Incentives for knowledge sharing in project based organizations
– A case study at Sectra AB

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Abstract

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Keywords Project based organizations, Tacit knowledge, Knowledge sharing, Cooperation issues, Management control systems, Clan control, Incentives.

Title Incentives for knowledge sharing in project based organizations - A case study at Sectra AB

Background Previous research in the area of knowledge management shows that project based organizations often struggle with their employees resistance to share knowledge with colleagues for reasons of self-interest. Other research show that implementing incentives to stimulate knowledge sharing behaviors has been proven efficient. However, the fact that no previous research has touched upon the topic in the context of project based organizations, motivated us to immerse ourselves in the area.

Purpose The purpose of this study was to map how incentives stimulate knowledge sharing in project based organizations.

Method A qualitative single-case study performed with semi-structured interviews on the department of medical systems at project based Sectra AB.

Conclusion The study highlights the value of combining incentives with clan control for motivating knowledge sharing in project based organizations. It indicates that project based organizations with help from incentives can stimulate knowledge sharing behaviors, both directly and indirectly.
Foreword

We would like to thank everyone that has been of value for the completion of this study.

Firstly, we would like to thank our supervisor Fredrik Tell, professor in management and director of the KITE research group at Linköping University, for his valuable support and encouragement during these twenty weeks.

Secondly, we would like to thank the respondents from Sectra AB for participating in the study by contributing with their valuable insights to our research.

Thirdly, we would like to thank the students in our opponent group for their thoughtful feedback that has improved our study.

Lastly, we would like to thank our families and close friends for their support and encouraging words throughout this period of time.

We would also like to wish the readers of this study a pleasant reading and we hope that you will find our research as interesting and inspiring as we do.

Linköping, 2015-05-25

Tina Rozic

Julia Taxén
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1. Introduction
1.1 Background
1.1.1 Valuing knowledge as a strategic resource
In today's dynamic business environment a major challenge for organizations is to manage their knowledge, especially in the context of getting individuals to share their specialized knowledge with others operating within the same firm (Osterloh & Frey, 2000). Grant (1996) along with Schmickle and Keiser (2008) explains that when individuals refuse to share their knowledge with colleagues, their expertise stays embedded within their minds. According to the authors this implies that once they leave their organization, their expertise also leaves.

For that reason, authors like Teece (1998) and Argote and Ingram (2000) argue that it primarily is an organizations ability to share and integrate specialized knowledge that leads to competitive advantage. It goes in line with Grant (1996) who, in his knowledge-based theory of the firm, points out the significance in valuing knowledge as the most important strategic resource of an organization. The author along with Kogut and Zander (1992) means, that as knowledge-based resources typically are hard to imitate, heterogeneity in capabilities and knowledge-bases among organizations are the foremost important determinants for survival and sustained competitive advantage. In addition, Schuler and MacMillan (1984) along with Boxal and Purcell (2011) report that organizations aware of how to manage their internal knowledge typically have; (1) a lower turnover rate of employees, (2) a lower retention rate of key people and (3) are able to foster both individual and collective thinking which enables organizational learning and faster adaptation to changes in the market or/and organization.

In other words, a failed knowledge management can have big consequences for organizations, which according to Grant (1996) means that organizations constantly need to find new ways to encourage and support the sharing and integration of knowledge to survive and sustain their competitive advantage. Building onto the discussion, Sapsed (2005) argues that it mainly is what could be at risk in terms of position and authority that seems to be the reason behind why individuals withhold their knowledge from colleagues. The author further explains that it often is the fear of being replaced that keep individuals from sharing their specialized knowledge with others, even though they typically are aware of the fact that it disfavors their colleagues and even the success of their organization.

1.1.2 Project based structure to sustain competitive advantage
Further, in the same pace as today's business environment changes, an ever increasing number of organizations typically with a heavy weighted development department, chooses to adapt their organization in a way that aim to foster innovation and development (Lindkvist, 2004).
The author along with Hobday (2000) and Whitley (2006) holds that to sustain competitive advantage it is common that organizations therefore reorganize to become project based, as such organizations are argued to be ideal for managing today's increased product complexity and dynamic market. This as they argue them to be fast learning and flexible to changes in the market and customer needs due to their project based nature.

However, the definition of project based organizations differ widely depending on the author referred to, but general for all definitions is that such organizations are built around temporary projects where cross-functional expertise is brought together and matched according to the needs of specific projects (Hobday, 2000; Whitley, 2006; Lindkvist, 2004). However, what distinguishes Lindkvist (2004) from the others is that he defines them as permanent organizations that manage several projects at the same time. Another difference is that, according to the author, project teams are able to exchange and share resources (e.g. knowledge) with each other. As it in particular is in this type of project based organization where knowledge sharing is argued significant this definition has been of focus in this study.

1.1.3 Facilitating knowledge sharing behaviors

Referring back to the issue of individuals reluctance to share their knowledge with others operating within the same firm, Turner and Makhija (2005) argue that organizations through the usage of clan control can stimulate knowledge sharing behaviors by implementing activities that aim to strengthen organizational commitment. It is argued to be the most suitable management control system for the purpose of stimulating knowledge sharing as it in comparison to other management controls focuses on organizational commitment, which is known to enhance open business environments (Jashapara, 2005). According to the author this in turn stimulates knowledge sharing behaviors, both within and between projects, as it due to the commitment that employees feel to the organization and its members create an environment where knowledge sharing occurs more spontaneously.

However, organizations usually fail to realize the potential benefits of using incentives to bridge over such knowledge sharing issues and getting individuals to share their knowledge internally (Hansen et al., 1999; Liebowitz, 2003). Merchant and Van der Stede (2011) agree by stating that incentives are ideal to use as they serve as tools for communicating what type of behaviors that organizations expect out of their employees. The authors mean that to foster knowledge sharing incentives need to obtain mechanisms facilitating such behaviors. However, to be successful the authors further hold that incentives need to focus the underlying cause behind why individuals refuse to share their knowledge with others, to find incentives that can prevent that behavior form occurring.

Extensive research has already covered the field on how incentives assist to stimulate knowledge sharing behaviors within for example line organizations. However, no attention
has been paid on how knowledge sharing behaviors can be stimulated with help of incentives in project based organizations. As Dalton and Lawrence (1971) argue that every organization is unique and that incentives therefore need to be adapted to fit different circumstances, we question whether the same incentives as for line organizations really could be applied onto project based organizations. We argue that it would be problematic as there are major differences between how line organizations and project based organizations are structured and operate. This goes in line with Dalton and Lawrence (1971) and Schuler and Jackson (1987), who mean that incentives need to be adapted to organizational structure as different structures tell different stories about the procedures and routines of organizations.

This indicates that there could be differences between line organizations and project based organizations, which could be important to consider in the selection of incentives. For that reason and because authors like Sapsed (2005) and Denison et al. (1996) argue that it is in particular project based organizations that struggle with issues regarding their knowledge sharing, we argue that it would be of importance to investigate how incentives stimulate knowledge sharing behaviors in project based organizations as no previous research have touched upon the topic. To clarify the need for research in this area, the differences in organizational structure and operations between line organizations and project based organizations will be discussed in the next chapter.

1.2 Why project based organizations might need to customize incentives

1.2.1 Differences in organizational structure
What is it that would make line organizations and project based organizations so different from each other that what is expected in the previous chapter actually holds? In order to make a statement about that the model provided by Merchant and Van der Stede (2011), which combines previous research on how incentive best are created, has been used. In the model, the authors state that in order for organizations to stimulate a targeted behavior successfully they firstly need to decide who is responsible and for what that person or group is responsible. Once the first questions are answered, the next step is to discover how that behavior best can be enhanced for that particular group or person (Merchant & Van der Stede, 2011). The authors hold that the order in which the steps are arranged is crucial for the creation of successful incentives as it creates a clear link between cause and effect.

Continuing, the first argument that suggests that the organization types are significantly different is based on organizational structure. As can be seen in figure 1, line organizations have a hierarchic structure with an extensive division of labor, where employees operate in specific divisions (Forslund, 2013). The author holds that line organizations allocate their responsibilities and reporting to separate functional units, which typically are administered by a staff of specialists. The author further states that this means that the sharing and integration of resources (e.g. knowledge) within this type of organization typically is limited. According
to Ekstedt et al., (1999) this makes it simple for line organizations to determine who is responsible for what. As expected, this goes in line with what Merchant and Van der Stede (2011) argue to be prerequisites for the creation of successful incentives.

An illustration of a project based structure on the other hand can be seen in figure 2. In comparison to line organizations, Lindkvist (2004) argues that a typical project based organizational structure is built around temporary projects instead of units, where the line for division of labor often is vague. According to the author this means that the sharing and exchange of resources (e.g. knowledge) between projects within this type of organization typically is extensive, due to that the teams often are highly dependent on each other. Further, the author states that this means that project based organizations, in comparison to line organizations, are not built around a hierarchical order. Instead the author means that the strategic management of such organizations rely on individual expertise and that project teams are able to self-organize. This also means that since resources typically are distributed where they are needed at the moment and since no strict documentation on who is responsible for what typically exists, it is often hard to link employees to performances (Lindkvist, 2004). As expected, this does not go in line with what Merchant and Van der Stede (2011) argue to be prerequisites for the creation of successful incentives. Thus, this indicates that what is researched so far on incentives is not customized to fit project based organizational structures.

1.2.2 Differences in operations
The second argument that suggests that line organizations and project based organizations are significantly different is based on how they operate. According to authors like Merchant and Van der Stede (2011) and Aguinis et al., (2012) today’s incentives are suitable for firms that are of permanent natures. The authors mean that even though projects and work objectives have deadlines, the long term goals of permanent organizations typically have no clear upper
limit. Adding to this, Merchant and Van der Stede (2011) also state that individuals in such organizations usually have their own positions, which means that they work in the same team or group all or most of their time. This goes in line with what Berggren and Lindkvist (2001) hold as typical traits for hierarchically based organizations (e.g. line organizations).

However, these characteristics do not correspond to the characteristics of project based firms as the end of one project typically means the end of that particular project team (Lindkvist, 2004). The author thus means that once a project is finished its project team typically dissolves and moves on to form new project teams, operating new projects. In other words, project based organizations are of a more temporary nature then line organizations, as goals are clearly stated with time limits and task specifications (Merchant and Van der Stede, 2011). Thus, the characteristics of project based organizations do not go in line with what is stated by Merchant and Van der Stede (2011) and Aguinis et al. (2012) as they hold today’s incentives suitable for organizations that are of a more permanent nature.

1.2.3 Implications to the differences between the organizational types
To summarize, the previous two sections conclude that there are differences between how line organizations and project based organizations are structured and operate. As argued, this implies that it could be problematic to apply the same incentives as for line organizations also onto project based organizations. For that reason, we claim that there is a need for research in this area by arguing that it would be of importance to investigate how incentives stimulate knowledge sharing in project based organizations as no previous research on the topic exists.

