact the ones who have the knowledge needed, several interviewees noted that some within the organization becomes overloaded with requests. For larger requests, it is therefore common that projects should request a certain amount of time from the person holding the knowledge. This system is set in place to hinder that one person becomes overloaded with requests. However, from the interviews it was still determined that some within the organization were put on a much heavier load than the rest. A project leader noted:

Everybody wants the most competent employees. Sometimes their time is divided [between projects] hour by hour.

In sum, the bank had a culture that allowed for easy access directly to the knowledge that was sought, which was highly utilized by projects and personnel. However, two problems were identified. First, as much was dependent on the personal network within the organization, consultants faced a risk of not being able to find knowledge. Second, while the culture at the bank is great for the people searching for knowledge, it can cause overload and disruption of tasks for key personnel since they might get requests and questions too often.

5.2.2 Different types of knowledge in projects

It was found during the interviews that interviewees discuss “knowledge” from two separate perspectives: Knowledge of the project’s form (form knowledge) and knowledge of the project’s contents (content knowledge). Form knowledge can be described as the knowledge of how to run a project and how to manage the project process. An example could be knowledge regarding how to most efficiently arrange meetings. On the other hand, content knowledge can be described as the detailed knowledge of the specific solution that is created within a project. An example for this is knowledge of how a regulation will affect the layout of a report.

It became apparent during the interviews that the focus for most people in the organization who worked with projects were on the form knowledge. Several interviewees discussed what they had learned in regard to how to work with other people and how to help the structure and planning of the project. On the other hand, interviewees seemed to be less focused on the content knowledge within their respective projects. When asked, several interviewees had trouble understanding how knowledge regarding the content could be managed. Content knowledge was seen as something that simply happened, in the sense that it was automatically built during the project. This view can hold true for regular projects, considering that most regular projects at the bank were primarily focused on development and upgrading IT. The reason for this is that software has, by its nature, a structure of how it is built. When one wants to change software, that person therefore only needs to go into the structure and read it.

This is, however, not to say that the bank completely neglected content knowledge. From the interviews, it was gathered that requirements for a project’s solution was controlled through documentation, with additional documents to control how the solutions fulfilled the requirements. Further, workshops and meetings were also documented, including the content discussed and the decisions that were made. Nevertheless, the handling of content knowledge was done much less in comparison to form knowledge; while form knowledge was structured and uniform for all the projects interviewed, content knowledge
was far less structured and seemed to be more dependent on active individuals and less on the project model.

5.2.3 Communication
An important factor for knowledge management and transfer is communication within an organization. As similar to the openness in contacting people at the bank, the communication methods follow suit. Interviewees stated that they used several communication methods; including face-to-face meetings, e-mails, phone calls, video calls and instant messaging. As for which method was most common, most interviewees agreed that an initial face-to-face interaction was preferred if possible, to establish a relationship. From that meeting, the communication methods differed depending on the situation at hand. Furthermore, interviewees most often confirmed their meeting with an e-mail afterwards, to make sure that they had a common understanding. Moreover, stemming from the fact that most personnel sit close together and spontaneously meet, interviewees said that beside the regular update meetings, there were often informal meetings when they discussed what was currently on their mind.

From the view of communication, the delivery of the regulation projects differed between different projects. Some interviewees said that for their projects, the delivery was a set of meetings during some weeks, where the project solution was presented. For other interviewees, there were only one meeting and for some there were an extensive set of meetings and internal learning meeting. In short, it can be said that based on the project model for the bank, there should be at least a final meeting for delivery. However, most interviewees agreed that the number of meetings and other activities differed widely depending on the project. It can therefore be concluded that there was no standardized process for project delivery as the organization. Instead, it appears project delivery was dependent on the deliverer and receiver.

5.2.4 Documentation
Interviewees discussed that documentation was highly important for the organization. An operations manager noted that

[Documentation is] the core of what we do.

This could be seen throughout the whole organization. For operations, the personnel had written instructions for almost every task. Similarly, on the IT side of the organization the systems had an extensive amount of documentation for how they worked. In this section, the documentation process within the projects will first be explained. Afterwards, the transfer of this documentation to receiving units will be described.

Documentation within projects
Within the project model, there were several mandatory documents for the process. At the start of a project, a founding report was required, outlining the goal, cost, resources required among other things. Following this, monthly reports for the current situation of the project was required, as well as a final report as the project was finished. Combining this with the types of knowledge mentioned above, these reports were focused primarily on form knowledge, keeping the form of the project in check. Regarding solution knowledge, it was said that decisions and demands were continuously documented and updated throughout the project process.

Most documentation was done through a combination of meeting records and requirements-and-decision logs. Requirements-and-decisions were logged primarily through excel sheets, which were updated throughout the project. All these documents were saved within a regular folder system with the project name as the main folder. Most projects had a basic structure of folders for keeping track of the documentation, however interviewees noted that these folder systems more often than not started living their own life, in the sense that the project members created a folder system that made sense to them, but maybe less sense to an outsider.
Several interviewees agreed that most personnel documented most everything they did. However, this had caused issues for projects. It was noted that projects tend to create excessive documentation, resulting in large stacks of documents. Combining this with the folder structured previously mentioned, several interviewees claimed to have difficulty browsing through old documentation. A project leader noted:

*It is an art to create useful documentation that can be used in a critical situation.*

From the interview, it was further explained that a critical situation was a situation when the interviewee had to find answers in documentation within a short time. This points toward an interesting situation. The organization did not have trouble with lack of documentation, instead there were issues with excessive documentation, which was so excessive that it was difficult to take in. When the interviewees were asked how they usually found prior knowledge and decisions, most agreed that they preferred to find and ask a person who knew about the knowledge, rather than searching through old documentation. It was said that even when they had the documentation of previous projects, they would prefer to go the extra mile to find someone who worked on the project instead. In short, traceability in documentation faulted, which greatly reduced its value. This was emphasized by a project leader, saying:

*I’m not sure if people are good at documentation. I usually think that it is difficult to find stuff.*

Moreover, when asked about traceability another project leader noted:

*Many of the big projects suffer from it. There is so much documentation that you cannot see the forest because of all the trees. [...] We should make compilations on some higher level.*

Building on this was the naming of documents. When asked, interviewees agreed that documents were named based on the process. Examples could be “meeting protocol 2017-01-01” or “Demand specification 2017-01-01”. This naming technique was beneficial in the way that it showed what kind of document it was. However, the naming itself did not mention what was decided or changed in the document. When asked how interviewees knew where to look for a change in a document, most responded with that they had to guess the date the change was made and then find related documents for this. In the same vein, documents lacked an easy way for the reader to identify what had changed for the specific document. It can therefore be said that the projects currently lack an efficient way to store documents, as well as for searching through old documents.

