



CHALMERS



Managerial Challenges with Knowledge Sharing

A case study at a consultancy firm within the construction industry

Master's thesis in Design and Construction Project Management

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Göteborg, Sweden, 2018

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ABSTRACT

During the recent years, organisation's interest in knowledge as a corporate asset has increased. More companies realize the importance of managing and invest in the knowledge within their organisation. The cornerstone of many knowledge management strategies is knowledge sharing, the process of sharing knowledge between individuals. This case study aims to analyse the knowledge sharing at a consultancy firm within the construction industry, *Company A*. The objective is to get an overview of the culture, processes and management in the firm, and to identify factors that facilitates, or hinder, knowledge sharing. This was possible through observations, interviews and discussions with the employees and management in *Company A*. The result showed that *Company A* has a culture of collaboration, trust and problem seeking, which are all factors that facilitate knowledge sharing. Moreover, the company has organised processes that could support employees to share their knowledge, but due to lack of time and priority, the benefits of the processes is not reached. Many factors show that most of the barriers with knowledge sharing within *Company A* can be associated with the organisational management. The key managerial challenges that was identified in this study was lack of time for knowledge sharing, lack of control over knowledge sharing processes, no strategy or incentives for knowledge sharing, and that the employees who possess most knowledge is often the most busy.

Key words: Knowledge sharing, Knowledge management, Knowledge intensive firm, Corporate culture, Organisational management

Ledningens Utmaningar med Kunskapsöverföring
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SAMMANFATTNING

Under de senare åren så har företags intresse för kunskap som en organisations-tillgång ökat. Fler och fler företag förstår vikten av att hantera och investera i kunskapen inom deras organisation. Det viktigaste elementet i många strategier för kunskapshantering är kunskapsöverföring mellan individer. Denna fallstudie syftar att analysera kunskapsöverföringen i ett konsultföretag inom bygg och fastighetssektorn, *Company A*. Målet är att få en överblick av strukturen, kulturen, processerna och ledningen och identifiera faktorer som gynnar, eller hindrar, kunskapsöverföring. Detta blev möjligt genom observationer, intervjuer och diskussioner med anställda och chefer på *Company A*. Resultatet visade att *Company A* har en företagskultur karakteriserad av samarbete, tillit och problemorientering, vilket är faktorer som gynnar kunskapsöverföring. Dessutom finns processer inom företaget som stödjer anställda att dela med sig av sin kunskap, men på grund av brist på tid och prioritet så når *Company A* inte fördelarna med processerna. Många faktorer visar på att de flesta utmaningar med kunskapsöverföring i *Company A* kan associeras med företagets ledning. De viktigaste utmaningarna som identifierades i denna studie var brist på tid för kunskapsöverföring, brist på kontroll över de processer som skulle kunna gynna kunskapsöverföring, samt att de anställda som besitter mest kunskap även är de på företaget som är mest upptagna.

Nyckelord: Kunskapsöverföring, Kunskapshantering, Kunskapsintensiva företag, Organisationsledning

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Preface

This study has been carried out at the Department of Architecture and Civil Engineering, Chalmers University of Technology, Sweden, from January 2018 to June 2018. It is the final work of our two-year long master program, and the last step before our degree in Civil and Building engineering. We have conducted this study in collaboration with a consultancy company within the construction company in Gothenburg, Sweden.

First and foremost, we would like to thank our supervisor at Chalmers, Martine Buser, for her engagement in this thesis, and also for her guidance, advises and support. Furthermore, we thank all employees at the consultancy company for welcoming us at your organisation and for taking time to help us with this thesis. We could not have done have done this without your help.

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Göteborg, June 2018

Malin Rybo Molin, Elin Dahlberg

1 Introduction

Knowledge is a corporate asset that during the recent years has become more and more important to manage and invest in. Traditional economies have only relied on tangible assets like land and capital as the primary competitive advantages, but a shift in the economy has also led to a shift in how we value intangible assets such as knowledge. Our current society has been described as a “knowledge society” (Bell et. Al., 2002), and the question about how organizations acquire and process knowledge has been a hot topic among managers during the recent years. (Nonaka, 1994). Today knowledge is treated as one of the most important factor for a company's success (Al-Alawi et. al., 2007). Knowledge is not data and not information, but it is related to both of them. A common definition of knowledge is;

"Knowledge is a fluid mix of framed experience, values, contextual information, expert insight, and grounded intuition that provides an environment and framework for evaluating and incorporating new experiences and information. It originates and is also socially constructed in the mind of the knowers. In organizations it often becomes embedded not only in documents or repositories, but also in organizational routines, practices and norms."

(Gamble and Blackwell, 2001)

This growing interest and use of knowledge in organizations requires effective knowledge management to be able to provide the right knowledge to the right people at the right time, in order to improve the organizational performance (Tilchin and Essawi, 2013). Knowledge Management is the systematic management of an organization's knowledge for the purpose of creating value meeting the organisation's requirements. It is the process for creating, organizing, sustaining, sharing, storing and reusing the knowledge within a company. Knowledge management can help the organization to learn from its mistakes, transfer from one source to another, and to promote innovation (Gamble and Blackwell, 2001). Knowledge sharing is considered an important factor for knowledge management, and also for social interaction in the organization (Razmeria, 2016).

One sector that is particularly dependent on knowledge is the consultancy industry. Their experience and expertise is their primary competitive advantage that they use to get customers. It is therefore important for these type of companies that they successfully implement knowledge management in their organization and anchor it with their strategy and goals (Newell et al., 2009).

1.1 Research Problem

Company A is a consultancy in Gothenburg, Sweden, and with offices also in Stockholm and Malmö. The organisation primarily does project management and building consultations for refurbishment and development of real estate, for both private and commercial customers. *Company A* can be hired for consulting in some of the stages of a project, but also in the whole process of a project; from conducting a preliminary investigation to hand over a finished product.

Company A is a growing organisation and has gone from being a small company to medium-sized, and has a desire to expand further within a couple of years. This growth means higher demands in terms of managing the knowledge and information

within the company, both since knowledge is an important competitive advantage, and also because it is more difficult to localize the internal sources of knowledge in companies with many employees. Insufficient managing of knowledge can result in knowledge disappearing when employees quit, or that the same faults is made over and over again and leads to unnecessary budget overruns.

Another reason to why knowledge sharing has gained importance for *Company A* is the inclusion of knowledge management in the recently released ISO 9001. ISO 9001 is standard for quality management used by organizations all over the world. For *Company A* to be awarded with a ISO certificate this year, they must overlook their strategies and routines regarding knowledge management.

A general assumption within *Company A* is that the current knowledge sharing between employees, projects and the organization has shortcomings. *Company A* is interested in analysing the current knowledge sharing within the company, and identify any potential barriers or challenges the company may face. *Company A* is also interesting in finding areas within knowledge sharing that need to be improved to support the company growing.

1.2 Aim and objective

The purpose with study is to analyse knowledge sharing at a consultancy firm within the construction industry, *Company A*. It aims investigating if and how knowledge is shared in the organisation, and how the current structure, culture, processes and management facilitates it.

The objective is to get an overview over how *Company A* currently deal with knowledge, and identify possible challenges or barriers that can be improved before achieving successful knowledge sharing.

1.3 Specifications of issue under investigation

More specific, this report aims to answer the following questions;

1. How does *Company A* deal with knowledge?
 - *How is knowledge shared across individuals, projects and construction phases?*
 - *What processes are used to facilitate knowledge sharing?*
 - *Is there a corporate culture that facilitates knowledge sharing?*
2. What are the challenges with achieving successful knowledge sharing within *Company A*?

1.4 Limitations

The scope of this master thesis is delimited to only examine one organization during five months. Only the Gothenburg department of the organisation will be examined, not Malmo or Stockholm, and will be referred to as *Company A* in the text. Information and documents provided by *Company A* are the primary source of information for this report. The focus will be internal within the organization, and

external sources of information such as clients to the company or contractors involved in the projects of *Company A* will not be considered.