1.3 Purpose
According to previous research, project based organizations often struggle with that their employees resist to share their specialized knowledge internally. To stimulate such behaviors it has been proven successful in traditional organization types (e.g. line organizations) to implement incentives. However, as we suggest that project based organizations have features that are significantly different from what are prerequisites for the creation of today’s incentives, we argue that it could be problematic to apply them onto such organizations. For that reason the purpose of this study is to map how incentives stimulate knowledge sharing behaviors in project based organizations.

1.3.1 Research questions
- How do clan controls stimulate knowledge sharing in project based organizations?
- How do incentives stimulate knowledge sharing in project based organizations?
- How do incentives moderate clan controls for the purpose of knowledge sharing in project based organizations?
1.4 Research approach
The study has been executed at the department of medical systems at Sectra AB, as they are a project based organization highly characterized by research and development. It made them a suitable candidate as they operate in the target context for the study. It has been executed as a single-case study accomplished through semi-structured interviews, with respondents working at three different levels within the organization.
• **Method**  
The method chapter arguments for the scientific approach choices of the study as well as presents a critical review of its research design, execution and other stands such as ethical aspects and criterions for the selection of organization.

• **Theoretical framework**  
The theoretical framework builds upon articles regarding the issue of individuals resistance to share their specialized knowledge with colleagues in project based organizations. Relevant theories of project based organizations, knowledge management and management control systems were considered relevant to perform the analysis.

• **Empirical research**  
The empirical research presents the semi-structured interviews held with respondents at Sectra AB. The empirical data is presented according to the found themes based on patterns and common denominators which emerged during the processing of the empirical data.

• **Analysis**  
The analysis presents the authors interpretations of the case study with a deepen analysis of the empirical data with regards to the model presented in the theoretical framework. The analysis concludes with a developed model.

• **Conclusion**  
This chapter presents the conclusions of the study and discusses them with regards to the study purpose and research questions by explaining the developed model of this study. It also discusses the contributions of the study and suggestions to future research.
2. Method

The method chapter arguments for the scientific approach choices of the study as well as presents a critical review of its research design, execution and other stands such as ethical aspects and criterions for the selection of organization.

2.1 Scientific approach

2.1.1 Hermeneutic approach
The hermeneutic approach was used to perform the study. According to Bryman and Bell (2005) the hermeneutics is the theory of interpretations. It suited the purpose of this study as the aim was to focus the interpretations of appearances. For that reason, the empirical part of the study represents the respondents’ explanations by presenting their view of the discussed topics with help of citations. Thereafter, the analysis part of the study presents our interpretations of the respondent’s interpretations. According to Patel and Davidson (2011) this goes in line with the hermeneutic approach as it let authors advocate the understandings for peoples’ behaviors and examine their topic with their own perceptions.

In comparison a positivistic approach would have meant that the study would have had to be executed objectively (Wallén, 1996), which would not have suited the purpose of the study as it would have meant that no interpretations could have been made by us. Further, the hermeneutic approach suited better as it give us the possibility to develop new angles for each interview, which according to Patel and Davidson (2003) is vital to improve subsequent interviews. Thus, the hermeneutic approach allowed more in-depth and detailed answers regarding experiences and perceptions, which as argued above was of importance.

2.1.2 Qualitative design
As the aim of the study was to map how incentives effect knowledge sharing behaviors in project based organizations, a qualitative design was to prefer. This as, according to Holme and Solvang (1997) and Seymour (1992), qualitative methods aim to answer the questions how and why instead of the questions what and who, which is the aim in quantitative methods. In other words, it left room for a deeper, more complete and general understanding for the research questions, which was of importance to go in line with our hermeneutic approach. Further, another reason for choosing a qualitative design before a quantitative one was because according to Trost (2010) quantitative methods aim to objectively analyze the relationships between variables. Thus it did not suit the purpose of this study as the aim was to interpret the appearances of the selected respondents.

Moreover, a qualitative design was preferable because according to Lekvall and Wahlbin (2001) it give authors the opportunity to use a smaller sample group and a semi-structured interview design. It suited the study as it let us facilitate the interactions between ourselves
and the respondents and subjectively interpret the data. Thus, it was considered consistent with the approach needed to examine the relationship between knowledge sharing and incentives in project-based organizations. However, as argued by Bryman and Bell (2005), the approach did not oblige the study to generate a completely new theory but instead left room for the development of existing theories which was consistent with the approach of this study.

2.1.3 Iterative approach
An iterative approach was used to perform the study which means that the study took on a mixture between an inductive and a deductive approach (Bryman & Bell, 2005). It was partly based on a deductive approach as theory was gathered before the interviews to create a first draft of the theoretical framework. It is also to be considered as a deductive approach as the study was grounded in previous research (Bryman & Bell, 2005).

However, once the case study was performed the first draft of the theoretical framework was processed and adapted to be able to explain the empirical data. This is to be considered an inductive approach as the study thus mainly was grounded in empirical data (Bryman & Bell, 2005). In the same way, additional theory and empirical data was gathered and processed throughout the study to form a deeper understanding for the case. According to Bryman and Bell (2005), these are the characteristics of an iterative approach.

A completely deductive approach would not have suited the study as it would have meant no or little processing of the theoretical framework once the interviews had been performed (Bryman & Bell, 2005). This would not have suited the study as new angles emerged during the interviews which developed or perspective in another direction. Further, it was also not a good match for the study as the authors hold that deductive approaches are based on theory and not empirical data, which it was in this case study. Further, it was not considered suitable to adapt a completely inductive approach either. This as it was not possible to know what the interviews would enhance in beforehand as no previous research had touched upon the topic. In other words, an iterative approach suited best as it was of importance to gather and process new theory continuously throughout the study, to be able to explain the problem as its angles changed during the process.

2.2 Data collection
Holme & Solvang (1997) claim that data needs to be divided into primary and secondary sources. The primary data consists of information stained directly from the original source, which in this study corresponds to the data collected during the interviews (Lekvall & Wahlbin, 2001). Thus, the primary data in this study consists of observations and discussions, which gained information about the perceptions and opinions of the respondents interviewed. Further, the study also consists of information from the organization’s latest annual report (2014), which according to Lekvall & Wahlbin (2001) is to be considered as secondary data.
2.2.1 Single-case study
Bryman and Bell (2007) argue that case studies present the opportunity to closely investigate specific cases and how their processes and mechanisms depend on each other. This was performed by interviewing respondents at one project based organization, which thus is consistent with their definition of a case study. The reason for choosing a case study was because according to Merriam (1994) it is suitable when the purpose is to deepen the understanding for specific questions or phenomenon.

More precisely the study was performed as a single-case study, as Yin (2007) argues it suitable for the purpose of deepening discussions even further than what is possible with a multiple-case study. This was important for the purpose of the study as the problem at hand as already argued was complex and greatly dependent on its context.

2.2.2 Qualitative Interviews
The collection of primary data was performed through qualitative interviews. As the aim of the study was to gain knowledge about the behaviors and experiences of individuals, the use of qualitative interviews was considered beneficial as it according to Kvale (1997) opens up the possibility to discuss questions openly with respondents. Further, the interviews were designed in a semi-structured way to facilitate openness. It was suitable as Darmer and Freytag (1995) argue that semi-structured approaches leave room for flexibility during interviews, which means that new angels to the topic can be brought up if they arise during interviews. In addition, the authors argue that such interviews are similar to a dialogue, which generally only require a framework of the themes to be discussed instead of a fully developed plan in detail. The openness that thus can be facilitated means that respondents are able to associate the meanings of different concepts and questions in different ways (Johannessen & Tufte, 2003), which suited the study as it allowed more in-depth and detailed answers regarding the respondents experiences and perceptions.

A more structured interview approach would not have suited the study as it would have left less room for diversion, which means important information could have gone lost (Darmer & Freytag, 1995). Further, the authors argue that structured interviews to a greater extent steer respondents toward the answers the interviewers want, instead of letting respondents speak freely which more likely lead to answers that are less influenced by interviewers. Since, as already argued, the purpose of the study was dependent on interpreting behaviors and appearances the openness was needed.

However, authors like Johannessen and Tufte (2003) and Darmer and Freytag (1995) argue that the majority of all semi-structured interviews benefit from some sort of structure. The authors mean that it needs to be a balance established between standardization and flexibility.
The authors therefore refer to the value of having guidelines to keep semi-structured interviews on the right track and to avoid them from taking wrong directions. However, the authors along with Langemar (2008) hold that guidelines should not be too detailed, so that interviewers are allowed to deviate from the questions when it benefits the study. According to Langemar (2008) this is the best approach when the goal is to facilitate openness and access in-depth information about people's opinions and behaviors. For that reason, an interview guide was created to form a framework for the interviews. The interview guide thus served as a plan of questions that during the interviews were tailored to fit each situation.

### 2.2.3 Design of the interview guide

The interview guide was structured into three parts which each was designed to have different purposes. The interview guide (see appendix-1) was based on the first draft of the theoretical framework that as already mentioned had been gathered before the first interview. The introductory part was designed to introduce the topic as well as creating trust and a comfortable interview environment for the respondents. It concluded simple background questions to prepare respondents for the upcoming topics. Further, the mid-part of the interview guide was designed to dig deeper into each topic. To facilitate openness, only open questions were asked and when needed follow up questions were asked to dig deep into opinions, feelings, attitudes and experiences. Lastly, the closing part was designed to lead the respondents back to a basic level to close the interviews by asking if they had anything to add.

### 2.3 Selection of organization

The selection of Sectra AB was based on a number of organizational characteristics. However, the choice was mainly based on the fact that Sectra is project based, operating in a fast changing environment where knowledge sharing is vital for competitive advantage and firm survival. As this was the target context, the choice of organization thus suited the study.

Additional criterion was that Sectra has a market leading position and is highly dependent on innovation, which puts pressure on their usage of cooperative cross-functional project teams with continuous exchange of resources such as knowledge. As the purpose of this study was to map how incentives stimulate knowledge sharing behaviors in project based organizations, it was thus of importance to select an organization that was not only project based, but also highly dependent on knowledge sharing to be able to operate. Further, they were chosen because of their competitive position in the market, as Grant (1996) argue that a successful knowledge sharing are the foremost important determinant for competitive advantage.

### 2.3.1 Respondents interviewed

To gain profound data for the case study, respondents were chosen from three different levels of the organization. This as Dalton & Lawrence (1971) hold that individuals at different levels of an organization often experience things in different ways. As the study aimed to obtain an
organizational perspective, the choice of three different levels of employees was suitable as it thus can be argued that it contributes to a more general understanding for the case. A representation of the interviewed respondents can be seen in the table below.