Most interviewees agreed that they kept a good documentation standard in their project. However, at the same time most agreed that browsing through the documentation of other projects was a tedious and difficult task. This shows an intriguing relationship; it seems that the documentation standards were set within the project team, resulting in that each project created their own system of logs and documentation. Combining this with the excessive amount of documentation done, it resulted in that document folders were best avoided by personnel outside of the teams.

One interviewee shed some light over one part of the project process that lacked documentation. It was said that when the project decided to exclude something from the project, the decision to exclude sometimes was not often documented. Moreover, it was therefore said that figuring out why something was not done earlier, the interviewee had faced difficulty. This was because it was less apparent for the project to document decisions to not do something, in comparison to decision to do something.

To sum up the documentation in relationship to knowledge management within the projects, it can be concluded that most knowledge is documented during the project, which means that it can technically be found in the future. However, the documentation standards and excessive documentation resulted in that the traceability of documentation became weak.
Transfer of documentation

Following the documentation within projects, interviewees were asked questions regarding how this documentation was delivered to the receiving unit at the end of the project. According to interviewees, the delivery of documentation from projects was an important part in knowledge transfer. However, there seemed to be no unified process for how this is done. One interviewee said:

*It is up to receiver and deliverer to decide what is to be handed over.*

Another interviewee further explained how project folders are handled:

*It is up to the receiving organization to decide what they want to do with the folder.*

Furthermore, it was not fully clear which unit received the main project folder. From what was gathered, it seemed like more often than not the main project folder was delivered to the group with the project commissioner. For other interested parties, the main form of documentation delivery was the updating of the instructions for these parties, as each operations unit had an instruction set describing their workflow.

Regarding how the documentation folder was later used by the receiving unit, it seemed like it usually was left to dust, if not anyone had a reason to search through it. Further, since most interviewees said that finding knowledge in old documentation was difficult, they usually preferred to find and ask a person who had been involved in the project instead, which is in line with the reasoning of poor traceability for personnel outside of the project team. This means that even in the cases where documentation was delivered, it seemed as it was hardly used. When asked about what happened with knowledge in a finished project, an interviewee noted:

*There was documentation. But they still call and ask how things work.*

When interviewees were specifically asked about documentation and delivery, most interviewees only referred to the project report, which was to be written by the project leader when the project finished. This report mostly built around the form knowledge of the project. It was said to contain budget, time, what was delivered and learnings in regard to how the project was run. In comparison, no interviewee mentioned anything regarding a report of how the content knowledge in the project was developed. Nevertheless, it was said that specifications of requirements were delivered, which stated how requirements for the project was fulfilled. Regarding the project report, an interviewee pointed out the following:

*[The report] is put somewhere central. But you don’t look at project reports very often and don’t learn from them.*

5.2.5 Project delivery

Besides the documentation at the delivery phase for the project, interviewees were asked how the delivery was planned to take place. According to the interviews, a project usually has more parties to deliver to, besides the project commissioner. Because of this, being able to transfer knowledge to all parties becomes imperative to a project’s success. Moreover, project usually have to deliver some kind of IT solution, which is both to be used by operations, as well as maintained by IT. This means that both usage and maintenance have to be delivered.

Transferring knowledge from the project to the receiving units does, however, start fairly late in the project process, according to most interviewees. The reason for this has traditionally been because both IT and operations have had project members in the project, which has created an automatic transfer of the project knowledge. One interviewee said:

*[Knowledge transfer] is more built into the model. We work with it automatically in the projects [...] but we don’t work with it on an overall level in any way.*
Moreover, a project leader claimed:

*You should always have employees in the project. [...] Since I have employees in my project the transfer is natural.*

The difference that regulation projects had from regular projects was, however, that there was an increased number of consultants within the projects. From a knowledge transfer perspective, consultants have one important difference from personnel, namely that they leave the organization when the project finishes. Hence, the normal automatic transfer of knowledge which has been used at the bank falters which creates a risk of losing out on knowledge. When interviewees were asked how they planned to preserve consultant knowledge at the project closure, it was simply said that it was difficult, but no clear solution was presented. Consultants often had to write a report, but there were no other plans for knowledge transfer. This was clarified by an interviewee:

*There is currently an investigation regarding how we should bring [the consultants] knowledge back to operations. It is a big challenge at the present.*

On the other hand, the bank has an alternative solution to losing knowledge from consultants. Many interviewees said that consultants were often rehired for several projects, which led to that some consultants worked for the bank for many years. A consultant who was interviewed had consulted the organization for over 4 years through several projects and thus was very accustomed to the organization. This means that even though consultants go to other projects, they at least often remain in the organization, which means that they can be contacted at a later date. However, as consultants are the first to go, this is not a sustainable solution.

When discussing project delivery, it is reasonable to discuss why transfer of knowledge during the delivery is even important. From the interviews, it was gathered that for regulation projects there could often be shifts in how the regulations should be interpreted during the project time. Further, regulations kept slowly changing after the regulations were put in place. Moreover, some regulation projects were currently working with reviewed versions of regulations, meaning that the regulations had been reviewed by authorities and changed to newer versions.

Another interesting point for knowledge transfer is what kind of product that was delivered at the end of the project. Interviewees agreed that what was usually delivered was a solution for the problem at hand, for example changed in IT and operations to become compliant. However, when asked, interviewees were unsure what happened to the content knowledge regarding how they reached the final solution. Several interviewees said that projects spanned over several years and that the knowledge from that was impossible to transfer during the final few months. This shows an interesting aspect for knowledge transfer, which is that several interviewees saw delivery simple as the final step of the project process, at the same time as they acknowledged that transfer of all knowledge during this period was troublesome at best. One interviewee said:

*We have a couple of delivery meetings during a few weeks. It would be great if the [the receivers] participated in the testing. We try to do that, but can’t always make it work out.*

5.2.6 Supportive institutions for regulation projects

From the academic side of knowledge management, there is much focus on the institutionalization of knowledge, to allow knowledge to be accessed from all over an organization. Because of this, interviewees were asked if projects interacted with supportive units outside of the project. The three main supportive units listed by interviewees were the project offices, the umbrella organization and the SSDA.
All interviewees agreed that the primary function of the project offices was to aid the project with administrative matters. These were allocation of resources, planning and structuring the project, budget etc. From a knowledge standpoint, the project offices were not at all involved with the projects. Furthermore, when interviewing the project offices, they too confirmed that they primarily handled administrative aid to projects. Nevertheless, one should note that project offices discussed lessons learned exercises for projects. However, these were not done consistently nor utilized to any greater extent.