Economy will not be taken into account when suggesting improvements. The main focus of the suggested improvements will be how *Company A* can improve their work with knowledge sharing, and not if it is profitable for the organisation or not.

At last, this thesis is limited to not consider the impact of IT and technology. This is due to the fact that *Company A* was changing their IT system at the time this study was conducted.

1.5 Ethics

When doing a case study at a company it is important to consider ethics as an important aspect. To do so, there are a number of principles that needs to be taken into account before starting a thesis at master level. These principles are: Principle one: *Minimizing the risk of harm*, Principle two: *Obtaining informed consent*, Principle three: *Protecting anonymity and confidentiality*, Principle four: *Avoiding deceptive practices*, Principle five: *Providing the right to withdraw* (Bryman and Bell, 2015).

All of this principles have been considered in this thesis. Both the company and the employees in this study are entirely anonymous. This is to protect the individuals, and also to avoid harming the company images. All employees have also been well informed of this study and the purpose with it, before the observations and interviews were started. During the interviews the employees were informed that their name was not going to be mentioned in the report, and that the recorded interviews only were handled by the authors. Furthermore, the interviewees also had the opportunity to withdraw from this study, or make changes in their statements after the interviews were conducted.

2 Methodology

In this chapter, the methodology used in this thesis will be presented. The main part of the findings in this thesis is gathered thru participant observations together with informal and formal interviews. This thesis has an abductive research approach together with a qualitative research method. Other methods have been critically evaluated, but the chosen one was considered to be the most suitable for this case.

2.1 Research approach

There are three different research approaches; deductive, inductive and abductive (Bryman & Bell, 2007). In the deductive approach, theory is used to formulate a hypothesis for the thesis that is either confirmed or rejected by observations or examinations. The inductive approach, does not include a hypothesis and observations and investigations are made before finding appropriate theory. Both the deductive and inductive approach is used to explain a meanwhile the abductive approach, which is used in this thesis, are meant to understand (Saunders, Lewis & Thornhill, 2012). The abductive approach allows the author to continuously combine theory and empirical data throughout the process.

In this thesis, empirical data was collected thru observations and interviews continuously throughout the process of the thesis. At the same time, different theory was studied and applied to the findings in order to understand *Company A* and to create a problem formulation.

2.2 Research method

There are two common research methods; qualitative and quantitative (Bryman and Bell, 2007). The quantitative research is a structured method that focus on collection and analysing measurable data. The qualitative approach, that is used in this study, is more exploratory than structured, and focus on the understanding and interpretation of people's opinions and motivations. By observations, interviews and discussions, the individual opinions within *Company A* is analysed and interpreted by the authors.

2.3 Research design

To conduct this thesis, the main methods have been observations and interviews. Since the aim has changed over time, the method has too. At the start, three of *Company A* projects were supposed to be basis for the case study. These three project were chosen to get an idea on the workflow, routines and processes of the company. It was also through these projects that the observations started and the interviewees were chosen. However, throughout the thesis it was concluded that the focus of this thesis should not be on these three projects, but more on an organisational level. Therefore, the chosen projects were only used as a method to gather information at the beginning of this thesis.

2.3.1 Observations

A large part of data was collected thru participant observations. According to Bryman and Bell (2007), this is the process of joining a group, observing and taking notes in order to get an understanding of the social and organizational structure. Furthermore, being at the right place at the right time play a crucial role in participant observations (Bryman and Bell, 2007). In accordance with this, time was spent at *Company A*

around 4-5 days a week for 3 months. Everything going on at the office were observed, including conversations between employees, lunches and breaks. Also, 3 construction meetings were observed for each of the three projects chosen at the beginning, 1 staff meeting with all of the workforce at the Gothenburg office, and 1 knowledge sharing meeting with the whole company group. Further, documents and material provided by *Company A* were studied during the period of the observations.

The authors role was participant-as-observer, meaning every employee working at *Company A* was aware of the intentions with the research. The authors were aware of the risks of “going native”, which is a term used by Bryman and Bell (2007) to explain the risk of getting too wrapped into the company and furthermore affect the collection and analysis of data. This was considered and evaluated throughout the research in order to minimize the risk.

2.3.2 Interviews

During the research period, several interviews with different people working at *Company A* were conducted. Two different approaches were used for the interviews, *semi-structured interviews* and *informal interviews*. In the semi-structured interviews questions were prepared, but not sent to the interviewees on forehand. Moreover, the interviews were recorded, and then transcribed into text. The topic of the interview and the questions varied depending on the interviewee’s role at the company what experience the person had. When talking to employees, the questions of the interviews focused on project routines, and culture. When talking to management at *Company A*, the questions were more focused on the organization, processes and strategies.

In the informal interviews no questions were prepared on forehand, and the interviews were more of conversations or discussions rather than asking a list of questions. Many of the informal interviews took place over a lunch break, and with this approach the impression was that people were more relaxed and positive to share information and answering questions. This interviews were not always recorded, but notes were taken during the conversation.

After the interviews were conducted, the answers were analysed and structured. The result from the interviews were divided to either answers from employees, or management, to be able to compare these later. To get a broad picture as possible of the organization, many interviewees with different roles and experience were chosen. Except from project managers involved in the projects chosen in the beginning, other people were interviewed such as the president for the three offices, CEO for the office in Gothenburg, the quality and environmental coordinator, team leaders, IT manager and new employees. Altogether, 7 semi-structured interviews took place, which two were with management and five with employees. The informal interviews were not counted, but almost every employee at *Company A* were interviewed with this approach.

2.3.3 Liturature Review

After the observations and interviews were conducted, a literature review was made. To collect relevant literature that could be applied to this case study, the most common search words were: knowledge management, knowledge sharing, knowledge workers, project based organisation, organisational culture, organisational

management. The most used search engines were Google Scholar and the library of Chalmers. The literature was critically reviewed before being used in this thesis.

2.4 Analysis of Result

All data collected through observations and interviews were carefully analysed before a conclusion was made. To be able to analyse the data from the interviews, the interviews were recorded and then transcribed to paper. Then the answers were divided to “employees” or “management”, and compared to each other to be able to find differences between them both. The result from the observations was analysed through categorizing and mapping of the collected data, see appendix. The categories used were *strategies*, *organisational culture*, *organisational management*, and *activities*. Everything observed were put in on of these categories, and then analysed.

3 Theoretical framework

In this chapter the chosen theory is presented to create a theoretical framework that can be applied to our empirical findings in order to come to some conclusions. The framework is structured as following: Theory to explain the concept of project-based organisations and its connection to the construction industry. Further, theory about knowledge-intensive firms is presented with its specific challenges and opportunities for knowledge sharing followed by the impact that corporate culture has on knowledge sharing. Some background of Knowledge Management will be presented followed by different factors that facilitate knowledge sharing. Last, two lists of barriers for knowledge sharing will be presented from an individual and organisational perspective. These barriers will make the necessary frame to develop our analysis and conclusions regarding on what areas knowledge sharing needs to be improved.

3.1 Project-Based Organisation

A project-based organisation (PBO) conducts its activities as temporary or long term projects instead of using a functional approach (Thiry, 2007). PBO:s are a common organisational structure within the construction industry since many different actors work together for a certain period of time until completion. Earlier research has argued that PBO:s is an appropriate way to organise to facilitate knowledge sharing and innovation but this is not always the case, according to Bresnen, Goussevskaia & Swan (2004) who highlight problems regarding sharing and diffusing knowledge across projects. There is a contradiction between organizing to meet project task objectives and having long term goals in knowledge accumulation, since the nature of projects can create barriers for innovation and knowledge sharing. Furthermore, organisation with this approach often have a decentralised nature and are heavily time constrained within their projects which creates challenges in embedding and diffusing new knowledge and learning.