<table>
<thead>
<tr>
<th>Professional position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager Professional Services</td>
<td>Catharina Sandberg</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Nina Karlsson</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Therese Malakow</td>
</tr>
<tr>
<td>Project Manager</td>
<td>André Genkel</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>Roger Borg</td>
</tr>
</tbody>
</table>

The respondents that participated in the study consisted of five individuals with positions as project engineer, project manager and manager over professional services. As Fernie et al. (2003) argue that knowledge sharing is one of the most central issues for project managers, the majority of all respondents chosen where therefore project managers. Further, Disterer’s (2002) argument that the main responsibility for knowledge sharing in projects is assigned to project managers strengthened that choice.

The approach used to get hold of respondents was the method called snowball sampling. This means that respondents relevant for the study were selected consciously without randomness (Hartman, 2004). The absence of randomness was important for the purpose of the study as the target was to reach specific professional positions. Once contact was established with the first respondent at Sectra, that person recommended further respondents that also afterwards recommended others. According to Hartman (2004) this is how the snowball gets in motion which creates suitable sample groups that are suitable for qualitative studies.

After all the respondents had been interviewed once additional follow up interviews were held to dig deeper into the case with detail-specific questions. Twelve interviews were held in total, which means that some of the respondent were interviewed more than once. However, after the ninth interview no new information was gained. As the additional interviews only verified the results, no further interviews were needed and no more interviews were held.

2.4 Processing of empirical data

Qualitative research performed in interview form is often problematic to analyze as the amount of data that needs to be processed often is extensive (Bryman & Bell, 2005). Thus, it is common that authors revise their study purpose as they come to new insights regarding their concepts and issues chosen in beforehand (Langemann, 2008). This was also the case in this study as new angles emerged during the interviews, which affected our perspective.
However, to avoid a too extensive scope of material the study was limited to one company and only relevant respondents within that organization. Thereafter to prevent any material from getting misinterpreted during the analysis, all interviews were recorded and other details (e.g. expressions and body language) were documented on paper. The records were transcribed onto paper after each interview to create a clearer understanding of the material at hand, so that it was possible to ask further questions if something was unclear. This is according to Bryman and Bell (2005) common during qualitative research as it can be hard to gain all information at once, which means that more information might be needed. Further, they state that it goes in line with the iterative approach, which was suitable as it was the chosen approach in this study.

Once all the interviews were performed, the empirical data was consolidated into different categories and themes based on the patterns and commonalities that emerged. As argued the first interviews were guided by the first draft of the theoretical framework. It can thus be argued that the empirical data partly is influenced by theory. However, as the theoretical framework and hence the interviews were adapted to fit the story of Sectra, it can be argued that the empirical data to a greater extent speaks for itself. For that reason, the empirical part of the study is presented with citations and text that lets the empirical data speak for itself.

According to Bryman and Bell (2005) consolidating empirical data into categories and themes in that way is often the most effective way to process interviews. The authors mean that by creating a clear and structured overview it is often easier to thereafter analyze the data as common patterns easier can be found for the analysis. Once the empirical part of the study was conducted, the patterns and commonalities that emerged in the empirical part of the study was analyzed and categorized further to form the model of analysis. Thereafter, the theoretical framework was adjusted to fit the findings, which according to Bryman and Bell (2005) goes in line with the iterative approach chosen for this study. Afterwards, the analysis was performed by applying the processed theoretical framework to the model of analysis.

2.5 Ethical aspects
Independent of the research and research method used to gather empirical data, ethical issues always need to be considered as they are closely related to individual integrity (Johannesson & Tufte, 2003). Therefore, there are many rules and regulations that need to be followed when performing research, especially when it comes to performing studies on people. In Sweden, these aspects are presented in the Codex published by the Svenska Vetenskapsrådet (Codex, 2013). The Codex addresses ethical aspects concerning; (1) information requirements, (2) requirement of consent, (3) confidentiality obligations and (4) utilization requirements. These aspects have been taken into consideration in the study.
To fulfill the information requirements, all respondents were informed about the purpose of the study and thereafter they had to give their consent that they wanted to proceed with the interview. Bryman (2011) holds the information requirements as the most essential part of the ethical discussion as it creates awareness of what is going on for the respondents. After informing about the purpose of the study, respondents were also informed about their terms of participation. They were informed that participating was optional and that they had the possibility to skip questions and at any time end the interview or stop for questions. This is described as the requirement of consent, which according to Bryman (2011) means that participants are informed about that participating is on their conditions.

Further, the respondents were informed about the confidentiality obligations which means that participants were informed about how their personal information would be handled (Mason, 2002). They were told that their information was going to be handled with confidentiality. All information was handled with care to not influence or affect anyone, both within and outside the organization, in a negative way. Lastly, the respondents were also informed that the interviews and gathered data was going to be exclusively used for the purpose of the study. As all participants agreed to be recorded during the interviews, they were also informed that all information was going to be stored in a secure manner, which Mason (2002) holds as an important aspect for fulfilling the requirements of utilization.

2.6 Method criticism
The usage of qualitative interviews are, according to Bryman (2011), often associated with problems as the content of the respondents reflections and perceptions are interpreted by a third party. The author along with Bjurwill (2001) means that different interviewers have different backgrounds which can result in that material is interpreted and analyzed in different ways. Thus the authors hold that the result of qualitative studies can vary depending on the researchers’ skills, background and approach as they tend to affect the end result. Johannessen and Tufte (2003) therefore argue that it is of importance for researchers to make sure that they are not taking advantage of their position of power. This means that researchers need to be cautious when performing interviews by making sure that questions are not biased in a way that fosters the interviewer’s preferred answer. Bryman (2011) holds this as important as he means that respondents often have other reflections and perceptions to the questions which show a more truthful view of the reality. Therefore, Patel and Davidson (2003) argue that it is of importance not to affect the respondents too much as it can result in that respondents consciously or unconsciously answer in a way that deviates from the truth. To avoid the results from being too biased, these points were taken into consideration when performing the study. This by creating neutral and open questions and letting the respondents lead the interviews, within the frames of the interview guide.
Further, according to Denscombe (2009) respondents often answer differently to interview questions as they interpret the person that leads the interview differently. According to Johannessen and Tufte (2003) such personal influencers from interviewers can be for example gender, age and position. Denscombe (2009) along with Johannessen and Tufte (2003) argues that there is a risk that such characteristics create distance between the respondents and the interviewer. According to Bryman and Bell (2005) such behavior is recognized as the interviewer-effect and that such behaviors are impossible to avoid. However, to minimize such effects we dressed neutrally and appeared professionally during the interviews, in line with the recommendations of Denscombe (2009).

In addition, Patel and Davidson (2003) in line with Denscombe (2009) add that interviews can lead to that important nonverbal communication gets lost. They mean that once an interview is being transcribed onto paper, important data on for example body language and ironies easily gets forgotten. To avoid this in the study, all interviews were recorded and important nonverbal communication was written down on paper during the interviews.

Moreover, the usage of the tape recorder could have inhibited and created an uncomfortable situation for the respondents (Bjurwill, 2001). Denscombe (2009) further argues that tape recorders can have a disruptive effect on the interview as an intrusive factor. However, Bryman and Bell (2005) state that it often is necessary to record interviews because of the extensive material that otherwise need to be written down and remembered. The authors argue that important data otherwise easily is forgotten, remembered wrong or misinterpreted. In that way studies can miss out on important information that compromises the end result. For that reason it was decided to use a tape recorder during the interviews, as the length of the interviews were too long to remember everything that was discussed. However, to avoid the respondents from feeling uncomfortable they were informed in beforehand that the interviews were going to be recorded and that they could stop the interview at any time.

2.7 Source criticism
For a study to be trustworthy it is important for authors to take on a critical approach when it comes to selecting primary and secondary material (Holme & Solvang, 1997). The authors argue that authors thus need to approach both primary and secondary sources with respect and caution. They mean that primary sources always are to prefer as they stain for the original source. For that reason, the majority of all empirical data is based on primary sources. However, according to Lekvall and Wahlbin (2001) all data collected needs to be handled with criticism as individuals sometimes tend to withhold some of the information or in some way embellish the truth or present information improperly. Therefore they argue that all types of data needs to be approached with a critical eye. The best method for preventing such risks
are to perform interviews face to face, as it has been proven that individuals more often stick to the truth when meeting their interviewer in person (Lekvall & Wahlbin, 2001).

However, Lekvall and Wahlbin (2001) also state that dishonesty is not the only issue that needs to be considered when performing interviews. They mean that miscommunication also is common and that interviewers therefore need to be aware of that performing interviews via for example email or phone therefore is not to prefer. This is because in such circumstances the interviewer cannot pick up the respondents responses to different questions (e.g. expressions, body language and signs of confusion), which often lead to miscommunication and misunderstandings. For those reasons, all interviews in the study have been performed face to face, to prevent the risk of getting incorrect data that would influence the end results.
3. Theoretical framework

The theoretical framework builds upon articles regarding the issue of individuals’ resistance to share specialized knowledge with colleagues in project based organizations. Selected theories within the research fields of project based organizations, knowledge management and management control systems were considered as relevant to perform the analysis.

3.1 Project based organizations

The discussion on project based organizations can be traced back to the discussion on Ad hoc organizations held by Minzberg in the late 1970s (Forslund, 2013). According to the author such organizations were mainly operating in fast changing environments and highly dependent on research and development. The author holds that what distinguish such organizations from traditional ones are their many horizontal connections. Also nowadays, as the business environment changes, an ever increasing number of organizations with a heavy weighted development department chooses to adapt their organizations in a way that aim to foster innovation and development (Lindkvist, 2004). The author along with authors like Hobday (2000) and Whitley (2006) holds that to sustain competitive advantage it is therefore common that organizations reorganize to become project based. This as it is argued ideal for managing today's increased product complexity and dynamic market.

Further on, according to Galbraith (1969) the ideal project based organization is organized entirely around projects. However, the author states that such organizations rarely exist and that project based organizations come in different variations. The definitions of project based organizations thus differ widely depending on the author referred to. However, the most acknowledged ones are the definitions provided by Whitley (2006), Hobday (2000) and Lindkvist (2004). However, only the definition provided by Lindkvist (2004) referred to as the Matrix type of project based organization has been of focus in this study.

3.1.1 Matrix project based organizations

The matrix type of project based organization is defined as an organization which manages several projects at the same time (Lindkvist, 2004). This definition differs from the one provided by Hobday (2000) as the author means that projects can impact, intertwine and gain from each other. He means that resources in such organizations are shared and exchanged between projects. However, in comparison to the definition of Whitley (2006), both Lindkvist (2004) and Hobday (2000) agree on that project based organizations are of a more permanent nature. They mean that once projects are finished, members of the project team move on to new projects and create new cross-functional teams within the same organization.

However, Lindkvist (2005) states that such organizations seldom exist in its pure form and that the most typical form of the matrix type of project based organizations are not completely structured around projects. Instead, the author means that the matrix type usually only is
bespoken of as a part of an organization, most typically departments with a heavy weighted development department. Further he holds that it is only in this particular type of project based organization where knowledge sharing is present, as it only is within this definition where projects are exchanging resources. For that reason, only the matrix type of project based organization has been of focus in this study.