The umbrella organization, which was specifically created for the regulation projects, worked quite differently. The main goal of the umbrella organization was to combine the different regulation projects and help them work together. This was mainly focused around hosting workshop meetings, called forums, where different projects meet and discuss their current work. Through these meetings, projects got an overview of what other projects were doing. This in turn allowed them to meet up and discuss with projects that were facing similar issues. Through this, the umbrella organization allowed for knowledge sharing between projects. Further, the umbrella organization helped in managing the documentation from the regulation projects. This was done through a main folder for the umbrella organization, where all other projects were hosting their own project folders. However, as noted by interviewees, the same documentation issues as mention earlier still remained, as only the complexity of the folder structure was raised through this system. To summarize, the umbrella organization aided the facilitation of both form and content knowledge between different regulation projects, through meeting and documentation hosting.

The SSDA had an interesting role in relation to the projects. Through the SSDA, the bank gained the opportunity to discuss the current issues for regulation projects with other actors within the financial market. The SSDA therefore worked as a large solution knowledge builder for projects, in that the SSDA made decision on interpretations of regulations, which was then forwarded to the financial actors, thereby the bank. In the same vein, could the bank’s regulation projects lift questions to the SSDA, to gain clarity in how to act. The SSDA was therefore, from what was gathered at the interviews, a source of creation of content knowledge for the regulation projects.

In regard to project delivery, both the operations and IT project office said they were not much active. According to the project model, the final project report should be delivered to the project offices. The project offices then compared this report to other projects’ reports and released a combination report every year. Besides this, however, the project offices had little interaction with the projects in the final stage.

On the other hand, the umbrella organization was currently in the planning phase for organizing a combined delivery for the regulation projects. the reason for this is that it was found that several regulation projects were delivering to the same parts of the organization. There was therefore a risk of overwhelming the receivers. Because of this, the delivery of the current regulation projects would be synchronized to make it easier for the receivers.

The umbrella organization itself does create an interesting situation for delivery. As mentioned above, for the regulation projects the umbrella organization kept all documentation in a unified regulation folder. The “owner” of this folder was the head of the umbrella organization. This raises the question of what happens with this folder when the umbrella organization is closed. According to the interviews, there currently seem to be no plan for how to deliver the knowledge from the umbrella organization as a whole.
5.3 The Need for Knowledge Management

Concluding this chapter, it can be said that there is evidence of a need for knowledge management. From the case study, several pieces of evidence for this was found.

First, it was found that the regulation projects spanned over long periods of time. This resulted in a situation where there was a strong possibility that project members forgot what happened initially in the project, as there was no proper way to manage knowledge over longer periods of time.

Second, this was further strengthened by the fact that regulation projects were based on interpretations that shifted over time. This creates a strong need for transferring knowledge from projects to the organization and retaining it. The reason for this is that without knowledge of how regulations have been implemented previously, changed becomes more difficult. As an example, if a specific paragraph in a regulation affects part A of a system and that paragraph changes, the bank must change part A. However, if they lack the knowledge of this relationship, they might have to review their whole system. This example was based on an aggregation of interview responses. Many interviewees said that for some of the earliest regulations, the knowledge from the correspondent regulation projects were missing. This had led to a large amount of rework for later projects. Additionally, the later regulation projects had had trouble revisiting changes made in earlier regulation projects, since they did not know exactly why some changes were implemented the way they were.

Third, the regulation projects utilized many consultants, as available personnel were limited. This hindered the automatic knowledge transfer process that the organization had set up by having projects being based on personnel, who later returned to their respective units with the knowledge. As this automatic transfer was no longer possible, there was a need for formalized knowledge processes. Moreover, while the organization had a system in place to rehire consultants to keep them in the organization, this system creates risks. The reason for this is that consultants might become invaluable. However, as consultants usually are the first to go when issues arise for an organization, there are risks in that these invaluable resources are lost.

Because of the above, it can be seen that knowledge management is an imperative factor for regulation projects, as a lack of knowledge management can lead to both delays and loss of knowledge, which can result in extending the project completion time and thus resulting in high costs for the organization.
6 DISCUSSION

In this chapter, the analysis is discussed in light of the literature. Knowledge management is a subject which can be analyzed through many different areas and themes, as seen both in chapter 3 and 5. Because of this, there is a need for structure. This chapter will begin with proposing three focus areas based on the analysis to be used for discussion. These areas will then be discussed in detail. Finally, an improved structure for these focus areas will be created based on the discussion.

6.1 FOCUS AREAS

In chapter 5 Analysis, the findings were presented based on themes identified during the interviews in conjunction with common themes for analysis in the literature. From these themes in combination with the literature, it can be seen that the focus should be in three areas of knowledge management, shown in Figure 4: First, one should discuss personnel’s understanding of knowledge, as it was found that personnel had issues with the concept of knowledge and its implications. Second, the knowledge management processes, as discussed in 3.3.1, faced several issues in the investigated organization and should therefore be discussed. Third, one should discuss institutionalization as a mean to support knowledge, as it played an important role in the literature while the studied organization was facing issues in this regard.

Figure 4: Focus areas for discussion

These three focus areas for knowledge management, seen in Figure 4, will therefore be used as a structure for the discussion below. Within each focus area, key topics found in the analysis will be defined and discussed in light of the literature.

6.2 UNDERSTANDING KNOWLEDGE

To begin with, it was found that personnel in the investigated organization had trouble understanding the concept of knowledge. According to Toyama, Konno, & Nonaka (2000), one cannot utilize the benefits of knowledge management without this understanding (Toyama, Konno, & Nonaka, 2000). Furthermore, from the analysis it can be seen that this understanding can be divided into three separate topics: defining knowledge, differentiating between different types of knowledge, and differentiating between knowledge of different subjects. Therefore, these subjects will be discussed below.