Autonomous project managers and decentralized team work is the essence of a project-based organisation (Bresnen, Goussevskaia & Swan, 2004). This creates difficulties with the phasing of activity in the construction industry, since decentralization makes it less likely that knowledge flows between different phases and/or projects. Management faces challenges in capturing and diffusing knowledge gained from one project across to others since the knowledge is project specific and also dependent upon the working relationships within the project team.

In project-based organisations, it is common that the time spent working in a project monitored and required to be documented in accordance to the client or organisation's satisfaction (Newell et al., 2009). This billable time and monitoring could hinder knowledge sharing since employees' experiences time pressure and therefore knowledge sharing is not prioritized. Therefore, organisations that is closely monitored and has controlled billable hours has little possibility for sharing or acquiring knowledge according to Newell et al. (2009).

3.1.1 Knowledge-intensive Firms

In the latter part of the twentieth century many knowledge-intensive firms developed. They can be defined as organisations that create value through the usage of advanced knowledge (Newell et al., 2009). These firms consist mainly of knowledge workers and are often associated with service-based organisations that provide solutions for clients, for example management consultancies. According to Newell et al. (2009), a knowledge worker is someone with specific expertise used to solve tasks that require to adapt existing knowledge in accordance to different projects or even to create to knowledge if needed. Knowledge workers compete on their abilities of solving complex problems for clients and knowledge is the basis of this competition. Therefore, it is vital that knowledge-intensive firms have a workforce with ambitions to share and create knowledge to sustain a competitive advantage. In order to achieve this, knowledge-intensive firms tend to organise themselves in ways that attracts knowledge workers and promotes innovation (Newell et al., 2009).

The nature of knowledge worker's method of performing their work task are characterized by creativity and problem-solving (Newell et al., 2009). They themselves tend to be the most appropriate to decide how to structure work tasks and in order to do so they demand autonomy. According to Newell et al. (2009), a knowledge-intensive firm's mean of production is knowledge and consequently owned by the knowledge workers and therefore management is in no position of denying them autonomy. Also, it is not certain that management shares the same levels of expertise as the knowledge workers which makes it difficult for them to control or manage the processes used by knowledge workers. Hence, a more suitable role for management may be to provide necessary context in order to facilitate knowledge work according to Newell et al. (2009).

Knowledge workers are a relatively rare resource since their specific skills and expertise are not broadly available, even in this knowledge based economy of today (Newell et al., 2009). Therefore, knowledge workers tend to have many different choices when selecting companies to work at. Knowledge-intensive firms, therefore need to find different approaches to attract these workers. Furthermore, firms need to maintain their knowledge workers within the firm since recruitment of new employees is costly. Also, knowledge workers essentially own the mean of production at knowledge-intensive firms and therefore a top priority in management strategies should be to sustain an expert workforce according to Newell et al. (2009).

3.2 Knowledge Sharing

One challenge for knowledge intensive firms are when employees who have a lot of knowledge leave the organisation. To prevent companies from losing a big part of their total knowledge, the process of knowledge sharing is important. Knowledge sharing is the process where an individual guide someone else through their thinking while being aware of the knowledge purpose, use, needs or gaps of the person receiving the knowledge (McDermotte, 1999). How successful an organisations knowledge management initiatives depends on their level of knowledge sharing and how the organization use and exploit the knowledge within the organization (Wang and Noe, 2010). Knowledge sharing activities can convert the individual knowledge into organisational knowledge, and also decrease the sensitivity for when employees leave the company. This process becomes more and more important since the most

skilled and knowledgeable employees often are highly mobile and aware of their value (Riege, 2005).

3.2.1 Enablers for Knowledge Sharing

Even if all organisations are different from each other and must be treated as individual cases, there are some general enablers that could facilitate knowledge sharing (Riege, 2005). In the following chapters, descriptions of enablers that are considered to be of importance for this thesis are presented.

3.2.1.1 Corporate Culture

One important enabler is organisational culture. It has been argued that for an organisational culture to facilitate knowledge sharing it should be characterised by collaboration, cooperation, trust and innovation (Goh, 2002; Razmera, 2016; Carlin and Womack, 1999). An environment of collaboration and cooperation, and people who are willing to share knowledge and experience is significantly important for successful knowledge sharing (Goh, 2002). To create such an environment, trust between employees is a fundamental variable, since most people are unlikely to share knowledge with someone they do not trust (Riege, 2002). Friendly relationships among employees with trust can motivate them to share their knowledge and experience. Beyond this, Goh (2002) also argues that there is a need for a culture of problem seeking and problem solving to encourage employees to work together and improve collaboration. Having that said, it is also argued that it is significantly important not to try to fit the corporate culture into the company's knowledge sharing goals, but instead the knowledge sharing goals should be adapted and fitted into the already existing culture (McDermotte and O'Dell, 2001).

Management needs to manage and create a culture that employees want to identify themselves with. According to Newell et al. (2009), workers that identify themselves with the organisation are believed to adopt the organisation's values, beliefs and norms and perform with the interest of the organisation in mind. When the organisation's values become shared values within the workforce, both performance and productivity could be improved. However, it cannot be assumed that knowledge workers, especially when a workforce is highly skilled and educated, would subsume their personal values for those of the firm (Newell et al. 2009). Therefore, it is questionable that management is in a position to create values across the workforce and possibly need to accept that the workforce will have a variety of beliefs. It is suggested by Newell et al. (2009), that culture is better viewed as something the organisation *is* instead of something they *have*.

3.2.1.2 Infrastructure

Another notable factor for successful knowledge sharing is to have the right infrastructure that supports it (Goh, 2002). Communication is a fundamental enabler for such infrastructure, both in terms of how good people are at communicating verbally and written, and how horizontal the communication is (Goh, 2002; Riege, 2005). Flat organisations with collaboration in cross-functional teams, and low hierarchical levels, is one approach to horizontal communication. Another factor that supports horizontal communication is technology such as IT and software tools, which can facilitate the communication and transfer of knowledge within organisations (Goh, 2002).

3.2.1.3 Motivation and Incentives

Motivation has also been argued to be an important enabler for knowledge sharing. If people don't feel motivated, they are less likely to share their knowledge to others. There are two types of motivation; intrinsic motivation for employees who are driven by an interest or enjoyment in helping others, and extrinsic motivation in cases where there is an economic reward for knowledge sharing (Razmeria, 2016). It is argued that incentives and economic reward can be a successful method of optimising knowledge sharing in an organisation (Bartol and Srivastava, 2002; Riege, 2005; Razmeria, 2016). Individual audits where the employee's performance is evaluated and rewarded from a knowledge sharing perspective, in terms of how well they capture, share and use others knowledge, can be one way of enhance people's motivation (Riege, 2005). Another way that could encourage collaboration and teamwork is to distribute team-based rewards. This is argued to increase the individual's knowledge sharing behavior as an instrument in achieving the team-based reward (Bartol and Srivastava, 2002).

3.2.1.4 Management and Business Strategy

Management and leaders has an important role in establishing some key conditions that facilitates knowledge sharing (Goh, 2002). They are responsible for formulating organisational strategies and tools, which are strongly related to knowledge sharing. Firstly, strategies and goals for knowledge sharing within the organisation must be decided. Secondly, the organisation must make sure that the strategies and goals for knowledge sharing are well integrated into the organisations business strategies and goals. (Riege, 2005). Management also has influence over the culture, infrastructure and other supportive conditions needed for knowledge sharing within the organisation (Goh, 2002). Most importantly, they are responsible for communicating all the benefits with knowledge sharing and for making sure that everyone has enough time for it (Riege, 2005).

3.2.2 Barriers for Knowledge Sharing

Studies in knowledge sharing barriers have previously mainly focused on such thing as corporate and national culture, but Riege (2005) did an extensive study on knowledge sharing where a wide range of barriers were identified and reviewed. The barriers were categorized as individual, organisational and technological. The main result from this study is presented below in a list, but since only the individual and organisational barriers is relevant to this study, these are the one presented. Further, Riege (2005) states that even though the barriers are discussed separately, it is most likely that combinations of the different barriers will be found in organisations.