### 3.1.2 Weaknesses and strengths associated with knowledge sharing

What makes the matrix type of project based organization especially strong in some aspects, make it weak in other situations. Below, the most relevant strengths and weaknesses associated with its sharing of knowledge is explained to create an overview.

Project based organizations are argued to be ideal for managing today’s increased product complexity and dynamic market as operating in projects have been proven to make such organizations flexible to changes (Lindkvist, 2004). The author claims that it is one of the main reasons behind why such organizations are successful in sustaining their competitive advantage. Further, the author holds that the strategic management in such organizations rely on the individual expertise and that their project teams are able to self-organize. This also means that rules and routines typically are limited, which make such organizations more flexible to adapt to customer needs and changes in the market (Lindkvist, 2004).

Moreover, the fact that such organizations are built around temporary projects and cross-functional teams is another strength, as expertise from different fields are brought together and matched according to the needs of specific projects (Lindkvist, 2004). In addition Sapsed (2005) holds that it is beneficial as such organizations distribute individual competencies instead of having all individuals developing all the core competencies themselves. The author argues that this in turn make them efficient. However, the strengths associated with working in cross-functional teams also have negative influences on knowledge sharing, which means that there also are weaknesses associated with project based organizations (Lindkvist, 2004).

Firstly, Prencipe and Tell (2001) argue that project based organizations typically struggle with the codification of knowledge. The authors mean that as there typically is no or little reliance on managerial routines and organizational procedures, knowledge tend to stay embedded within project teams and individuals. It further means that knowledge, routines and also teamwork skills do not get codified into practices and procedures, which implies that colleagues, other project teams and the organization itself are not able to benefit from others experience and expertise (Prencipe & Tell, 2001).

Secondly, Weick and Roberts (1993) state that project based organizations also tend to suffer from limited overlaps of interdependent skills and that in addition the short term nature of the
projects has been confirmed ineffective for group development. Weick and Roberts (1993) further explain that these traits challenge the strategic level of project based organizations with regards to governance as it becomes problematic to form common knowledge bases and shared understandings since specialized knowledge does not get integrated.

Lastly, Dougherty (1992) states that tensions and power struggles often arise in project based organizations as individuals tend to compete for the same responsibilities, control and authority. As a result, individuals have a tendency to refuse to share their knowledge with others in order to protect their specialization and position (Sapsed, 2005; Denison et al., 1996). This even though they typically are aware of the fact that the sharing and integration of knowledge would benefit the organization and other ongoing projects (Sapsed, 2005). Hence, the organizational learning, which Grant (1996) holds important for the survival and competitiveness of firms, is compromised and knowledge stays embedded within individuals (Schmickle & Keiser, 2008). Hence, there are many issues associated with knowledge sharing in project based organizations. However, the problem of focus in this study is with respect to the weakness discussed in this paragraph, individuals’ resistance to share their knowledge with others operating within the same project based organization.

3.2 Knowledge
3.2.1 Tacit and explicit knowledge
Like in most definitions, also the definition of knowledge also differ depending on the author referred to (Baumard, 1999; Eisenhardt & Santos, 2001). According to Davenport and Prusak (1998) knowledge is the mixture of experiences, values and contextual information and insights. However Baker et al., (1997) define knowledge as the abilities, experiences and information that individuals use to solve different problems with. These are the more general definitions of knowledge while Baumard (1999) along with authors like Polanyi (1962) and Lam (2000) states that knowledge needs to be separated into tacit and explicit knowledge.

Tacit knowledge is according to Gourlay (2002) a highly personal and context specific knowledge form which is deeply rooted in personal ideas, experiences, emotions and values. This type of knowledge is experience based and embedded within individuals (Sternberg & Horvath, 1999). Explicit knowledge on the other hand is the type of knowledge often referred to as “know-what”, which is knowledge formalized and codified (Brown & Duguid, 1998). In comparison to tacit knowledge, this type of knowledge is easier to identify, store and retrieve in documents which often is stored in knowledge management systems (Wellman, 2009). Thus explicit knowledge is easier than tacit knowledge to communicate as it refers to knowledge that is well known and easy to access and understand (Birkinshaw, 2001).
However, according to most theoreticians explicit knowledge is considered to be less valuable than tacit knowledge (e.g. Bukowitz & Williams, 1999; Cook & Brown, 1999). This because, the authors mean that, explicit knowledge is of a more simple nature and does not contain knowledge that is based on “know-how”. Thus explicit knowledge cannot result in sustainable competitive advantage as it is easy to imitate by competitors (Rebernik & Sirec, 2007). Authors like Grant (1996), Dalkir (2011) and Hislop (2009) instead hold that it is the tacit knowledge that is the most valuable as it is difficult to copy. Thus tacit knowledge is what makes organizations unique and competitive (Rebernik & Sirec, 2007; Wellman, 2009).

3.2.2 Codification - converting tacit knowledge into explicit knowledge
Adding to the discussion about knowledge, many people fail to distinguish tacit from explicit knowledge (Prencipe & Tell, 2001). The discussion of codification is thus concluded to create a better understanding for the difference. According to Cowan and Foray (1997) knowledge codification is the process of converting tacit knowledge into explicit knowledge. Further Kogut and Zander (1992) clarify that it is the process that turns tacit knowledge into information (e.g. messages, rules and relationships). In other words codification is the process of making tacit knowledge usable for the rest of the organization.

Moreover, codification is important for organizations mainly for two reasons. Firstly, unless knowledge is codified and stored within organizations the loss of key people result in tacit knowledge leaving the firm (Grant, 1996; Schmickle and Keiser, 2008). Hence, important factors for what make organizations unique disappear and thus the competitiveness of the organization is compromised (Grant, 1996). Secondly, the work could become less efficient as individuals cannot easily access colleagues’ expertise (Sapsed, 2005). Codification thus builds common knowledge bases that aim to facilitate the sharing of knowledge.

3.2.3 Knowledge sharing
Knowledge sharing is a part of knowledge management, which is the process of actively and systematically handle and use the knowledge of an organization (Laudon & Laudon, 2001). By definition it is the management of knowledge which includes creating, organizing, sharing and applying knowledge (Fard & Selseleh, 2010). Moreover, it aims to spread tacit knowledge by codifying it into explicit knowledge so that it can be stored and used within the organization (Nunes et al., 2006). According to Conner and Prahalad (1996) a functioning knowledge sharing stands for as much as 90 percent of the outcomes of a successful knowledge management.

Referring to Lee (2001) knowledge sharing is the activity in which knowledge is being transferred between individuals, groups or organizations. Such activities are often challenging for organizations as time and resources usually are scarce (Alvarez & Busenitz, 2001).
According to Nonaka and Takeuchi (1995) there are many different ways in which an organization can share knowledge. They further argue that the most common way of sharing knowledge is through communication and interaction. However, this study does not focus on the methods for knowledge sharing, it focuses on how knowledge sharing can be facilitated.

Here the discussion on individuals' resistance to share their knowledge with others operating within the same firm takes its departure. As argued above, it is especially the sharing and codification of tacit knowledge that is complex and often associated with issues, especially in project based organizations (Sapsed, 2005; Denison et al., 1996). For that reason, only tacit knowledge has been of focus in this study. However, there are methods that organizations can use to facilitate their knowledge sharing. As already described knowledge management systems are the most common facilitator, but aspects like trust, management control systems and incentives should also be seen as valuable solutions (Cabrera & Cabrera, 2002).

3.3 Facilitating knowledge sharing behaviors

3.3.1 Using management control systems to support knowledge sharing

There are many different methods that organizations can use in order to motivate employees to share their knowledge with others operating within the same firm. Authors like Turner and Makhija (2006) hold that the most common way to stimulate such behaviors is through the implementation of management control systems. The authors moreover explain that all organizations are different and thus in need of different types of management control systems.

According to Turner and Makhija (2006) three control types are most common. These are; (1) outcome control, (2) process control, and (3) clan control. They explain that what is general for all control types is that they all aim to foster desired targets set by organizations. However, depending on the objectives different control types are more or less suitable. For the purpose of knowledge sharing, the authors especially hold clan controls suitable. This as they argue that it in comparison to the other two control types focuses on organizational commitment, which enhances open business environments that are stimulating knowledge sharing both within and between projects. For that reason, only clan control has been of focus in this study.

3.3.2 Clan control

As argued in the previous section, Turner and Makhija (2006) argue that clan control is ideal for steering the behaviors of knowledge sharing in aimed directions. The authors explain that clan control are to be considered as:

"The informal socialization mechanisms that take place in an organization and that facilitate shared values, beliefs, and understandings among organizational members"

Clan controlled organizations are effective when their organizational environment is characterized by a high level of interaction and communication (Barker, 1993; Flamholtz, Das & Tsui, 1985). Adding to this, Floyd and Lane (2000) mean that members within clan controlled organizations typically identify themselves with their organization and feel a strong commitment to its culture and members. The authors suggest that members share the same beliefs as well as norms and priorities and that all of these characteristics contribute to high levels of goal congruence and common interests. Barker (1993) further argues that clan controlled individuals often, due to their commitment to the organization, feel that the work itself contributes to keeping them motivated to perform and share their knowledge internally. This goes in line with Jashapara (2005) who means that such commitment affects both the relationships and the trust between employees and that cooperative cultures are more favorable for knowledge sharing than competitive ones. Therefore, the author stresses the value of creating open organizational environments as it means that knowledge sharing to a greater extent occurs more voluntarily.

Moreover, Barker (1993) along with Kirsch (1996) argues that common examples of clan control activities are different types of ceremonies and rituals, as well as other processes of socialization such as meetings, the usage of teams and interorganizational transfers which together build strong organizational cultures. In addition Floyd and Lane (2000) argue that other activities also need to be considered, but that it is of importance to make sure that all activities go in line with the cultural control and that it supports the organizational culture.

Flamholtz et al., (1985) hold that clan control is proven effective in organizations that deal with knowledge that is hard to codify. Such control mechanisms are therefore of importance in organizations that are highly dependent on combining tacit knowledge (Turner & Makhija, 2006). High levels of interaction is therefore necessary as diverse sets of expertise need to be combined in order to complete tasks (Hoopes & Postrel, 1999). This means that individuals are highly dependent on each other to perform tasks, which according to Hoopes and Postrel (1999) create shared understandings for other people’s knowledge and contributes to the creation of team spirit.

In addition, it is argued by authors like Turner and Makhija (2006) that as clan controlled organizations are characterized by a high level of socialization, such organizations are especially good at transferring tacit knowledge internally. Nonaka (1994) agrees that complex knowledge effectively can be transferred within such organizations through socialization. This as tacit knowledge directly can be transferred onto others through the main source, which according to the author reduces the risk for misunderstandings. In that way it is argued that the best way to transfer tacit knowledge is through its application (Argote & Ingram, 2000).
This as the authors state that such knowledge at best is accumulated over time, as it creates a deeper and more complete understanding for its nature.