6.2.1 Defining knowledge

To become open to knowledge management, one must first understand what knowledge is and what separates it from information. From the findings, it can be seen that the bank describes itself as a knowledge organization. However, at the same time it was found in the case study that the organization itself does not have an active role in managing its knowledge. As discussed in the literature review, it is important to note the difference between knowledge and information to fully grasp why knowledge management is important, see for example Toyama, Konno, & Nonaka, (2000), Shin, Holden, &
Schmidt, (2001), and Alavi & Leidner (2001). However, during the interviews it was found that most interviewees used the terms information and knowledge interchangeably. Nevertheless, distinguishing between knowledge and information to be able to manage the knowledge can give a long term competitive advantage (Bhatt, 2007; Müller & Pemsel, 2012). The first step in strengthening knowledge management for an organization can therefore be said to be to realize this difference, to allow the personnel to realize that knowledge should be managed.

As was found during the interviews, many stated that “good” documentation was an art difficult to master. I believe that one reason for this is the lack of differentiation between information and knowledge. Following the definition of knowledge used in this thesis, knowledge is as stated “the dynamic process of human interpretations of information created within specific context”, see Toyama, Konno, & Nonaka (2000) and Hayek (1945). If documentation in an organization is only focused on information, the documentation will lack both the context and human interpretation that made it understandable.

Similarities to this can be seen in the case study, as most interviewees preferred asking a person over reading documentation. By utilizing this direct communication, they are much more likely to be given the information from the asked persons perspective, giving it both context and human interpretation, resulting in knowledge rather than information. Hence, the interviewees managed to find the knowledge surrounding the information that was documented. However, when they processed documentation they mostly found information, which was insufficient for their work. In short, an active knowledge attitude can contribute to more understandable knowledge sharing and documentation, as well as create a long-term competitive advantage for the organization. Moreover, this knowledge attitude is founded on the understanding of the definition of knowledge.

### 6.2.2 The importance of differentiating between different types of knowledge

In addition to acknowledging knowledge, the benefits of realizing the differences between tacit, implicit, and explicit knowledge, as described by Takeuchi & Nonaka (1995) and Frappaolo (2006), can be found in the case study. Several interviewees stated that the organization relied heavily on expertise in the personnel, meaning tacit knowledge, and that this expertise cannot be fully documented. However, when asked how this was managed no clear answer was given. Realizing the differences between the types of knowledge can, however, aid in the management of expertise.

From the interviews, it was found that documentation was conducted in great extent at the organization. As for explicit knowledge, it can be handled via documentation, as was shown at the organization. However, it was found that personnel tended to document information rather than knowledge. Only documenting information would hinder the articulation of knowledge which would have made it explicit, leaving the organization with implicit knowledge, as described by Frappaolo (2006). Furthermore, it seemed as most of the interviewees struggled when knowledge moved away from explicit, as they were used to solving problems mostly through documentation.

As for tacit and implicit knowledge, one must find alternative paths for management. For implicit knowledge, there are possibilities for documentation as this type of knowledge has the possibility of becoming explicit. Nevertheless, one should not fully rely in documentation for implicit knowledge, as it is less formal that explicit. Regarding tacit knowledge, it is by nature unstructured and cannot be formalized. To manage and spread this type of knowledge, the organization could instead take greater focus on the interaction between personnel.

Informal interaction and communication can be a beneficial when working with tacit knowledge. This could be seen at the studied organization, as the culture was a great benefactor for how knowledge was built within the organization. The organizational culture further receives support from the literature in being a strong factor for effective knowledge management (Lindner & Wald, 2011). In this sense, this thesis further strengthens the notion that organizational culture aids effective knowledge management.
From the findings, it can be seen that there was no intentional focus on managing different types of knowledge within the organization. On the other hand, there were systems in place that accommodated for all three types of knowledge to a certain extent. As the attitude of different types of knowledge is implemented in the organization, it can therefore be recommended to further increase the understanding for different types of knowledge and thus allow personnel to actively consider it in their work.

6.2.3 The importance of differentiating between knowledge of different subjects
It should be noted that a project can contain knowledge of different subjects, as was shown in the case study with the analysis of form and content knowledge. It was found the projects at the studied bank were primarily focused on the knowledge which in was called form knowledge. As the regular projects at the bank were more focused on doing, rather than learning and doing, this focus on form was reasonable. However, with the differences that the regulation projects have in comparison to regular projects, there is a clear need that the focus must shift towards content knowledge.

There were several pieces of evidence for shifting the focus toward content knowledge found in the case study. First, interviewees raised issues with the shifting nature of the content in regulation projects, as the regulations themselves were changed during the project process. As regulations changed, the content itself became more difficult to handle as the project team had to keep track of the changed and be ready to modify their solution based on these changes.

Second, the regulation projects were also longer than regular projects. It was found that the regulation projects had issues with retaining content knowledge as the project progressed over several years. Moreover, as there was no clear handing of content knowledge in place, project team members had to backtrack old content, which causes delays in their project process.

Third, there were a larger number of consultants in the regulation projects. This resulted in a weaker “automated” knowledge transfer than that which was regularly used by using personnel in the projects, in which they took the knowledge back to their respective units. Instead, the content knowledge was stuck at the consultants, who then left the organization at the end of a project.

Through this, one can see that besides acknowledging knowledge and understanding different types of knowledge, one further benefits from understanding that there is knowledge of many different subjects within a project, in this case knowledge of form and content. Moreover, one should not forsake any of these subjects. In the case study, by not addressing the issue of content, issues arose that personnel had trouble finding solutions for. Crucial to finding these solutions is understanding the difference between form and content and adjust the project model to accommodate for both. Furthermore, this shows the importance of realizing that a project consists of knowledge for many subjects, where form and content are examples.

6.3 KNOWLEDGE MANAGEMENT PROCESSES
It was found in chapter 5 that the knowledge management processes at the studied organization faces several issues. These issues will be discussed in light of the literature. In section 3.3.1, six different dimensions for analysis of knowledge management processes was defined, based on an aggregation of prior studies. These dimensions will be used as a foundation for this discussion. However, when comparing the dimensions to the analysis it was found that several dimensions overlapped. Therefore, the dimensions have been grouped based on the overlap, resulting in three groups: Creation of Knowledge; Storage, organization, and dissemination of knowledge; as well as Distribution and application of knowledge.