3.2.2.1 Potential Individual Barriers.

According to Riege (2005), the individual barriers are related to communication, social networks, relationships and diversity among the employees. Lack of communication skills among individuals could also affect their ability to share knowledge. How good people are at communicate can depend on their personal type, their social skills and their national culture, for instance (Riege, 2005). Also lack of trust is an important and common knowledge sharing barrier. If people don't trust each other, they are not likely going to share their knowledge. Further Riege (2005) argues that it is in the informal networks that people tend to trust each other more than in formal. Another potential barrier discussed in the study is lack of time. This can be an issue for management who don't have the time to implement a strategy for knowledge sharing, or activities that would facilitate it, even if they are aware of the

benefits. Likewise, lack of time could also be an issue for individuals who simply has too much to do to have time for sharing their knowledge to other. Since knowledge transfer takes time and therefore also is a cost factor, managers don't always encourage their employees to take time for knowledge sharing or allow them enough space for that kind of activities (Riege, 2005).

Below follows a list with potential individual barriers of knowledge sharing.

1. General lack of time to share knowledge, and time to identify colleagues in need of specific knowledge.
2. Apprehension of fear that sharing may reduce or jeopardise people's job security.
3. Low awareness and realisation of the value and benefit of possessed knowledge to others.
4. Dominance in sharing explicit over tacit knowledge such as know-how and experience that requires hands-on learning, observation, dialogue and interactive problem solving.
5. Use of strong hierarchy, position-based status, and formal power ('pull rank').
6. Insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes that would enhance individual and organisational learning effects
7. Differences in experience levels. [1]
8. Lack of contact time and interaction between knowledge sources and recipients.
9. Poor verbal/written communication and interpersonal skills.
10. Age differences.
11. Gender differences.
12. Lack of social network. [1]
13. Differences in education levels.
14. Taking ownership of intellectual property due to fear of not receiving just recognition and accreditation from managers and colleagues.
15. Lack of trust in people because they may misuse knowledge or take unjust credit for it.

3.2.2.2 Potential Organisational Barriers

The organisational barriers are related to the corporate environment such as culture, values and strategies. A significantly important barrier is when organisations don't success in integrating and tie their knowledge sharing strategy with their business strategies and goals. This also applies on corporate culture. Instead of adopting the corporate culture to a knowledge sharing strategy, a more successful way is to adapt the knowledge sharing strategy to the corporate culture and values (Riege, 2005). Organisational structure can also be a knowledge sharing barrier. If the organisation is structured in a hierarchical, multi-layered way, knowledge sharing is less likely to occur, compared to in flat organisations (Riege, 2005; O'Dell and Grayson, 1998).

Moreover, the layout of office and company floor could also be a significant barrier if they are arranged wrong (Riege, 2005). If the layout is arranged according to hierarchy and position in the organisation rather than from a knowledge sharing perspective, the basic communication becomes more difficult, and it is also harder to

create trust-based relationships, which both are important drivers behind knowledge sharing.

Below follows a list with potential organisational barriers of knowledge sharing.

1. Integration of knowledge management strategy and sharing initiatives into the company's goals and strategic approach is missing or unclear.
2. Lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices.
3. Shortage of formal and informal spaces to share, reflect and generate (new) knowledge.
4. Lack of a transparent rewards and recognition systems that would motivate people to share more of their knowledge.
5. Existing corporate culture does not provide sufficient support for sharing practices.
6. Knowledge retention of highly skilled and experienced staff is not a high priority.
7. Shortage of appropriate infrastructure supporting sharing practices.
8. Deficiency of company resources that would provide adequate sharing opportunities.
9. External competitiveness within business units or functional areas and between subsidiaries can be high (e.g. not invented here syndrome).
10. Communication and knowledge flows are restricted into certain directions (e.g. top-down).
11. Physical work environment and layout of work areas restrict effective sharing practices.
12. Internal competitiveness within business units, functional areas, and subsidiaries can be high.
13. Hierarchical organisation structure inhibits or slows down most sharing practices.
14. Size of business units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.

Another barrier to knowledge sharing is that employees in knowledge-intensive firms often have to be able to work remotely from the firm, possibly located at the client firm or in the construction industry, at site (Newell et al., 2009). This creates different management issue, both that clients may be prone to offer permanent employment to knowledge worker that perform well and that it hinders teamwork at the knowledge-intensive firm. When a client offers permanent employment to knowledge workers this puts the client firm in direct competition with the organisation that offer the knowledge worker. Therefore, management must develop retention strategies for direct competition but also for client firms. However, teamwork is a common approach in knowledge-intensive firms and the complexity of knowledge working makes it difficult to work remotely. In order to practicably be able to share and create knowledge it most often requires face to face interaction and therefore management need to develop strategies and mechanisms that facilitates this (Newell et al., 2009).

3.3 Organisational growth

Many knowledge-intensive firms have a tendency to grow and diversify over time, which is not always a strategic smart decision (Newell et al., 2009). When doing so, it often requires an increase in formalization, more layers of hierarchy and support staff. This shift in organisational structure can create difficulties if innovation and the ability to solve complex problems for clients, is the basis on which the firms competes. According to Newell et al. (2009), a solution to this problem could be to create autonomous business units, after the organisation has reached a certain size, and should be led by those who understands the importance of levels of formalization and decentralized decision-making for knowledge work. With this attempt firms could continue to operate as adhocracies-stimulating innovation but without the growth in the organisational structure.

To survive in the long run, an organisation need to have a competitive profitability and possibilities for managers to measure it (Newell et al., 2009). In order for managers to develop and increase profitability they need to measure the level of efficiency and an informal approach of organisational structure makes it difficult. Since knowledge workers generally resents having their work directly monitored and controlled according to Newell et al. (2009), management need to develop ways to organize work with taking both efficiency and autonomy under consideration.

3.4 Summary

Project based organisations is a standardized way of organising and is common in the construction industry. This organisational structure has many times been known to facilitate knowledge sharing but Bresnen, Goussevskaia & Swan (2004) argue that this is not always the case, since knowledge rarely travel across projects. However, many companies that are project-based organisations can also be defined as knowledge-intensive firms, since the organisations mean of production is the knowledge embedded in employees (Newell et al., 2009). Employees in knowledge-intensive firms, also called knowledge workers, can therefore demand autonomy in their work, which can create managerial challenges.

There are both enablers and barriers for achieving a successful knowledge sharing in an organisation. One important enabler that facilitates knowledge sharing is the corporate culture of an organisation (Riege, 2005). Newell et al. (2009) argues that in this type culture it is important that management can communicate the organisation's core values to the employees. If employees identify themselves with the values of the organisation they could perform in with the interest of the organisation in mind. Other enablers that is mentioned as important are *infrastructure, motivation and incentives* and also *management and business strategy*. Both Newell et al. (2009), Riege (2005) and Bartol & Srivastava (2002) emphasis the importance of incentives for employees to act and perform in accordance with the organisation's values.

Riege (2005) presents a list for both individual and organisational barriers for knowledge sharing. These two lists is an important part of the theoretical framework for this thesis and provides t an analysis of the present situation on knowledge sharing at *Company A*.

Newell et al. (2009) argues about the challenges in organisational growth in

knowledge-intensive firms since it often requires more processes and routines to control employee's quality of work. Management faces challenges in needing to measure the profitability of the organisation but at the same time keep a culture that facilitates knowledge sharing among employees.

4 Empirical findings

In this chapter, the empirical findings from this study will be presented. Firstly, an introduction to *Company A* will be given, including their background and organisational structure. Secondly, there is presentation over what *Company A* do and how work is managed and proceeded in the different phases of construction projects. Finally, the organizational strategy, culture, management and processes will be described more detailed in chapter 4.4-4-7. The information behind this chapter is taken from observations, informal and formal interviews and documents provided by the company. To maintain anonymity in this research, all the interviewed persons at *Company A* is mentioned as either “employees” when referring to employees no matter of profession, or “management” when referring to the persons in leading position.