However, as Szulanski (2000) along with Polanyi (1962) argues that tacit knowledge only can be transferred through its application, it is often time consuming and laborious. Turner and Makhija (2006) agree that such transfers are difficult to perform, putting pressure on the organization and its teams to collaborate. Merchant and Van der Stede (2011) further state that in order for management controlled organizations to work efficiently, they need to combine the right mix of individuals that fit their organization to maintain their open environment. The authors further argue that such organizations also need to work on activities that strengthen their controls to maintain their organizational culture and spirit.

### 3.3.3 Incentives

Over the last decades the use of incentives have increased significantly as a method for management control that aim to foster behaviors as well as to obtain goal congruence (Rose & Manley, 2010). Authors like Merchant and Van der Stede (2011) therefore stress that organizations should implement incentives since they assist to stimulate behaviors, such as knowledge sharing. Further the authors explain that the main purpose of an incentive always should be to target a specific behavior that an organization needs to enhance. Thus they mean that incentives also work as information systems as they address what is of value. In that way, the authors mean that incentives are ideal for communicating expectations so that employees know what to aim for. Incentives therefore need to be not only motivational and personnel related, but also informative to be successful (Merchant & Van der Stede, 2011).

To create incentives, Merchant and Van der Stede (2011) argue that organizations firstly need to know that type of behaviors that they need to enhance in order for incentives to be formed successfully. It means that when the aim is to enhance knowledge sharing behaviors, organizations need to focus the underlying cause behind why individuals refuse to share it with others. Once the reason for the issue is detected, the next step is to find suitable incentives that aim to prevent that behavior for occurring (Merchant & Van der Stede, 2011). For the same purpose incentives also need to go in line with organizational strategy and goals as well as norms and values to not interfere with them (Svensson & Wilhelmsson, 1988).

### 3.3.4 Incentives customized to clan control

For incentives to be of value, it is important to realize that individuals, groups and organizational cultures are driven and motivated by different factors (Dalton & Lawrence, 1971). In that way, Dalton and Lawrence (1971) mean that organizations need to customize incentives to fit their specific needs. Schuler and Jackson (1987) argue in the same direction by stating that it also depends on organizational structure, as different organizational types respond to incentives differently. Therefore it can be concluded, that it is of importance for such organizations to make sure that their incentives fit their cultures (Floyd & Lane, 2000).
For that reason, clan controlled organizations can consider both formal and informal monetary and nonmonetary rewards as well as individual and group based rewards to get the right mix of incentives that go in line with their specific goals and cultures (Bonner & Sprinkle, 2002). However, Turner and Makhija (2006) argue that group based incentives are ideal for clan controlled organizations as they build team spirit and foster goal congruence. However, Constant, Kiesler and Sproull (1994) argue that clan controls themselves sometimes create environments where individuals do not feel the need to get anything in return for their knowledge sharing attitude. Therefore the authors argue that it is of importance for organizations to realize that incentives not always are necessary.

### 3.3.5 Risks associated with incentives

Even though incentives are associated with positive effects, organizations need to be aware of that they sometimes foster unwanted behaviors that are tough for organizations to foresee (Merchant and Van der Stede, 2011). The authors mean that this means that organizations also need to consider the negative side effects that incentives might have on their employees.

One common issue with incentives is that they sometimes foster behaviors where individuals put their own interests before their organizations’ (Merchant & Van der Stede, 2011). The authors mean that such issues often are associated with short term monetary rewards, where individuals’ short term thinking have been shown in the past to have big implications for the survival of organizations. Further, Kohn (1993) argues that individual rewards can affect team spirit as individuals refuse to coordinate and cooperate with others to protect their positions. As can be understood it means that unwanted behaviors may be fostered. In addition the authors state that incentives can cause stress, irritation and discord on and between individuals, which often is the result of goals being set to high, to unfair or unreachable according to timeframes (Merchant & Van der Stede, 2011).

Further, there can also be issues associated with the implementation of group based rewards, where the most common effect is known to be lack of motivation and free riding (Merchant & Van der Stede, 2011). The authors mean that such behaviors usually occur when individuals feel that they do not have the power or possibility to affect the result or criteria that the incentive is based on. In other words, there are many factors organizations need to consider before implementing incentives.

### 3.3.6 Using incentives to stimulate knowledge sharing behaviors

As described above, using incentives can have big implications on knowledge sharing. However, organizations usually fail to realize the potential benefits of using incentives to bridge over the issues and getting individuals to share their knowledge with others (Hansen et al., 1999; Liebowitz, 2003). Wang and Noe (2010) state that knowledge sharing thus should be motivated by incentives. This as the authors hold that it has been proven in the past that
firms which have invested time and money in getting their knowledge sharing incorporated into their incentives usually show better organizational results than others.

In addition, Hansen et al., (1999) and Liebowitz (2003) hold that the lack of incentives thus often serve as barriers for knowledge sharing as individuals do not see the point in sharing it with others. The authors therefore argue that organizations should invest time and money in trying to understand what they have to gain from it. This goes in line with Sapsed (2005) and Denison et al., (1996) who state that individuals often struggle with the motivation to share their knowledge with others and therefore need to find solutions for how to facilitate knowledge sharing behaviors. However, again referring to Constant, Kiesler and Sproull (1994) incentives are not always the answer to facilitate a functioning knowledge sharing.

3.4 Summary of the theoretical framework
Below, the main features of the theoretical framework are presented to create an overview of the theory chapter.

Tabel 2. Summary of the theoretical framework

<table>
<thead>
<tr>
<th>Main features of the theoretical framework</th>
<th>Project based organizations</th>
<th>Knowledge</th>
<th>Facilitators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix type</td>
<td>Tacit knowledge</td>
<td>Clan control</td>
<td>Incentives</td>
</tr>
<tr>
<td>Argued ideal for managing today's dynamic market and product complexity</td>
<td>Knowledge deeply rooted in the minds of individuals. Experience based knowledge. Hard to codify and transfer through IT-systems. Knowledge sharing through learning by doing &amp; interaction. Common that employees resist to share this type of knowledge.</td>
<td>Type of management control system. Common activities are socialization gatherings. Suit firms dealing with tacit knowledge. Activities that result in organizational commitment. Known to stimulate knowledge sharing. Can lead to efficient knowledge sharing.</td>
<td>Aim to stimulate targeted behaviors. Can be used to motivate knowledge sharing behaviors. Need to be customized to organizational structure and operation. Need to go in line with strategy, goals, norms &amp; values. Group based incentives are considered ideal for stimulating knowledge sharing behaviors.</td>
</tr>
</tbody>
</table>
3.5 The theory model
The iteratively generated theoretical framework has been put into the model that can be seen below. The model is thus based on existing theory and represents the causal relationships between clan control, incentives and knowledge sharing by addressing the effects that incentives and clan control have on knowledge sharing behaviors.

Figure 3. The iterative theory model. The causal relationships between clan control, incentives and knowledge sharing, processed by Rozic and Taxén (2015)
4. Empirical research on Sectra AB

The empirical research presents the semi-structured interviews held with respondents at Sectra AB. The empirical data is presented according to the found themes based on patterns and common denominators which emerged during the processing of the empirical data.

The respondents referred to during this chapter are:

Tabel 3. A representation of the respondents interviewed

<table>
<thead>
<tr>
<th>Professional position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager Professional Services</td>
<td>Catharina Sandberg</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Nina Karlsson</td>
</tr>
<tr>
<td>Project Manager</td>
<td>Therese Malakow</td>
</tr>
<tr>
<td>Project Manager</td>
<td>André Genkel</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>Roger Borg</td>
</tr>
</tbody>
</table>

4.1 Brief presentation of Sectra AB

The history of Sectra AB took its departure in the 1978 as a spin-off organization from Linköping University, and since the mid-1980s the company has been competing in the market of development and sales in high technology products and systems (Sectra, 2015). The organization is today divided into the fields of secure communications and medical systems.

“The knowledge to meet expectations. The passion to exceed them”
- Sectra’s Slogan.

This study has been performed at Sectra medical systems, which with their market leading position in Scandinavia competes in the market of providing medical it-systems (Sectra, 2015). The respondents explain that they provide systems used for the management of medical pictures and systems for patient information within radiology. Further they explain that the majority of their customers operate within radiology and mammography, and the diagnostic of cancer is their main focus. Currently, more than 1700 caregivers are using their products worldwide and the demand for their products steadily increases (Sectra, 2015).

4.2 Operating in projects

Sectra AB is a project based organization highly dependent on being innovative and flexible to changes in customer needs and market regulations (Sectra, 2015). This as they operate in a sector where changes in for example politics and public health influence customer demand for their products and services. Therefore the respondents hold that their operation pace is high and their projects often volatile. The respondents explain that they always have many ongoing projects at the same time and that the length of their projects varies between three months up to a couple of years. They further explain that operating in projects is crucial for the survival
of Sectra as they need to adapt to changes fast in order to survive. The respondents argue that operating in projects thus is beneficial as it makes Sectra flexible to changes.

“We are not manufacturing cookies of different kinds that are placed in boxes and sold in stores. Our workflows are complex and for us it is unimaginable to work otherwise than in project form”

- Therese, project manager.

As already mentioned, all respondents stress the importance of the organization being project based. They mean that another way of working at Sectra would not be possible as their way of working is highly innovative and persistently needs to be developed. Catharina argues that operating in projects puts pressure on her and two fellow colleagues that are responsible for the allocation of resources into teams. She explains that as almost everyone at Sectra is operating numerous projects at the same time, it is a challenging task to form teams with schedules that fit together and to distribute workload in a manageable way. Catharina further argues that expertise from different fields are brought together to form cross-functional teams that typically consist of one project manager, a few project engineers and a few application specialists.

“Today our employees are more specialized than before. We found ourselves in a position where it was necessary to specialize, as we operate in a complex field”

- Catharina, manager professional services.

All respondents agree on that specializing on different components is beneficial for their workflows. However, specializing can also be challenging both for the employees and the organization. Catharina argues that with too much specialization the organization becomes dependent on their key people. Thus to avoid losing important knowledge Catharina explains that their goal is that no one alone should be responsible for one component. Therese further claims that it is good as employees always have the possibility to collaborate with and replace each other. Also Roger holds that it is beneficial, as he as a project engineer feels comfort with knowing that a second pair of eyes to any issue is available. Further Catharina and Therese agree on that it prevents important knowledge from leaving Sectra.

“Taking on projects does not necessarily mean we can foresee the outcome”

- Therese, project manager.

Therese explains that it is not unusual that projects sometimes need additional knowledge along the way. She argues that it sometimes is hard to anticipate what knowledge that will be needed in projects as both the process and the outcome sometimes is unclear. She explains that even the simplest standard projects can throw in a turn, as customer demands can change
along the way. Nina explains that another issue is that there sometimes arise problems with installing products as customers might have other systems that are not compatible with Sectra’s solutions. She further explains that when such problems arise or when more people are needed in a project, the project manager can always turn to the resource owner for backup.