6.3.1 Creation of knowledge
From the literature, it was found that one of the key factors for successful knowledge management within organizations was a strong organizational culture which promoted sharing of knowledge (Lindner &
In the case study, this key factor was strengthened. It was found that the decentralized, open culture at the organization allowed personnel to easily gain access to knowledge. Moreover, the personnel at the organization utilized their respective personal relationship network to find people all over the organization. In comparison to the SECI model by Nonaka (1991), it can therefore be said that organizational culture enables the socialization part for creation of knowledge. Nevertheless, this culture opened up the possibility of two risks for the future.

First, the current system of informal relationship networks is highly dependent on people remaining within the organization. Comparing this to the SECI model, see Nonaka (1991), it can therefore be said that combination was formed through meetings and interaction between personnel. However, as was seen in chapter 5, the situation with regulation projects resulted in that more consultants than usual was hired. The difference with consultants compared to personnel is that they leave the organization as the project finishes. This would mean that combination of knowledge, described by Nonaka (1991), would not be possible as the knowledge would leave the organization. Moreover, there was no system in place for retaining the knowledge that consultant build during the project. Similar to consultants, the network system faces the risk of personnel leaving the organization for other reasons. Through the risk of both consultants and personnel leaving the organization, this would mean that the lessons learned, as described by Quinn Patton (2001) and Frappaolo (2006), would leave the organization.

Second, it was found that the current system resulted in that some employees were considered key employees, which resulted in that many projects were asking for their participation. This is both an organizational risk and an individual risk. On the organizational level, there is a threat that this employee would leave the organization. Further, on the individual level there is a risk of overloading the employee.

In sum, while the informal network was highly beneficial for fast and easy access of knowledge, there are risks in becoming too dependent on persons, as they might leave a hole in the organization of they were to leave. The organization therefore has a need for a system that motivates employees to spread knowledge. One common way of achieving this is communities of practice, as described by Wenger & Snyder (2000), Smith (2003), and Eckert (2006). As said in the literature, a community of practice can help sharing and building of knowledge between different parts of an organization (Smith, 2003). As per Wenger & Snyder (2000), it is said that communities of practice cannot be formed actively by management. Instead, management should motivate employees to participate in communities as well as creating circumstances that allows for ease of creation of communities (Wenger & Snyder, 2000). For the case study, this would mean that management could motivate groups working in different regulation projects to meet and discuss, through informal community meetings. Moreover, to reduce overload of an individual, one could motivate projects to meet and discuss the knowledge they wanted to retrieve, so that several projects could meet a person at the same time to reduce the work load of key individuals.

### 6.3.2 Storage, organization and dissemination of knowledge

It was found in the findings that storing, organizing and adapting a common language for knowledge was an important task for projects. Furthermore, this was mainly done through documentation by project members. It was found that interviewees though that documentation was of high importance for their work. Moreover, it was even said to be the core of their projects. Interviewees claimed that mostly everything was documented, to the extent that it was over documented. In short, it was seen that documentation at the organization faced two challenges: clarity and traceability.

It was found that most interviewees had trouble understanding documentation from outside their own projects. This indicates that each project was creating its own system and language for documentation. However, as was mentioned in chapter 4, the organization itself had a standardized model for project management, which was built around templates for documentation. Nevertheless, the findings indicated that some project teams diverged from the model and the appointed templates. This divergence can be a result from one of three things: Either the model was not applicable to the projects, the project teams did not fully understand the benefits of the model or both of these two in combination.
Based on the case study, the third option is the most probable one. Comparing the regulation projects to the model, it was clear that it was not a perfect fit. For example, the strictness of the model was not adaptive to accommodate for the everchanging structure of the regulation projects, as the interpretations change during the implementation process. On the other hand, personnel did express dissatisfaction for the model because they wanted to work with the projects in their own way. This can be seen as an effect of the decentralized culture at the organization. Further, interviewees expressed that they documented excessively, but documentation was never read. It is probable that this strengthened the dissatisfaction with the model, as they were doing work for nothing.

Based on the above, it can be seen that changes could be recommended for both sides of the knowledge management issues with the project model. The organization should modify the project model so that it is more options in storing knowledge through following the model. Supported by Lawson (2003), it is imperative that the templates and guidelines in the project model creates a common language for the projects to increase clarity. Furthermore, adopting a common language allows knowledge to be shared more easily throughout an organization (Lawson, 2003; Gold, Malhotra, & Segars, 2001).

Moreover, personnel should also be motivated to use the project model for knowledge sharing. This means that the benefits of following the model, mainly clarity and understanding, should be emphasized for personnel. This builds upon the theories of management commitment, see Chiu & Chen (2016), Gupta, Iyer, & Aronson (2000), and Lindner & Wald (2011), as a commitment management can promote the use of systems and sharing of knowledge. However, the decentralized culture at the organization creates a possible obstacle, as personnel are used to self-governance and might be hesitant towards following a standardized model. Hence, personnel should be made aware of the current situation of low clarity in documentation to motivate improvement in knowledge focus.

It was further found in the analysis that an issue with documentation was traceability, which can be related to Lawson’s (2003) discussion of organization of knowledge, as organizing knowledge was said to facilitate knowledge sharing in an organization. From the literature, it was identified that ICT systems for managing documentation was beneficial to improving knowledge management within organizations (Lindner & Wald, 2011; Shin, Holden, & Schmidt, 2001). At the case study bank, the current system consisted of using a folder structure for handling different types of files. However, as was seen in the case study this system was lacking, as interviewees expressed having difficulties finding documentation in this system.

Issues for poor traceability was partly that naming of files was insufficient, resulting in that one could not know which file contained what knowledge. Moreover, if one knew that for example the knowledge was in a meeting record, there was no possibility of searching through the records available. Instead, the personnel had to guesstimate the date when the meeting took place and read through files close to that date. This further shows that there was no common language for the documentation, as discussed above. It can be seen that an ICT system for storing and retrieving documents, as suggested by Lindner & Wald (2011) and Sian Lee & Kelkar (2013) could be used to form a common language as well as organizing and storing documentation. As described by Sian Lee & Kelkar (2013), an ICT system can be used both for storing files as well as for sharing experiences within an organization (Sian Lee & Kelkar, 2013). Moreover, it is an excellent system for sharing lessons learned, as discussed by Quinn Patton (2001), throughout an organization.