4.1 Company A

Company A started out as a small family business specialized in window replacements with one office in Gothenburg. Today *Company A* has grown and is now a medium sized consultancy company with 50 employees and offices in also Stockholm and Malmö. Gothenburg is still the main office, where they are around 35 employees in 2018. *Company A* primarily do project management and building consultations for refurbishment and development of real estate, for both private and commercial customers. As the company grown, they hired a consultant business specialized in marketing which helped create their work ethics and value but also how to market themselves in the industry. Currently, the workforce consists of employees of different gender, age, background and experience. *Company A* is still a growing company, and have a vision to double the amount of employees by 2023.

4.1.1 Organisational Structure

The organisational structure of *Company A* is illustrated in Figure 1.

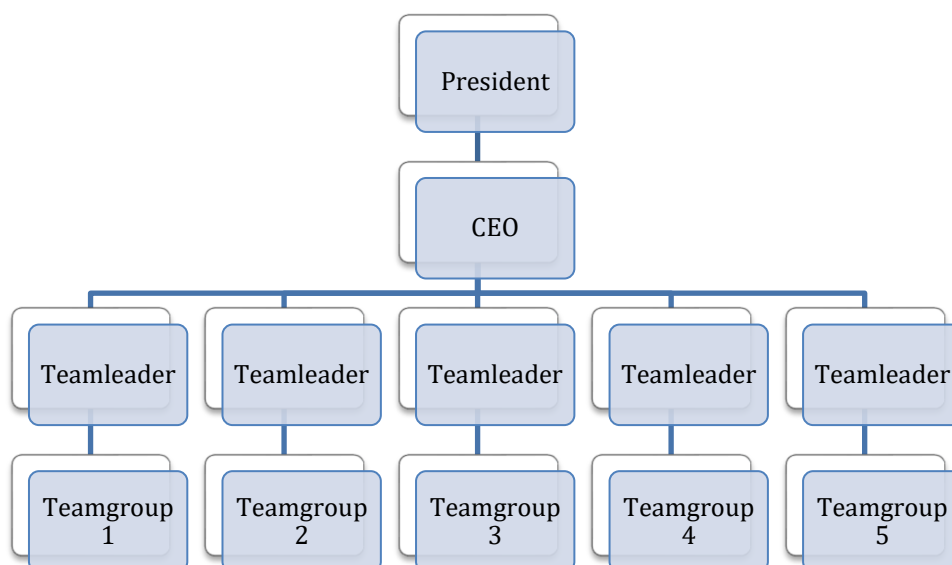


Figure 1: Organisational structure of Company A

Today the management at *Company A* consist of one president for the company group who is stationed in Gothenburg, and three CEO:s responsible for each office. As shown in figure 1, the teams are a vital part of the organisational structure. These teams consist of a team leader, and around 5-7 employees. The team leaders are chosen by the CEO and is normally an experienced employee who has been working at *Company A* for a longer time, but anyone at the company can show interest in becoming a team leader. The team leaders have a responsibility for their team members in matters of education and development. Each team leader has one meeting every year with their members regarding their future path at the company. At this meeting employees have the chance to express desires about their future career path and how they best can achieve this. The team leaders also have a meeting with the company's' resource planner once a week to look over the available resources and the employee's timesheets. During this meeting, the team leaders has the opportunity to see how all employees are using their time and assign more or less work if needed.

The teams do not necessary work together in projects and the function is used for development and education. The team leaders spend an average of 10% on this role so they are still involved completely in other projects.

4.2 What does *Company A* do?

Company A primary do refurbishments, drain replacements and window replacements in existing properties, but during the last years they have also started consulting in construction of new buildings. *Company A* are often hired as agent for the client, and their most common client is private housing cooperatives, or tenant compounds. *Company A* can be hired in all of phases of a construction project, in one of them, or in the whole chain. Sometimes a client just wants a preliminary investigation of their building but then decides not to take action, and sometimes they need consulting also in the following phases. It is rare, however, that *Company A* does only construction management without have been a part of the design phase.

Normally there is one or two consults at *Company A* working together in a project. In cases were there are two consults working together, normally one of them is an assistant manager and less experienced. The consults responsible for the first phase of a construction project is not necessary responsible for the next phase, but has to hand over the project to another consult at *Company A*. Which consult that is assigned to which project is decided mainly by the team leaders based on the consults time sheet, but there is also a possibility for each consult to express interest in specific projects in order to educate themselves in new knowledge areas.

How *Company A* works with preliminary investigation, design management and construction management will be presented more accurately in chapter 4.2.1-4.2.3. The information presented comes from interviews, observations and documents.

4.2.1 Preliminary Investigation

The first stage of the construction process that *Company A* can be hired for consulting is the preliminary investigation. Clients can use this service if they want to have a technical status report of their building, or a specific part of their building. The preliminary investigation can involve for example sampling of moisture or noise, calculation of project cost and schedule, possible development of the property, energy savings and environmental aspects, and development of the appearance of the

property. This can be requested by the clients if they are insecure about what needs to be done, or if they know that they have a problem and want to know how to proceed, or if they have decided to fix one part of the building and wants to make sure that nothing else needs to be fixed at the same time.

In cases where the preliminary investigation most likely is going to lead to a design phase and a construction phase, it is preferable to have the same consult for all of the construction phases. This is not always possible since it can take a long time between the start of the preliminary investigation and project start, therefore it is common that a new consult takes over the project after the preliminary investigation is completed.

Since all buildings are different and have varying needs, it is hard to have routines for this phase. Some guidelines exist on how to write the status report, but other than that it is up to the client and consult on how to execute the work. One of the employees at *Company A* says that the biggest challenge with this phase is that when working with existing and often old buildings, you never know what you will find when you start the demolition. Sometimes drawings of the building are missing or have not been updated since the last refurbishment. Another challenge is that if something is missed in this early stage, it can be expensive to fix, if it is discovered in later phases.

4.2.2 Design Management

The second phase is the design phase. Here the client can get help with building permits and to fulfil all the required building permit documents such as drawings, technical descriptions and administrative regulations. *Company A* also help clients with invitations to tender and all the necessary documents related to that, and also to fulfil as-built documents. In addition to obtaining all necessary documents required in the design phase, *Company A* can also be hired for management in the design phase. The design manager makes sure that the design phase goes according to plan and that right competence end up at the right place. It can be controlling that the schedule and project cost fits the needs of the client, ensure a good work environment and coordinate CAD files and drawing so that the construction phase is as well prepared as possible.

The routines for this phase is to follow the project manual and checklist (more described in chapter 4.7.2). In the checklist there is a task for getting all documents reviewed by another person and also for reviewing all documents and drawings together to make sure there is no collision. The person reviewing the documents could be anyone available person at the company outside the project. The purpose of this tasks is to avoid sending incorrect drawings and information to the contractor. In one of the reference project in this research, there were mistakes in the design phase which were not discovered until the construction has already started. This lead to extra cost and contract variations. The interviewed project manager in that specific project thinks that if the checklist was followed correctly during the design phase, that sort of mistakes should not happen.

Many of the respondent employees says that the biggest challenge of the design phase is the handover between the design manager and the construction manager. Currently there are no clear routines for this, except for a short section in the project manual checklist.

4.2.3 Construction Management

In the construction phase, *Company A* leads the practical work at the construction site. This includes being in charge of regular construction meetings and economy meetings, and having contact with suppliers, contractors and subcontractors. It also includes managing project cost and schedule and provide the client with regular forecasts and make sure the project is delivered as promised to the client. At the construction meetings, normally representatives from the client, the construction manager, the contractor and subcontractors meet and discuss the progress of the project, disturbances and other questions related to the project. The construction manager is responsible for convening, leading and recording these meetings and make sure the questions end up at the right person's desk. The economy meetings are normally just between the construction manager and the client. Also here the construction manager's job is to convene, lead and note the meetings, but also for compiling the list of contract variations and update the budget forecast.