“It is a challenge working in projects at Sectra and it feels like everyone is always motivated to perform at their best. I believe it is the rush you get from working and solving problems together that motivate us to share our knowledge with others, both within and outside our project teams”
- André, project manager.

Therese explains that their projects differ both in length and level of difficulty. She means that some projects go on repeat while others are completely new which affects the nature of the projects. Moreover, André and Nina state that many projects are similar and that it is beneficial as accumulated knowledge can be reused, which cuts both costs and time.

4.3 A knowledge sharing business

“If we found ourselves in a position where our employees withhold their knowledge from each other we would be way over our heads”
- Therese, project manager.

Therese means that as Sectra is highly dependent on high technology expertise they would suffer great losses if employees would withhold their knowledge from others. She explains that most knowledge within Sectra takes years to accumulate and that they therefore need to make sure that all valuable knowledge stays within the organization. Catharina agrees by explaining that they constantly work with educating employees to make sure that they can survive losses of key people and retirements.

“I do not gain anything by keeping my knowledge to myself, why would I not help others?”
- Roger, project engineer.

All respondents agree on that knowledge sharing happens spontaneously at Sectra, without that managers need to force it out of their employees. André and Roger mean that the mindset within Sectra is to constantly improve by learning from each other's mistakes and collaborate to reach project goals. They thus value helping colleagues, even if they are not currently working on the same particular project by making knowledge and expertise, associated both to the solution and execution, available for anyone within the organization to access. However, as time sometimes is scarce Roger explains than there is a trade-off between helping colleagues and focusing on own assignments. However, Roger along with the other respondents argues that it always is best to help colleagues right away, as it means gaining in
the long run. This as expertise is transferred onto others so that they will not need help the next time and that they in turn can transfer that knowledge forward. In that way the respondents hold Sectra to be a learning organization, where their open environment together with their knowledge flows and project based workflows have contributed to the survival and success of Sectra.

4.4 Methods used to facilitate knowledge sharing

“At Sectra we have many different methods that we use to facilitate knowledge sharing”
- Nina, project manager.

The respondents claim that at Sectra employees do not need to know all the details to be able to work together. They mean that they are good at exchanging experiences and knowledge, which saves a lot of time. Catharina believes that as they have seen the benefits of collaborating within Sectra, employees feel that being helpful and sharing their knowledge is natural. Sectra therefore aims to enhance that feeling in all of their employees from the first day of recruitment and forward. Roger explains that Sectra has a mentoring program for newly recruited employees, where new employees get a mentor to guide them through the first period with the organization. He thinks that the program contributes to the building of networks, which he holds as crucial when it comes to accessing someone's knowledge. This as he experiences that it is easier to access someone's expertise when you know the person that you have to ask or at least know who to ask for.

Roger along with Nina argues that with time employees memorize where to turn for specific knowledge. Nina and Therese further state that they seldom experience negativity when it comes to asking for help. They further argue that independent of your working experience at Sectra you are always able to access someone's specialized knowledge. Roger explains that he prefers to educate and thus transfer his knowledge onto employees asking him for help instead of solving the problem himself. He means that by educating people directly everyone benefits as it helps the person in question to develop his/her knowledge base for the future.

“Sometimes we choose to educate less experienced employees by challenging them with a task that they do not feel completely secure with. It is a great way to transfer knowledge [from experienced to less experienced employees] as it forces the employee to step up to the challenge”
- Therese, project manager.

Therese believes that one of the best ways to transfer competences is by making a less experienced employee responsible for a certain component or project. The inexperienced employee gets a mentor for support during the project. However the less experienced employee is the primary contact and thus also responsible for the outcome. She stresses the
importance of support, but argues that it is a good method to transfer knowledge as it otherwise is common that someone with less experience steps back and lets someone with more experience take the lead in too advanced situations. She argues that the risk can be prevented by instead using such mentorship programs.

“Our coffee breaks are sacred, at 10am and 3pm ‘the Swedish fika’ takes place. We solve many of our problems over a cup of coffee”
- Nina, project manager.

Nina explains that their coffee breaks are vital for communication and knowledge sharing at Sectra. Along with the rest of the respondents she argues that most of the unsolved problems get discussed and often even solved due to the relaxed atmosphere. Therese states that exchanging experiences across departments more efficiently occur during coffee breaks as it sometimes is the only time during the day that everyone gets together at the same place. Nina further argues that peoples’ attitudes towards problem solving at coffee breaks are positive. André further states that knowledge sharing circulates in the same way during department and project meetings, team building events and other formal and informal gatherings. He thinks that both Sectra is good at brainstorming and creating occasions for knowledge sharing.

“An organization can implement any number of knowledge management systems, without sharing any knowledge at all”
- Catharina, manager professional services.

All respondents agree on that Sectra’s knowledge management system is not the main contributor to knowledge sharing. As already mentioned they hold that it instead is the social interactions that are of most value, as knowledge is complex and easier to transfer through communication or learning by doing. According to Therese their complex knowledge is hard, if not impossible to store, but efforts are made to at least document the tools for how to develop such skills. Catharina however further explains that process information, project specific knowledge, schedules and checklists can be found in their system. Nina holds that even though many employees do not use the system on a daily basis, it is in fact useful for less experienced employees and during the startup period of projects. This as she explains that valuable information on previous problems and advices for the execution, that is related to particular projects, can be found in their system. In that way at least explicit knowledge is stored for the future, which makes it transferable when needed.

Nina however believes that with experience the need and usage of their knowledge management system decreases as employees learn and extend their personal knowledge bases. Catharina further agrees by stating that their way of using competence groups instead is more
efficient as it means communicating and interacting with the primary source of the knowledge. In that way she believes that the organization saves time. However, she also values the knowledge management system as it means storing knowledge for the future which prevents knowledge losses when key people leave the firm.

4.5 Barriers to efficient knowledge sharing

According to the respondents there are only a few issues related to their sharing of knowledge. The issues brought up during the interviews are related to knowledge codifiability, personalities, project time frames and documentation of skills.

“The distribution of skills can cause issues in project teams as people sometimes tend to get too technically oriented during discussions”
- Therese, project manager.

Therese along with Nina explains that there generally are no issues with collaborating within teams and understanding each other at Sectra. However, they hold that individuals sometimes get too technical in their way of communicating with others not familiar with their expertise. For that reason all respondents agree on that it is of importance to adapt their way of explaining the information to the receiver. Nina feels that she as a relatively new project manager, often experiences such issues. However, she argues that it is encouraged at Sectra to ask questions as much as needed as it means learning and developing skills.

“Everyone does not share knowledge spontaneously, but it does not mean that they do not want to”
- André, project manager.

André explains that knowledge sharing most often happens spontaneously at Sectra, without that anyone has to ask for it. He continues by stating that not everyone operates in that way. He means that some individuals tend to be quiet unless they are asked about their knowledge. Along with Therese he explains that there seldom is any resistance to share knowledge. They argue that it instead often depends on self-confidence and personality characteristics.

“It is the job of the resource owner to know who knows what”
- Catharina, manager professional services.

Catharina thinks that the main issue with knowledge sharing within Sectra is that only the resource owners have an understanding for which employees who possess certain expertise. She thinks that it would be of value for both the resource owner and the employees if that information would be easier to access. She explains that today all information about who knows what is imprinted in the minds of the resource owners, but that also employees
memorize it by experience. Further, as all of their employees hold time as the biggest issue concerning knowledge sharing, Catharina believes that a document telling who knows what would be of great value for the employees.

4.6 Stimulating knowledge sharing
The respondents stress two factors which the organization uses to stimulate the sharing of knowledge between employees. It can be noticed, that all respondents share the same opinion regarding which mechanisms that contribute to the successful knowledge sharing within Sectra. The respondents especially consider the organizational culture to be the main key to that success. However they also stress that their incentives contribute to a great extent.

4.7 Incentives used to facilitate knowledge sharing
To motivate knowledge sharing within Sectra, both planned and spontaneous incentives are used. Catharina stresses that the organization is aware of that individuals are motivated by different things and Sectra therefore works hard with it to satisfy their employees. She further explains that most of their incentives occur spontaneously consisting of for example positive feedback, gifts and other signs of appreciation. However, she also explains that Sectra has some formal incentives that have been shown to influence knowledge sharing positively.

“The ability to change position and career path within Sectra is motivating”
- Therese, project manager.

Therese explains that she during her time at Sectra has switched position within the business in Sweden. However, she also explains that there are possibilities to move abroad and change career path within Sectra. Catharina reveals that Sectra values such opportunities as it keeps individuals motivated to stay within the organizations. She further states that it is important as accumulating knowledge bases takes time and that synergies can be enhanced through the exchange of employees between departments and countries. André agrees by stating that switching departments help to create shared understandings and thus contributes to knowledge sharing. Catharina gives an example where one of the key people from her department currently has gone abroad to work. She believes that such opportunities gains Sectra in the long run, even if it disfavors another department at the moment. This as that individual’s knowledge can be used at another part of Sectra at the same time as they are able to fulfil the employee’s wish of changing path or position, gaining both parties.

“Becoming senior is an honor”
- Nina, project manager.
Another way of changing career path within Sectra is to aim either for the path of becoming manager or senior. Therese explains that it before was common that Sectra’s valuable people got promoted to managerial positions after some time with the organization. However, along with Catharina she reveals that Sectra has noticed that their employees not always value that kind of promotion. This as they get pulled away from their specializations and left with soft questions and personnel responsibilities, which they are not as interested in. They explain that of their experiences many people within Sectra are passionate about their work and not interested in becoming a manager. However, Catharina explains that Sectra wants to reward valuable employees and one way of doing so is through naming them senior. With the title senior comes also raised salary and the possibility to specialize even further within the field of their specialization. The naming of up to twelve seniors across the world occurs once a year during a ceremony and it is the colleagues that nominate the candidates. All respondents agree on that it is possible for everyone with experience to become senior and that they believe that it is a title the majority of their employees strive for.

“One of the most important aspects that we look for in a senior is whether that person contributes to others competence development or not”
- Catharina, manager professional services.

Catharina explains that the major criterion Sectra looks for in a senior is whether they contribute to knowledge sharing and if they show patience to transfer their competencies onto others. As it also is fellow colleagues that nominate candidates, all respondents agree on that it is important to be helpful and positive towards the sharing of knowledge. André adds that being the best is not always the obvious reason for getting nominated and he stresses that it is more likely to get nominated if you show compassion and the willingness to help. The attitudes towards the senior program are great and all respondents stress that it motivates their knowledge sharing significantly. This as all respondents stress that as the employees are the ones nominating the candidates for the senior positions, it make them feel valuable for the organization. All respondents further agree on that nominating seniors is something that goes beyond personal relationships and that employees at Sectra put a lot of prestige in choosing.

“I am motivated to share my knowledge as I am passionate about my work”
- Therese, project manager.