An appropriate ICT system is, however, only a baseline for effective documentation storage. Similar to what was discussed regarding personnel’s motivation for using a project model, it was found in the case study that a system is only as strong as the users who inputs the documents. This means that if for example the case study organization would implement a new system, it would be imperative that the personnel are taught proper usage of the system. Without proper usage, the new system would probably face similar issues to the one currently in place. Hence, it can be seen that the case study follows the
notion that management commitment is imperative for knowledge management, as discussed by Lindner & Wald (2011).

In a similar vein, it was shown in the case study that the project teams preferred to create their own structures for documentation, as a result of the decentralized culture. Following the example of finding a new ICT system, it would then for the case study organization be important that the ICT system is standardized for the project model. Otherwise, there is a risk that each project finds its own system for documentation, creating the opposite effect sought after.

6.3.3 Distribution and application of knowledge
From the case study, many interviewees express issues with the way the knowledge from projects was being distributed to the organization. Two main issues were identified: there was no standardized way of transferring documentation and much of the knowledge was left residing in the project members. This, in turn, made it difficult to use the knowledge for future projects or in operations.

Regarding the transfer of documentation, it can be said that the project model should include templates for how to manage documentation within a project. It should further include templates for how a receiving unit of organization would receive the documentation as the project finishes. This is strengthened by the SECI model, as Nonaka (1991) described that knowledge management should be a spiral motion between the sections of the model. Moreover, knowledge should flow between the individual, group and organizational level Nonaka (1991). If there is no standardization for templates for knowledge storing, the possibility of combination on a group or organizational lessens, as there is less availability for cross checking between knowledge from different projects.

Regarding how knowledge was left within project members, it was found in the case study that when personnel participated in the project, knowledge was transferred back to the receiving unit automatically. However, for the regulation projects this was not the case. The findings showed that interviewees considered the delivery of the project to be the final step of the process. It included a project report as well as at least a delivery meeting between the project and the receiving unit. However, interviewees said that this was more formal, as according to the project model knowledge transfer should have already taken place through participating personnel.

The inclusion of personnel in projects follows the SECI model as described by Nonaka (1991). Personnel is socializing within the project, externalizing their knowledge through reports, reports are combined with other in the project and the combination are delivered back to the personnel who can then internalize the new knowledge. To recreate a similar system when the consultant number is high, it can be seen that it is required to implement continuous meetings between the project and receiving units, where the project team should share their current progress. By discussing the current successes and difficulties the project faces, the receiving unit can form an understanding of the progress, without directly participating in the project.

6.4 Institutionalization
From the findings, it was found that the regulation projects at the organization received aid form three supportive institutes outside of the project itself. For building knowledge, the SSDA helped by making interpretations for regulations. However, this organization was an external part, which makes it less possible to affect from within the studied organization. The focus for this section is therefore only on two supportive institutes; the project offices as well as the temporary organization, as these were within the case study organization.

6.4.1 The project offices
In the case study, it was found that for regular projects the main supportive institute was project offices, which was permanent units in the organization meant to support the projects. Moreover, these project
offices aided regulation projects as well. Comparing these project offices to the different types of project offices discussed in the literature by (Descouza & Evarist (2006), one can see that the project offices fall under the administrative role of the supporter.

In the literature, it was recommended that project offices had an active role in knowledge management within the organization, in comparison to the current administrative role of the project office (Descouza & Evaristo, 2006). Moreover, for knowledge management within decentralized organizations, it found in the literature that the most beneficial type of project office was one that was knowledge intensive but not enforcing, as central enforcing units did not work with the decentralized culture (Descouza & Evaristo, 2006). Relating this with the case study, it can be seen that from a knowledge management perspective there could be a more knowledge heavy focus for the projects offices. One of the possible actions for project offices to become more knowledge intensive is to take the role of the knowledge broker, as suggested by Pemsel & Wiewiora (2013). This would mean that the project office took a more active role in establishing relationships between projects, keeping track of knowledge and documentation of knowledge, as well as facilitating knowledge between projects by arranging meetings and forums for the projects to meet.

In the case study, it was found that the organization had several project offices available and that several of them were involved within the same projects. Furthermore, it was found that the project offices had different roles, even though both acted as primarily administrative. Because of this difference in roles, there is room for specialization. As there is little need for several project offices with the same administrative functions, it can be said that one project office could specialize more towards being knowledge intensive and begin to facilitate knowledge as a broker. Moreover, as one project office already was involved in lessons learned activities, this project office is an excellent candidate.

6.4.2 The temporary organization

From the case study, it was found that the umbrella organization fulfilled quite a different role in comparison to the project offices. It was found that the main reason for creating the umbrella organization was to help collaborate the different regulation projects, as similarities was found between the projects. Moreover, this collaboration was done mainly through two ways: forum meetings for discussions between projects and unification of document folders.

Comparing the umbrella organization to the literature about PMOs, it can be seen that even though this organization was not appointed as a project management office, it had several similarities to the description of the knowledge intensive PMOs. Firstly, as the umbrella organization focused on collaborating projects to help them reach higher understanding about their regulations, it can be seen that the umbrella was knowledge focused. Furthermore, as the umbrella organization did not govern the regulation projects but instead aided them, it did take the role as a knowledge manager, see Descouza & Evaristo (2006), which was recommended for decentralized organizations. Secondly, the facilitation of communication between projects follow a similar pattern to the suggested knowledge broker, see Pemsel & Wiewiora (2013), which was proven to create benefits for organizations.

It can be seen that while the project offices at the case study organization were highly administrative, the umbrella organization was primarily focused on knowledge. Thereby, it can be said that the investigated organization had a solution in place for facilitation knowledge. However, this umbrella organization was facing challenges as well. It was noted by interviewees that there was no active knowledge management within the organization. This followed through for the umbrella organization as well. As the organization did not realize that it was a knowledge broker, it faces the risk of not fully utilizing its role. For example, one interviewee said that the forums with the umbrella organization was dependent on that one identified issues or reasons for collaboration between projects. Hence, if the projects did not face issues there would be no reason to lift the knowledge of the project to the collaborative meetings. It can therefore be said that the umbrella organization could that a larger part in
not only facilitating knowledge when projects were having issues, but instead play a more active role in identifying similarities between projects and further facilitate communication.