According to one of the employees, the biggest challenge in the construction management is the communication and the knowledge flows. To organize the information and make sure that right info ends up at the right person can be hard, and especially when the consultancy also is responsible for the communication with the tenants and residents. It can also be a challenge to preserve the interest of the clients and taking their requirements into account, when at the same time having a dialogue with the contractor and give them the best conditions to do their job. Another employee thinks the biggest challenges is to answer questions on old decision that the previous project managers were involved in, and to make the contractors communicate and inform before performing jobs that becomes contract variations and extra costs for the client. Many employees also agree that a big challenge is when a construction manager has to handover the project to another manager, for example in cases of sickness, pregnancy, quitting their job or if the manager has too much to do. There is neither here a clear routine, witch make the success of the hand over dependent on the available time.

4.3 Organizational Strategy

The organization is a value driven organization which means that the organisation, its employees and the work performed by the organization is characterised and defined by its values. The four main values of *Company A* are *openness*, *creating values*, *care in all situations* and *commitment*. It is important for the management of *Company A* that every employees act, and knows how to act, according to these values in every situation internal, external and towards clients and suppliers. It is understood that the values are an important part of *Company A* and that all employees are well familiar with them and work after them. By observing construction meetings with clients, it is also clear that the organisation represents the values outside the organisation and that it creates trust between project managers and clients. Another strategy that also strongly characterises *Company A* is that physical activity during work hours is a demand from management, since they believe it will improve their employee's creativity and focus, according to research. Moreover, the organization has an oxygen goal for all employees, which implies that once a year a measurement is made over how well each employee can consume oxygen, and the average measure is compared to the target.

Regarding quality strategy, *Company A* uses surveys sent out to each client after every finished project. The purpose with the surveys is to examine the client's perception of how well *Company A* performed their assignment and lived up to the client's requirements and expectations. The surveys are compiled regular and if the result would indicate areas that needs to be improved, the person responsible for quality and environment together with the management takes action. This is a rather new strategy for the organization, since they previously only sent out surveys once a year to every client they had during the year. The reason behind the reform is that when the clients only got the surveys once a year, it could occur that the clients have poor memory, if it was a long time since the project was completed. Furthermore, one of the managers says that the response rate is usually high, and so far they have not found any specific weak points with help of the surveys.

A specific strategy for knowledge management can not be identified, neither through observations or interviews with management. It is clear though that the management are aware of the lack of strategy and have the desire to improve this area.

4.4 Organizational Culture

Every respondent in the interviews agree that *Company A* has a culture strongly characterized by helpfulness, collaboration and a willingness to share knowledge and experience. One of the employees says that he has never before worked in an organization with such strong culture. This is also something that has been seen through observations. It is seen that the employees often ask colleagues for advice and help, and most of them is willing to take time to answer and help. One reason behind this collaborative and helpful environment is that people does not seem to think of their knowledge and experience as a competitive benefit and therefore does not need to protect their knowledge from others.

Another supportive reason is that *Company A* has something called an activity-based workplace, which means they do not have assigned office spaces. All employees have a laptop, tablet and a phone which provide them with the possibility to sit and work anywhere at the office. An activity-based workplace facilitates knowledge sharing and collaboration since people sits between different colleagues everyday. There are also no close doors to management, since the president and the CEO also sits within the workplace.

The employees are given the possibility to adapt their work after their private life, and take advantage of a mobile workplace, which offers the employees a lot of flexibility regarding on where, when and how they want to work. However, since they are assigned to different project which include a lot of meetings and site visits, they are expected to attend at those. It is also common that the employees are at the office every Monday and Friday, and choose the rest of the days to work at other places if they prefer. One of *Company A*'s strategies is that the employees should not work more than 40 hours a week, and should easily be able to solve their family puzzle at the same time as they do their work. But despite this strategy, many employees find it hard to judge the value of 40 "consultant hours", and it is common to work overtime.

One issue with this mobile workplace, according to some of the employees, is the knowledge sharing, since it is sometimes difficult to know where people are the moment when they for example work at home. A consequence of this can be that

answers to questions to specific persons becomes delayed. Another issue with a mobile workplace and that people can work wherever they want, is that some employees find it hard to separate between work time and private time and has a feeling of always being available and online.

Finally, it is clear that *Company A* has a work environment strongly defined by employees liking their job and talks positive about their company. Spending time at the company makes it clear that there is a good atmosphere among at the office, people seems to like each other and has developed a certain kind of company culture. The environment is perceived as including, and new employees consider it to be easy to become a part of the community. *Company A* offers breakfast for all employees every morning, and there is also a common coffee break at the afternoon, where everyone at the office sit together and talk. However, like many consultancy, *Company A* suffer from time pressured employees. This is observed early in this study, and many respondents say they experience or have experienced time pressure when they have worked at *Company A*. The phrase “we don’t have time for that” is mentioned several times during this research. The employees agree that there is much to do and that it is hard to stay at 40 hours per week. It is also seen that some employees suffer from performance anxiety. The reasons behind this is, according to some of the employees, is the pressure of having to charge 100% of their time to the clients. New hired employees said that in the beginning, before they were placed in projects, they felt stressed for not being able to charge their hours to clients, but also the experienced employees agree that it exist a charging-pressure. Consequently, people work overtime or work for free to avoid having too much indirect time.

4.5 Organisational Management

Company A has its headquarters in Gothenburg, where both the President for the company and the CEO for the Gothenburg office, are stationed. They both have operational responsibilities and are approximately working 40% in different projects, and plan to continue like that. The management express that their managerial duties take up enough time to be a fulltime job but at this stage the organisation would suffer economically if they resigned from their projects. Since they are experienced project managers, with many successful projects in their resume, many clients require them specifically. Consequently, the management think some clients would end their collaboration with *Company A* if they would resign as project managers and only work strategically. Furthermore, the management mean it is important to be up to date in order to run the organisation, and this is done by being involved in projects. It keeps the management informed about the potential challenges or opportunities in the industry. Lastly, the management say that they love their jobs and would like to continue to work in projects as long as possible.

As mentioned in chapter 4.4, lack of time is expressed by most of the employees. Management claims that the employees at *Company A* should not work more or less than 40 hours per week. They emphasize the importance of this in order for people to stay healthy. However, even though this is a goal, some employees work much more than that without management stopping them.

Since the management at *Company A* still are working as project managers, they spend a lot of time outside the office and does not always have the time to help other employees with problems. However, the management explain that this is not a

problem and that the culture of the company allows everyone to have an open communication with one another, and therefore they always manage to find the time to help their colleagues. *Company A* is a flat organisation and management believes this facilitates the employees to work more efficiently. The management want to keep the organisation this way and don't want to implement control of the employees work or if or how they are following routines.

A vision for 2023 is to double the amount of employees. However, the management do not have a plan for how to create an organisational structure that will be suitable for that type of organisation. Today, much of the organisational culture resembles a small company. Since *Company A* have grown relatively fast in number of employees and are planning to do so even more, they experience some difficulties with keeping this culture. A couple of years ago, most of the knowledge was shared between employees during coffee breaks, but the situation is different today. The management explains they need to have a more structured organisation to handle the growing workforce.

Regarding knowledge sharing, management has a desire to have a high level of knowledge sharing within the organisation and believes they could find more effective activities or routines to facilitate this. They experience that this is becoming harder whilst they are growing in number of employees. However, since the culture is assumed to be appropriate for knowledge sharing, the management believe that this could be done properly with the right activities and tools. Also, they are focusing in finding and hiring employees that are interested in the company because of its culture. This require them to find a way to attract more suitable employees which is something they are having some difficulties with.