All respondents agree on that working at Sectra itself is the biggest motivation for the sharing of knowledge. They agree on that operating in projects is challenging and that it is impossible to manage without team work. Therese claims that no one themselves can contribute to organizational success within Sectra as they operate in project form. Moreover she also explains that there are many other reasons than incentives and salary that keep her from...
leaving the firm. She explains that the work itself and the business climate contribute to her feeling committed to her work. The other respondents also agree and they together conclude that it contributes to the fact that knowledge is being shared naturally and spontaneously.

“Why would you force something that is already working smoothly? I believe that further incentives would counteract our open and knowledge sharing culture”
- Nina, project manager.

All respondents agree on that the incentives that they already have are enough and state that it would be problematic to implement further ones that would fit their organization. They believe that it would be problematic as the focus of individuals could shift from the best interest of the organization and thus instead focus on own interests. They also stress that as Sectra operates in project form it would be problematic to recognize who to assign incentives to as projects often exchange resources (e.g. knowledge) with each other. They further state that as they already have an organization characterized by collaboration, further incentives would rather interfere with their attitudes towards knowledge sharing. Moreover, they believe that in order to keep Sectra as efficient and successful as now, all incentives considered should go in line with the values of the organization. They claim that incentives based on result based performance would make Sectra lose sight of their strong team spirit.

4.8 Organizational culture - fostering knowledge sharing behaviors

“I am proud to be a part of an organization that is open and puts value in knowledge sharing. No one withholds their knowledge from others and everyone seems to realize the positive synergies gained from cooperation”
- Catharina, manager professional services.

Catharina believes that no question is too stupid to be asked and that no one withholds their knowledge from others within the organization. She believes that it is due to that Sectra actively works hard with maintaining the spirit that teams work best when they collaborate and share experiences with each other. Moreover Nina states that she believes that their successful knowledge sharing is due to the strong culture imprinted in the walls at Sectra. Further Therese explains that colleagues at Sectra are like a second family and that the environment feels secure to work in. She believes that it is because of the environment at Sectra that people are open and cooperative, which also allows room for disagreements. According to her experiences, individuals at Sectra are not afraid to present their own opinions in discussions as they distinguish between professional and personal arguments.
“At Sectra we all have the same main goals, we want to finish projects and it does not matter whose project it is [...] If someone needs help they get it, we all work for the same firm”
- Roger, project engineer.

According to all the respondents, they all identify themselves with the organization which they all consider as an important factor for success. They explain that knowledge sharing primarily happens spontaneously as they all share the same values and feel committed to Sectra. The respondents again refer to team building activities, such as ceremonies and kick-offs, to have a great impact on building their organizational culture. Roger further explains that a lot of people within the organization also hang out in their spare time, developing even stronger bonds to each other. He believes that as people feel committed to colleagues, as well as the organization, people do not resist to help others as they care for each other.

“Children do what adults do, not what adults say”
- Catharina, manager professional services.

According to the respondents, there are a lot of different factors that has built and maintained their organizational culture. Catharina explains that along with their organizational culture, the CEO to a large extent is to be thanked for their strong team spirit as he has a vital role in their process of recruitment. She argues that for him it is important to put the right people together as he believes that it is the employees that are the most important resources of Sectra. She explains that the CEO meets all the candidates to make sure that the right individuals get hired. All respondents agree on that it is one of the most important keys behind their strong organizational commitment. Further, Catharina argues that the CEO is a role model for employees and that he therefore is in the position to influence behaviors. All respondents agree on, that his actions speak as well as his words.
5. Analysis

The analysis presents the authors interpretations of the case study with a deepen analysis of the empirical data with regards to the model presented in the theoretical framework. The analysis concludes with a developed model.

5.1 Model of analysis

The iteratively generated model presented in the end of the theory chapter has been used to analyze the empirical data to combine, question and verify existing theory. This with the aim to discover the causal relationships between incentives, clan control and knowledge sharing in project based organizations as well as to discover the effects that incentives and clan control can have on knowledge sharing behaviors in project based organizations.

However, no regards has been taken to the roles of the respondents as it was shown that it had no valuable impact on the results of this study. This as the attitudes towards the sharing of knowledge within Sectra was independent of their levels of profession. For obvious reasons those aspects are thus not a part of the model of analysis.

![Diagram: Relationships between clan control, incentives and knowledge sharing in project based organizations]

Figure 4. The model of analysis. The relationships between clan control, incentives and knowledge sharing in project based organizations, processed by Rozic and Taxén (2015)
5.2 Knowledge sharing behaviors at project based Sectra AB

Dougherty (1992) states that the most common problem with knowledge management in project based organizations is that tensions and power struggles tend to arise as individuals often compete for the same control, authority and responsibilities. According to Sapsed (2005) and Denison et al., (1996) individuals as a result have the tendency to keep their knowledge from others operating within the same organization, to protect their own specialization and position. However, at Sectra the statements above were not supported as it can be analyzed that knowledge sharing takes place frequently and on a voluntary basis.

What interferes with their knowledge management in is rather; (1) that miscommunications sometimes occur between employees from different disciplines due to their abilities to understand each other, (2) that not all employees, due to personality characteristics, spontaneously share their expertise with others when they are not asked, and (3) that no documentation exists regarding who possesses which knowledge. However, as it can be analyzed that these aspects do not relate directly to the focus of this study, they will not be further discussed.

Knowledge management is, as already argued above, a challenging task for Sectra. However, it can be understood that their knowledge sharing works efficiently, which according to Conner and Prahalad (1996) indicates a successful knowledge management. According to the authors the most successful organizations know how to manage their knowledge sharing as they argue that efficient knowledge sharing stands for as much as 90 percent of a successful knowledge management. It can be understood that Sectra is aware of the fact that they are highly dependent on knowledge sharing as they explain that they are highly dependent on high technology expertise to collaborate in cross functional teams. It can analyzed that their way of maintaining their knowledge flows is successful as they with hard work have managed to create an atmosphere were knowledge sharing is natural.

This goes in line with Teece (1998) along with Argote and Ingram (2000) who claims that it primarily is an organizations ability to keep their knowledge sharing functioning that leads to competitive advantage. It can be understood, that knowledge sharing occur spontaneously at Sectra as they have managed to develop a mindset where knowledge sharing is natural for the employees. Thus, it can be argued that their knowledge sharing functions well which, in line with the authors, most likely is one of the key factors behind Sectra's organizational success.

To conclude, it can be stated that Sectra works with different types of activities in order to maintain their knowledge sharing behavior, which can be argued important. This as Conner and Prahalad (1996) along with Grant (1996) argue that organizations constantly need to find
new ways to encourage and support knowledge sharing in order to sustain a successful knowledge management.

5.3 Clan control for commitment

Turner and Makhija (2006) argue that the use of management control systems to facilitate knowledge sharing has been proven efficient. This is also the case at Sectra where they have implemented clan control, which according to the authors is especially successful for the purpose of stimulating knowledge sharing. Moreover Flamholtz et al., (1985) hold clan control effective for organizations that deal with knowledge that is hard to codify, as such controls are known to create open organizational environments. As already mentioned dealing with tacit knowledge make organizations highly dependent on interactions, which is vital as the openness is known to facilitate knowledge sharing behaviors (Hoopes & Postrel, 1999; Argote & Ingram, 2000). As Sectra is highly dependent on managing knowledge that is hard to codify, it can be argued effective for them to use clan control. In the study at Sectra this is verified as their clan controls have contributed to a business environment characterized by openness and socialization where exchanges of expertise happen spontaneously due to their commitment to Sectra, without that anyone has to force it out of the employees. This also verifies the statement of Barker (1993) who means that clan controlled individuals often, due to their commitment to their organization, feel that the work itself contributes to keeping them motivated to share their knowledge internally.

Further Jashapara (2005) states that cooperative cultures are more favorable for knowledge sharing than competitive ones. This can also be verified by the findings at Sectra as it can be analyzed that they have managed to facilitate an environment characterized by team spirit, which has made the attitudes towards knowledge sharing natural. Further it can be understood that no internal competition exists between individuals at Sectra and that they rather feel strong commitments both to each other and to the organization. Jashapara (2005) means that such commitments build strong relationships and trust between employees which result in that knowledge sharing to a greater extent occurs more voluntarily. This is supported by the study at Sectra as it can be analyzed that the commitment that their employees feel to each other and the organization results in that they do not resist to help each other. The study thus further supports the statement of Constant, Kiesler and Sproull (1994) that clan controls are effective in the creation of organizational environments where individuals do not feel the need to get anything in return for their openness and knowledge sharing attitude.

Moreover, Merchant and Van der Stede (2011) state that organizations need to employ the right mix of individuals if management controls should be of value. Sectra has realized this as they put a lot of effort into their recruitment processes, involving many steps where the CEO has the final say. It can be understood from the empirical data that Sectra has managed to
employ people that fit together. Thus it can be stated, that the recruitment process at Sectra to a great extent contributes to the support of their clan controls, which supports the argument of Merchant and Van der Stede (2011).

Similar to the statement of Merchant and Van der Stede (2011) above, Barker (1993) along with Kirsch (1996) claims that organizations need to make sure that all of their activities go in line with and support an organization's control mechanisms to build strong organizational cultures. The authors argue that common examples of clan controls are different types of ceremonies and rituals as well as other processes of socialization such as meetings, the usage of teams and inter organizational transfers which together build strong organizational cultures. In the study at Sectra it can be analyzed that their clan control activities have contributed to maintaining the spirit that teams work best together when they collaborate and share experiences with each other. It can be understood that they work with clan control activities like kick-offs, ceremonies and other team building socialization gatherings for the purpose of knowledge sharing. This goes in line with the activities argued suitable for clan control provided by Barker (1993) and Kirsch (1996) stated above. The most evident sign of the successffulness of their activities is that all respondents identify themselves with the organization. In turn, it has also been analyzed that because of this employees feel committed to each other and do not resist to help others as it means working in the best interest of Sectra. This supports the statement of Floyd and Lane (2000) who mean that members within clan controlled organizations identify themselves with their organization, which in turn contributes to their commitment to common interests and a high level of goal congruence.

5.4 Incentives to support knowledge sharing

Further activities than the ones mentioned above, that Sectra works with to maintain their knowledge sharing business are individually based incentives (e.g. their senior program). It can be understood that these also contribute to the creation of commitment and the creation for shared understandings for Sectra's norms and values. It has also been analyzed that Sectra's incentives go in line with and support their control system, which further supports the statement of Barker (1993) and Kirsch (1996) discussed above. In addition it also supports the argument of Svensson and Wilhelmsson (1998) who state that for incentives to be successful they need to go in line with an organizations strategy and goals as well as norms and values. It can be analyzed that Sectra’s incentives contribute to knowledge sharing both directly and indirectly. On one hand, they influence indirectly as they, as mentioned above, help to build commitment and shared understandings for the norms and values that Sectra has. This as they, in line with Barker (1993), Kirsch (1996) and Svensson and Wilhelmsson (1998), discussed in the previous paragraph, go in line with and supports their clan control and thus motivate employees to share knowledge for altruistic reasons. On the other hand, they also influence
directly as they motivate individuals to reach targets by sharing knowledge for reasons of self-interest. As an example, it can be understood that the senior program at Sectra contributes to creating knowledge sharing behaviors as employees dream of being named senior. As one major criterion for becoming senior is to contribute to competence development, it has been proven that they therefore feel even more motivated to share their knowledge internally.