The umbrella organization had also created an excellent opportunity for working with combination, as from the SECI model proposed by Takeuchi & Nonaka (1995). For combination, one should find externalized knowledge and combine it with other knowledge to generate new knowledge. As the umbrella organization was the owner of the documentation folders for all regulation projects, this could be used as an opportunity for combination. Building on the idea of facilitating all meetings for knowledge exchange, the umbrella organization could further motivate projects to share documentation between projects, allowing for combination of findings and solutions between projects.

While the umbrella organization at the time of the case study enabled knowledge sharing within the organization, it also faced a risk going forward in that the knowledge generated could be lost. The reason for this is that the organization was expressed as temporary, as it was initiated to handle the, at the time, heavy project load that the investigated organization was facing. As the umbrella organization was important for knowledge creation, it therefore also itself generated knowledge. The question that arises is what happens to this knowledge as the temporary organization is dissolved. As there was no system in place to handle the dissolution of the umbrella organization, this shows the negative difference in comparison to a knowledge intensive project office, the temporariness. To not lose knowledge on a grand scale, the case study organization therefore need to find a solution to how to maintain the regulation project knowledge after the umbrella organization has run its course.

As a note, it should also be mentioned that besides the umbrella organization there seemed to be no institution for knowledge facilitation between projects at the investigated organization. Whilst outside of the scope of regulation projects, this should be mentioned as a weakness that could lead to similar knowledge management problems in the future for the organization if not addressed.

6.5 Consolidating the focus areas

Based on the discussion above, the initial focus areas for discussion can be revisited. It can be seen that each of the focus areas are imperative to cover the full width of knowledge management within projects. Moreover, each focus area is clearly separate from the other and each area can be further divided into separate parts. Based on this discussion, the focus areas for knowledge management in projects can be summarized as shown in Figure 5. Each ring corresponds to a focus area, with an arrow pointing towards a box with topics of interest within each area.
As can be seen in Figure 5, each focus area consists of two to three key topics within that area. While the areas are separate, a positive relationship can be found between the areas, depicted by the wide arrow. In this context, a positive relationship implies that an improvement of one area positively affects other areas. These relationships will be discussed below.

First, one can discuss the understanding of knowledge. From the findings, it can be seen that the underlying issue for the studied organization’s knowledge management problems was the lack of understanding the meaning of knowledge. Moreover, this lack of understanding meant that personnel could not differentiate between different types of knowledge nor knowledge of different subjects. From the literature, it can be seen that authors find it imperative to begin with defining knowledge, as they claim that without an understanding of knowledge one cannot manage it, see for example Frappaolo (2006), Lindner & Wald (2011), Nonaka (1991), and Gold, Malhotra, & Segars (2001). Hence, it can be concluded that the understanding of knowledge can be considered a baseline for utilizing tools and structures within the field of knowledge management.

Second, one can discuss knowledge management processes. As these processes are founded on the founding theories of knowledge, as written by Lawson (2003), Shin, Holden, & Schmidt (2001), and Gold, Malhotra, & Segars (2001), it can be said that the use of knowledge management processes is affected positively by the understanding of knowledge, meaning that a higher understanding improves the possibilities for knowledge management processes. This is further strengthened by the case study, as several of the issues the studied organization was facing in regard to its knowledge management processes stemmed from a lack of understanding of knowledge.

Third, one can discuss institutionalization of knowledge management. As seen in the case study, the temporary organization was aiding facilitation of knowledge, however because of issues with understanding knowledge the facilitation was not seen as an active knowledge facilitation. This points towards that understanding knowledge positively affect institutionalization. Moreover, the institutionalization suggested by the literature focused on strengthening knowledge management processes in projects through organizational institutions, see Descouza & Evaristo (2006), meaning that
better knowledge management processes positively affect institutionalization. Therefore, it can be said that institutionalization is positively affected by both understanding of knowledge and knowledge management processes.

In sum, it can be seen that the understanding of knowledge is a baseline for knowledge management and positively affects both knowledge management processes and institutionalization. Moreover, knowledge management processes can be said to positively affect institutionalization. Thus, the positive relationship shown in Figure 5 is found.
7 CONCLUSIONS

Following the discussion, in this chapter the conclusions are combined to answer the research questions. First, the conclusions from the discussion are summarized through the two research questions of the thesis. Second, the purpose of the thesis is revisited to conclude the work. Third, suggestions for future research are given.

7.1 THE FIRST RESEARCH QUESTION
The first research question for this thesis is:

RQ1: What knowledge management areas are facing challenges in projects in the financial sector?

This research question will here be answered. Based on a combination of the analysis of findings from the case study and theory of knowledge management, three initial focus areas were identified. Moreover, these focus areas were refined throughout the discussion, by dividing the areas into subtopics as well as by identifying relationships between the areas. This refined structure can be seen below in Figure 6, where a positive effect relationships is depicted by wide arrow, and subtopics for each area is shown in the boxes on the side.

In Figure 6, it can be seen that two to three subtopics within each area of knowledge management were facing challenges within projects for the organization in the financial sector. The conclusions regarding challenges in these subtopics will be presented below.
7.1.1 Understanding knowledge
Within the area of understanding knowledge, there were three main subtopic challenges.

First, it was seen that by not defining knowledge, personnel in projects were facing issues with differentiating knowledge from information. By not doing this differentiation, they primarily managed information and missed the management of knowledge.

Second, it was found that by not differentiating between tacit, implicit, and explicit knowledge, project members can have difficulties correctly managing their knowledge. Moreover, as shown in the case study, with a focus primarily on documentation there is a risk that tacit and implicit knowledge is forgotten.

Third, it should also be noted that a project can consist of knowledge for different subjects. A challenge can therefore be to manage the knowledge for all subjects in a project, as there is a risk that one focuses too much on only one subject. This was shown in the case study with the difference between form and content knowledge for projects, where the projects focused too heavily on form knowledge.

7.1.2 Knowledge management processes
The six knowledge management processes from the literature were through the case study combined into three groups of processes.

First, the process of creating knowledge was found to benefit from a decentralized, open culture. However, solely depending on this culture for knowledge creation created a challenge, as it made the projects and organization highly dependent on key personnel within the organization. Moreover, this meant that there was a risk that key personnel would become overloaded or leaving the organization, resulting in knowledge loss. This risk was further strengthened by the use of external consultants, as they leave the organization at the end of a project.