4.6 Organisational Processes

Company A has different processes including activities, routines and tools to help them with their daily operations. The management believe they have the right type of routines and processes, but that they have difficulties with using them in their daily work. Many employees experience the routines to be time consuming and therefore they are not prioritizing them. Management is well aware of this but believes that instead of forcing routines on employees and spending time and resources on controlling it, they should adapt the routines. Some of the organisational processes are further listed and explained below.

4.2.4 Face to Face-Meetings

- **Knowledge Sharing-Meeting**

Four times every year all available employees from the tree offices gathers in an "Knowledge sharing-meeting" which is a meeting with the purpose of knowledge and experience sharing. The subject of the meeting varies from time to time. Sometimes a specific knowledge area is on the agenda, for example a new technique of window replacement, or a new philosophy within project management. The employees can wish for topics that they find interesting or that they have knowledge in, or management decide topics they feel is relevant for the organisation. Sometimes experiences from completed project is discussed during the knowledge sharing-meetings. In that cases, the project managers in the projects gets the opportunity to share their thought on what they did well, what areas can be improved in future

projects and what they learn from the project. The general opinion of the knowledge sharing-meeting is good, and the employees agree it is a great forum for knowledge sharing.

One knowledge sharing-meeting were observed during this study, which took place in February 2018. The topic for this meeting were handovers between construction phases, and also handovers between project managers. The employees seemed positive to that this topic was brought up, since many experience that the routines for this process is insufficient. Almost everyone attending the meeting said that they at least one time had experienced a handover. The employees got to share their experiences from the handovers, and the common factor was lack of time deposited for handovers. One employee had experiences from taking over a project only one week before the construction phase started. The design manager in that project did not have enough time for giving all necessary information or being available for answering questions. This lead to a stressful period for the employee who took over the project. By contrast, another project was discussed as a positive example of a handover. In that project, the project manager had to handover the project to another person because of planned parental leave. Due to the good advancement, both managers had much time to prepare, and the handover was smooth and worked well for all involved, including clients and contractors.

One thing that was brought up during the meeting were the project checklist. Many employees wished for specific part of the checklist that included handover and important things that one need to consider before handing over a project to another phase or manager. The employees together with management identified 5 important steps that needs to be considered in a handover process. These steps were:

1. Together reviewing all relevant documents
2. Send all emails to the new project manager
3. Discuss any problems or important events that has occurred during the project
4. Let the new project manager participate in a construction meeting together with the previous project manager
5. Internal meeting with the client

- **Monday meetings**

Every month the management organise a breakfast meeting that all employees are encouraged to join. During these meetings, management presents the current situation at the company including profit, growth and important events in the future. Overall, different subjects are discussed depending on what is relevant for the current period. The employees also got the opportunity to bring up something with the management or the other employees at these meetings. This meeting usually lasts for 30 minutes and is a opportunity for management to have a communication with the employees.

- **Team building days**

Two times per year *Company A* has team building days for all employees at all three offices, where they arrange some activity around a decided theme, with the purpose of enhance team building. These days are mostly used as a tool to build culture and cooperation among employees and also to get to know each other on a private level.

Employees has only good things to say about these days and that they get closer relationships with their colleagues.

4.2.5 Project Routines

- **Project manual**

The project manual is a tool for the project managers, and contains of two parts; one checklist and one project manual. The checklist is a list with tasks that needs to be fulfilled before moving on to the next step, and includes tasks for all phases in a project. How the checklist is used is up to each employee, since it does not exist any external control on how well the project managers fulfil each task before moving on to the next. By observations, it is understood that the use of the checklist varies a lot between employees.

The other tool is the project manual, which also can be used throughout all phases of a project. The purpose of this manual is to work as a support for everyone involved in a project. It is a complement to the checklist since it in a more detailed way describes all tasks that need to be considered in a project. The fact that the manual also is only supposed to work as a support and not as a mandatory routine, the use of it varies just like the checklist. It is seen that less experienced managers use the tools more frequent than the more experienced managers. In cases when the time pressure is making the employees stressed about finish in time, it is also seen that the project manual gets low priority. Some of the employees has wished for more control of the project manual by management, while the management don't want to control the employees since they believe in freedom under responsibility.

- **Handover**

As mentioned before, currently *Company A* don't have a clear routine or task monitoring for handovers. It is seen that the handover process depends on the employee's available time and the construction manager's involvement in the design phase. In the cases were the construction manager also has been involved in the design phase, the handover became smoother according to the respondents. When the project is handover to a construction manager who is totally new to the project, the handover can easily suffer from information and knowledge losses. Especially when there is little set time available for the handover. As a consequence of insufficient handovers is contract variations, budget overruns and delays.

It is desired by the employees to have a better routine for this process. The biggest challenge, apart from lack of time for handover, seems to be who should pay for the time spent on a handover. It can be hard, according to the employees, to motivate the client why they should pay for a handover between project managers when, for instance, a project manager or construction manager gets sick for a longer period of time, or if they don't have time to finish the project. That is to say, better routines to make sure nothing is forgotten in a handover, and guidelines on how and who to bill for a handover is two important factors wanted by the employees.

- **Project Termination Routine**

After a project is completed and handover to a client, the project manager should follow some additional routines. Firstly, all deviations and customer complaints should be reported and noted by the project manager. Secondly, a project survey should be sent out to the customers. Thirdly, the project manager should summon to

an internal knowledge transfer meeting for everyone involved in the project. In this meetings the deviations, complaints and result from the project survey is discussed and also what went good and not good in the project. Suggestions for improvements is supposed to be shared with other employees in the organisation. The last step of the termination routine is archiving, which implies that all documents and emails from all involved parties are transferred to the map structure in the serve. The purpose of this routines are quality control, knowledge sharing and documentation.

However, these routines are rarely followed, which is seen clearly through observations and interviews. An exception is the project survey, which is almost always used as a way of quality control. Many employees witness the same problem here as in the handover routine; there is not enough time and no one wants to pay for it. On the other hand, most people find the routines good and important, and wish to use them if possible. Another reason for people not to follow the termination routines is, according to some of the respondents, due to the fact that no one in the management controls that the routines are followed.

- **Billable hours**

Since *Company A* is a consultancy firm they charge their client for the time spent working on projects. In the design phase, the company often uses a fixed price and has the possibility to “earn” some hours if they are working efficiently on the project. In the construction phase, the company use current billing, but they always have an estimated number of hours stated in the design phase. *Company A* have a rule to always update the client and provide them with a prognosis if variations occur.

Management has a certain view on how to charge their clients and this is well incorporated within the organisation. They believe that work is done in many different ways and if an employee figures out a problem during a workout, for example jogging, it would be appropriate to charge the client. Furthermore, they continuously have discussions about the value of one-hour work.

4.2.6 Tools

- **Knowledge matrix**

Earlier *Company A* had a document that presented all employees and their different knowledge, a so called knowledge matrix. This document was used as a tool for employees to know what skills their co-workers had and who to ask for help in certain situations. This has been disabled since management felt they could not ensure the quality, since employees themselves filled in the document and estimated their level of experience and knowledge. Instead the management and the responsible for quality and environment are working on introducing a system where selected employees have different knowledge areas as a responsibility. *Company A* need to keep themselves updated on what is going on in the industry and also make suggestions on how to improve their area of knowledge within the organisation. Management started this initiative for one and a half year ago but still have not chosen any employees or decided what knowledge areas to monitor. They claim this is not done because of lack of time or that is not prioritized.

Management say the old knowledge matrix is unnecessary since their culture at *Company A* makes it easy for people t know who to ask for help, and therefore the old document becomes redundant. However, when discussing this old knowledge matrix

with employees they are of a different opinion. Many of them express a desire for this type of document and mean that the quality of it, would not be an issue. They feel that employees of the company generally knows what areas they have skills within and that it does not matter if it is not completely accurate. It would still be a tool, especially for new employees, to know where to start asking for help.