Also Wang and Noe (2010) state that knowledge sharing should be motivated by incentives as it has been proven that firms which have incorporated knowledge sharing into their incentives usually show better knowledge management results than others. This argument is supported by the study at Sectra as it can be analyzed that their incentives contribute to the creation of shared understandings for that knowledge sharing is vital for their knowledge management.

Further, Dalton and Lawrence (1971) argue that organizations also need to consider the negative side effects that incentives can have on employees. It can be understood that Sectra only uses individual incentives for the purpose of knowledge sharing. This contradicts the argument of Kohn (1993) who states that the usage of individually based rewards affects team spirit negatively, as individuals as a result tend to refuse to collaborate. Further it also contradicts with the argument of Turner and Makhija (2006) who state that group based incentives are especially suitable for clan controlled organizations as they build team spirit and foster goal congruence, which leads to efficient knowledge sharing. However, it can be analyzed that the lack of group based incentives at Sectra is not an issue. This as it can be analyzed from the empirical data that their individually based incentives also have effects on employee’s knowledge sharing on a group level. As an example to strengthen this argument, Sectra’s senior program contributes to the creation of organizational commitment, which means that the employees feel motivated to collaborate by sharing their knowledge even without group based incentives. This is analyzed from the empirical data as the respondents argue that; (1) as the employees are the ones nominating candidates for senior positions, it builds organizational commitment as they feel valuable for the organization, and (2) as seniors are considered as role models within Sectra, their knowledge sharing attitude rubs off to the rest of the employees.

The successfulness of their incentives is evident, as it can be analyzed by the empirical data that all respondents agree on that their incentives contribute to knowledge sharing. However, Merchant and Van der Stede (2011) state that incentives need to be informative, motivational and personnel related to be successful. As can be understood from the analysis above, the incentives at Sectra are motivational for the employees as well as personnel related which supports the statement of Merchant and Van der Stede (2011). However, it cannot be said that their incentives completely serve as information carriers. On one hand, the purpose of their incentives get through to their employees as they have managed to create an understanding for
what behavior they aim to enhance. On the other hand, they can be considered vague as it is unclear what it takes to receive that status. As an example the way of reaching the target of becoming senior is through showing the willingness to share expertise with others and contribute to the competence development of colleges. It can be argued as vague as all respondents agree on that becoming senior is reachable, however they cannot explain exactly what it takes to receive that status. What can be analyzed is rather that the motivation for knowledge sharing can be traced to the thrill of the challenge not knowing exactly when and how to receive them. It can be analyzed that a clearer action plan for how to reach incentives would contradict with Sectra’s clan control, as they aim to foster openness by creating environments where employees are allowed to come up with solutions, both during projects and for the purpose of incentives. This, as already mentioned has been proven efficient for their knowledge sharing.

Further, it can be understood that the implications on Sectra being project based affects the way that they need to handle their incentives. This as the course of action to their projects seldom is clear in beforehand, due to the complexity of their products and workflows. Incentives tied directly to process and outcome performances are thus not suitable as performances are hard to link to specific individuals and tasks. This as projects within Sectra share resources unsystematically and spontaneously on a voluntary basis and as their activities sometimes is hard to foresee. Thus it can be analyzed that these statements support what is argued by Dalton and Lawrence (1971), that organizations due to their uniqueness need to adapt incentives to fit their specific circumstances. Thus, it also supports the statement by Schuler and Jackson (1987) that incentives need to be adapted to different business models as they respond to the same incentives differently. However, it does not mean that no general recommendations can be formed for project based organizations. What is argued in this analysis can be adaptable to project based organizations highly characterized by research and development.

However, it should not be forgotten that even though Sectra’s incentives are argued to be efficient for the purpose of their knowledge sharing, they are not the only contributing factor to their successful knowledge sharing. This supports the argument by Constant, Kiesler and Sproull (1994) that incentives are not always the only answer to a functioning knowledge sharing. In other words it can be concluded, that it is their incentives combined with clan control which has built and supported them into becoming a knowledge sharing business.
5.5 A knowledge sharing business
From the discussion above it can be understood that the relationships between incentives, clan control and knowledge sharing in project based organizations develops our model of analysis. The developed model can be seen below.

![Diagram showing causal relationships between clan control, incentives and knowledge sharing in project based organizations.](image)

**Figure 5.** The developed analysis model. The causal relationships between clan control, incentives and knowledge sharing in project based organizations, processed by Rozic and Taxén (2015)

The developed model shows the new indicated causal relationships between incentives, clan control and knowledge sharing in project based organizations. The model also present the indicated effects that incentives and clan control can have on knowledge sharing behaviors in project based organizations. It shows the effect that clan control can have on knowledge sharing behaviors, the direct motivating effect that incentives can have on knowledge sharing behaviors and the indirect amplifying effect that incentives can have on clan control in project based organizations. These will be further explained in the conclusion chapter.
6. Conclusion

This chapter presents the conclusions of the study and discusses them with regards to the study purpose and research questions by explaining the developed model of this study. It also discusses the contributions of the study and suggestions to future research.

The purpose of this study was to map how incentives stimulate knowledge sharing behaviors in project based organizations, highly characterized by research and development. We have developed a model explaining the indicated causal relationships between incentives, clan control and knowledge sharing in the context of such organizations. The study thus focuses the effects that incentives can have on knowledge sharing behaviors. By addressing the research questions, concerning the stimulating effects of incentives and clan control on knowledge sharing behaviors as well as the moderating effect of incentives on clan control, in the targeted context it is now possible to conclude as follows:

Firstly, the study indicates that clan control contributes to the creation of open organizational environments characterized by shared values and beliefs as well as common interests among organizational members, which build strong relationships and trust between employees. As it in turn increases employees’ commitment to their organization and its members, it can create environments where knowledge sharing happens spontaneously. Secondly, the study indicates that individual incentives directly stimulate knowledge sharing in project based organizations. This as they can motivate employees to share their knowledge with colleagues for reasons of self-interest (e.g. status or money) to obtain the target of the incentives. Lastly, the study indicates that individual incentives also affect knowledge sharing indirectly as they motivate employees to share knowledge internally for altruistic reasons. This as it was shown that individual incentives, that go in line with clan control, moderate clan control by amplifying the effects of its management control by contributing to organizational commitment.

From this it can be derived that when project based organizations highly characterized by research and development aim to enhance knowledge sharing behaviors, it could be of value to consider a combination of clan control and individual incentives.

6.1 Contribution

6.1.1 Theoretical contribution
This study contributes to different areas within the research field of management literature. However, as no previous research have attempt to address incentives for the purpose of stimulating knowledge sharing behaviors in project based organizations, the main theoretical contribution of this study is that it combines the fields of incentives and knowledge sharing with the project based context. This by providing with a model explaining indicated effects that incentives can have on knowledge sharing behaviors in project based organizations.
Moreover, the study also have theoretical contributions to the research fields of knowledge management and incentive systems by developing existing theories with new perspectives within the research field of project based organizations. Firstly, the study develops existing research on the knowledge-based theory of the firm addressed by authors like Grant (1996), Kogut and Zander (1992) and Nonaka and Takeuchi (1995) who mean that tacit knowledge is the most important strategic resource of firms. This study contributes to that theory with a new perspective on how incentives can preserve an organization’s tacit knowledge by addressing it in a new context, the research field of project based organizations. Lastly, it also contributes the research field of incentive systems. It contributes to the existing perspective on how incentives can effect knowledge sharing behaviors provided by authors like Merchant and Van der Stede (2011), Hansen et al., (1999), Liebowitz (2003) and Dalton and Lawrence (1971), by expanding that view in the context of project based organizations. This by providing with a new perspective explaining the direct and indirect effects that individual incentives can have on knowledge sharing behaviors in project based organizations.

6.1.2 Empirical contribution
This study have empirical contributions that can be generalized to project based organizations highly characterized by research and development. The fact that the examined project based organization in this study was highly characterized by research and development, makes the findings inappropriate to generalize broader as it could be understood that the organizations high innovation pace affects their attitudes towards knowledge sharing. This by making them highly dependent on collaboration where knowledge sharing is a prerequisite for performance.

Continuing, the study also contributes empirically by providing with new insights to knowledge management on how individual incentives can stimulate knowledge sharing behaviors in project based organizations. In addition, it also contributes empirically by addressing that when such organizations aim to enhance knowledge sharing behaviors, it could be of value for them to consider a combination of clan control and incentives that go in line with clan control to get both direct and indirect effects on knowledge sharing.

6.2 Suggestions for future research
We consider our study important to provide with the foundation for future research, as it is the first study that attempts to map how incentives can be used in order to stimulate knowledge sharing behaviors in project based organizations. As this study was executed as a qualitative single-case study it can be argued that further studies addressing the topic would be of importance, to create a broader understanding for its nature. As the study indicates that it could be of value for project based organizations to consider incentives for the purpose of knowledge sharing, we argue that it would be of interest to perform a quantitative study including a great number of project based organizations to look for variations and similarities.
to our suggested model. It could also be considered as interesting to perform further case studies on other project based organizations to look for such variations and similarities.

Nonetheless, as the study only focuses the effects that incentives can have on knowledge sharing behaviors in project based organizations, it could be of value to also map what specific incentives that actually enhance the behaviors described in this study. In that way guidelines, comparable to the ones of for example Merchant and Van der Stede (2011), could be formed for how project based organizations should deal with incentives to stimulate their internal knowledge sharing.
7. Reference list

7.1 Articles and books


7.2 Other sources

8. Appendix

8.1 The interview guide

Interview guide

Background questions
1. What is your role at Sectra?
2. Can you describe a typical day for you at work?
3. We understand that Sectra operates in project-form, can you tell us about that?
4. In what way would you say that operating in projects affects Sectra?

Main questions
1. In what way do you share your knowledge with your colleagues?
2. How do you access your colleagues’ knowledge?
3. How important is knowledge sharing at Sectra?
4. How is knowledge integrated and shared at Sectra?
5. How do you experience the attitudes towards knowledge sharing within Sectra?
6. In what way does Sectra motivate knowledge sharing?
   - In what way does it affect your daily work?
7. How are issues related to knowledge sharing solved within Sectra?

Closing questions
1. Do you have any closing questions or something that you would like to add?
2. Are we allowed to contact you for further interviews and complementing questions?
3. Can you reckon someone else within Sectra who would be of value for our study?