Second, there were challenges for the processes of storing, organizing and disseminating knowledge, primarily focused on documentation. Furthermore, it was found that it was difficult to create clarity and traceability of documentation, which resulted in that documentation was hardly used. This, in turn, meant that knowledge that was documented was lost.

Third, there were challenges for the processes of distributing and applying knowledge. There was a lack of structure on how to transfer and deliver knowledge from a project to operations. Because of this, much knowledge was lost as the project was finished, meaning that it could not be used in the future.

7.1.3 Institutionalization
From the literature, it was found that institutionalization of knowledge was seen as an imperative factor for successful knowledge management. From the case study, challenges for two types of institutions were found.

First, it was found that project offices were commonly used to facilitate knowledge between projects. However, from the case study it was found that the project offices were primarily focused on administration, meaning that a challenge was to increase the knowledge focus of the project office.

Second, it was found in the case study that a temporary organization could be used as a substitute for facilitation of knowledge. However, as this organization was temporary, it faced the challenge of what would happen with its accumulated knowledge once the organization was terminated.
7.2 THE SECOND RESEARCH QUESTION
The second research question for this thesis is:

How can a financial organization work towards improving these areas?

For this research question, it was investigated how the studied bank could improve the focus areas identified in RQ1. The potential improvements are therefore presented below, divided into the different focus areas for clarity.

7.2.1 Understanding knowledge
To improve the understanding of knowledge in projects, it was found that it is imperative to acknowledge the definition of knowledge within the organization. Moreover, this means that personnel within the organization should work towards spreading the notion of knowledge to make their colleagues aware of the difference between information and knowledge, so that focus can be set on managing knowledge. Furthermore, personnel should be made aware of the differences between tacit, implicit, and explicit knowledge so that they can adapt depending on what type of knowledge they are working with. Finally, it should be emphasized that it is important that all knowledge subjects within a project are discussed, so that a subject is not lost.

7.2.2 Knowledge management processes
To improve the different knowledge management processes, several potential actions were found. First, it was found that promoting communities of practice can be beneficial for spreading knowledge within the organization, reducing the dependency of key personnel. Second, it was found that an ICT system for knowledge management can improve traceability and clarity of documentation. However, for an ICT system to function it is imperative that management is committed towards motivating the use of the system. Third, to combat the loss of automatic transfer of knowledge when utilizing external consultants, knowledge distribution should be considered a continuous action throughout a project, rather than the final step. Moreover, it is important that project continuously work with socialization with operations, so that operations can gain insight in the project knowledge.

7.2.3 Institutionalization
To improve the area of institutionalization, two options are found. On one hand, an organization can change its project offices so that there is a permanent project office within the organization that takes the roles of a knowledge broker, focusing on facilitating knowledge between projects. On the other hand, utilizing a temporary organization can be beneficial as it allows project offices to focus on the administrative. However, a solution to the temporary nature of this type of organization should be found, as knowledge otherwise would be lost. Moreover, the roles of the temporary organization should be extended to aid all projects within an organization, rather than just a few.

7.3 REVISITING THE PURPOSE OF THE THESIS
In light of these conclusions, this thesis’s purpose is now revisited. As said in section 1.3, the purpose of this thesis is to investigate how knowledge management can be applied to projects for an organization within the financial sector, to improve how knowledge is managed within the projects. From these conclusions, it can be seen that the focus for improvement of knowledge management for project within the financial sector should be on the areas of understanding knowledge, knowledge management processes and institutionalization. Several challenges exist for knowledge within these areas, however by utilizing knowledge management theories and models there is potential for improvements.

Throughout this thesis, it has been shown that knowledge management can lead to an increase in organizational knowledge, which in turn can enhance the individual’s knowledge, resulting in a positive spiral of knowledge creation and utilization. Moreover, it has been shown that improving knowledge
management in projects can reduce double work over projects while allowing projects to better keep track of their knowledge, resulting in a higher project efficiency.

To conclude, it can be said that to improve knowledge management for projects in the financial sector, focus should be on three main challenge areas. By improving these areas, knowledge can be better managed in projects, allowing projects to progress more efficiently, which in turn results in a higher competitive advantage for the organization.

7.4 Contributions to current research
There are several contributions to current research found in this thesis. First, the refined focus areas in Figure 6 can be used for discussion in other case studies when investigating challenges for knowledge management in projects. Moreover, these focus areas are an adaption of previous research applied in a new case, allowing the research to be developed further. Second, several potential improvements in regard to these challenges have been identified, which can be used for future research. These improvements are very much hands on, which is something that has previously been missing in papers regarding knowledge management. Thus, this thesis contributes by applying knowledge management theories in a hands-on setting. Third, this thesis has research knowledge management within the financial sector, which is a sector that has not previously been investigated. Therefore, this thesis contributed with the view on knowledge management from this sector.

7.5 Limitations of the research
This thesis was conducted at the investigated bank, which is a decentralized organization, as a case study. This means that the finding was be limited to the specific challenges at this organization. Furthermore, the decentralized structure of the organization as well as the current project process model was given and will be seen as a baseline for the thesis. This means that a comparative analysis to a centralized organization was not conducted, nor was the project process model discussed from a project perspective. Thus, there is a possibility that some potential challenges and improvement for knowledge management have been left out, as they were not applicable to this specific case study.

7.6 Future research
Based on this thesis, there are several topics that should be further investigated in the future:

- Within each of the areas investigated, deeper research for each area should be conducted.
- As the theory regarding knowledge of different subjects was found weak based on the literature study, there is room for investing how projects differentiate between different subjects of knowledge.
- As this study was focused on the financial sector, it should be studies whether the findings apply to other markets sectors or if some conclusions are unique for this sector.
- As this study was a single case study, as cross-examination between several studies for similar case within the financial sector should be conducted to further strengthen possible generalizability of the findings. Moreover, a comparison between conclusions for different sectors should be conducted to find differences and similarities between sectors.
- It should be investigated what functions of an ICT system for documentation storing and tracing that are imperative for a successful system. Moreover, criteria for an ICT system could be developed to allow selection between the different systems available on the market.
- As most literature cover the use of project offices, it should be investigated whether other institutions such as the temporary organization investigated in this thesis are common occurrence in organizations and its effects on projects.
8 REFERENCES