5 Discussion

The discussion in this thesis is based on an application of the chosen theory to the empirical result. Riege's (2005) list of knowledge sharing barriers will be used as framework for the discussion, and the barriers presented is further divided into "organisational structure", "organisational culture", "organisational processes", and "organisational management", instead of individual and organisational barriers. In cases where one barrier could belong to more than one category, it was put in the most suitable.

Barriers- Organisational structure

- Use of strong hierarchy, position-based status, and formal power ("pull rank").
- Internal competitiveness within business units, functional areas, and subsidiaries can be high.
- Hierarchical organisation structure inhibits or slows down most sharing practices.
- Size of business units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.
- External competitiveness within business units or functional areas and between subsidiaries can be high (e.g. not invented here syndrome).
- Communication and knowledge flows are restricted into certain directions (e.g. top-down).

Barriers- Organisational culture

- Apprehension of fear that sharing may reduce or jeopardize people's job security.
- Low awareness and realisation of the value and benefit of possessed knowledge to others.
- Differences in experience levels.
- Poor verbal/written communication and interpersonal skills.
- Age differences.
- Gender differences.
- Lack of social network.^[SEP]
- Differences in education levels.
- Taking ownership of intellectual property due to fear of not receiving just recognition and accreditation from managers and colleagues.
- Lack of trust in people because they may misuse knowledge or take unjust credit for it.
- Existing corporate culture does not provide sufficient support for sharing practices.
- Physical work environment and layout of work areas restrict effective sharing practices.

Barriers- Organisational processes

- Dominance in sharing explicit over tacit knowledge such as know-how and experience that requires hands-on learning, observation, dialogue and interactive problem solving.

- Insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes that would enhance individual and organisational learning effects
- Lack of contact time and interaction between knowledge sources and recipients.
- Shortage of formal and informal spaces to share, reflect and generate (new) knowledge.
- Shortage of appropriate infrastructure supporting sharing practices.

Barriers- Organisational management

- General lack of time to share knowledge, and time to identify colleagues in need of specific knowledge
- Integration of knowledge management strategy and sharing initiatives into the company's goals and strategic approach is missing or unclear.
- Lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices.
- Lack of a transparent rewards and recognition systems that would motivate people to share more of their knowledge.
- Knowledge retention of highly skilled and experienced staff is not a high priority.
- Deficiency of company resources that would provide adequate sharing opportunities

In the following chapters, each of these categories, and how they can be applied on *Company A*, will be further discussed with support of the other theory presented in chapter 3. Furthermore, how growth and expansion is affecting knowledge sharing in *Company A* will also be discussed.

5.1 Organisational Structure

The structural barriers identified in *Company A* is presented in the table below;

	Barrier	No barrier
Use of strong hierarchy, position-based status, and formal power (“pull rank”).		X
Internal competitiveness within business units, functional areas, and subsidiaries can be high		X
Hierarchical organisation structure inhibits or slows down most sharing practices.		X
Size of business units often is not small enough and unmanageable to enhance contact and facilitate ease of sharing.		X

External competitiveness within business units or functional areas and between subsidiaries can be high (e.g. not invented here syndrome).		X
Communication and knowledge flows are restricted into certain directions (e.g. top-down).		X

Table 1: Structural barriers for knowledge sharing

The organisational structure of *Company A* does not, according to table 5.1, have any obvious barriers. The cross functional teams in *Company A*, makes the organisational structure less hierarchical, and more flat. In accordance with Riege (2005) and O'Dell and Grayson (1998), flat organisations with short ways to management is an important factor behind a successful knowledge sharing environment. Such flat organisational structure with cross functional teams enables a more horizontal communication, which according to Goh (2002) and Riege (2005,) also facilitates knowledge sharing, compared to a top-down communication way. Other variables that supports a horizontal communication at *Company A* is that management do not have their own room, but they are also a part of the activity-based office and sits among the employees. It is therefore easier to ask questions to the management more spontaneously.

Moreover, the organisational structure consists of teams with team leaders responsible for their team members in terms of development within the company and their overall occupancy in projects. Observations and interviews showed that the usage of this team-function was limited. For instance, when several project managers are working in the same project it is common that they are not a part of the same team. In accordance with Bresnen, Goussevskaia & Swan (2004) and their research on difficulties with sharing knowledge across projects, it can be an issue not using the team function. If team members would be placed together in projects the issue of sharing knowledge across the project and the team could be decreased. Management at *Company A* explains that the placement of the right project manager in the right project is a difficult puzzle to solve.

5.2 Organisational Culture

The cultural barriers identified in *Company A* is presented in the table below;

	Barrier	No barrier
Apprehension of fear that sharing may reduce or jeopardize peoples job security.		X
Low awareness and realisation of the value and benefit of possessed knowledge to others.		X
Differences in experience levels. [1] [SEP]	(X)	
Poor verbal/written communication skills.		X

Age differences.	(X)	
Gender differences.	(X)	
Lack of social network. ^[11] _[SEP]		X
Differences in education levels.	(X)	
Taking ownership of intellectual property		X
Lack of trust in people		X
Existing corporate culture does not provide sufficient support for sharing practices.		X
Physical work environment and layout of work areas restrict effective sharing practices.		X

Table 2: Cultural barriers for knowledge sharing

One approach to maintain or attract knowledge workers is to create a corporate culture that facilitates knowledge work, according to Newell (2009). If management succeed in creating this environment, workers are believed to adapt the organisation's values and perform with the interest of the organisation in mind. The most significant cultural enablers that facilitates knowledge sharing is trust, collaboration and innovation (Goh, 2002; Razmera, 2016; Carlin and Womack, 1999). *Company A* scores high on all of these factors, not one of the respondents had anything negative to say about the corporate culture and truly believed in the values if the organisation. Generally, the employees at *Company A* are good at communicating, asking for help and also at helping or give advice to colleagues. The respondents agree that the collaboration and cooperation in the office works well. One important factor that enables this sort of environment is that there is a feeling of trust among the employees and a strive towards a common goal. One thing that could have been a barrier for trust, is competitiveness of the knowledge (Riege, 2005). However, competitiveness is not something that has been observed in the organisation, since most employees shows enjoyment in telling other what they know. *Company A* also have a culture characterized by problem solving and problem seeking, which according to Goh (2002) enables knowledge sharing and collaboration. It is seen that employees often ask colleagues outside their project teams for advise on how to solve a problem.

Another factor that enables this kind of collaborative environment is the activity based office. Riege (2005) argues that the design of the office plays a big part for knowledge to be shared. The fact that people do not have a fixed seat, but sit next too different colleagues everyday enhances the collaboration and also the social networks. Something that was observed already in the beginning of this research was that everyone seemed to be friends with everyone, and there were no clear division of the employees. The newly hired employees also claimed that they fast were a part of the community, much thanks to the activity-based workplace.

According to Riege (2005), a heterogeneous workforce with differences in age, gender, experience and education could be a barrier for knowledge sharing. However, this is not something that can be observed in *Company A*, even if their workforce is varied. Therefore, these barriers is put in parenthesis in table 5.2. It can then be concluded that *Company A* do not have any cultural barriers for knowledge sharing.

5.3 Organisational Processes

The process barriers identified in *Company A* is presented in the table below;

	Barrier	No barrier
Dominance in sharing explicit over tacit knowledge		X
Lack of contact time and interaction between knowledge sources and recipients.	X	
Insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes	X	
Shortage of formal and informal spaces to share, reflect and generate knowledge.		X
Shortage of appropriate infrastructure supporting sharing practices.		X

Table 3: Process barriers for knowledge sharing

Carlin and Womack (1999) argues that every organisations are different from each other, and there is not a “one size fits all” alternative for activities or routines that facilitates knowledge sharing. It is therefore important that each company develop their own knowledge sharing strategy and also decides what kind of processes that would fit in such strategy. *Company A* has some activities, routines and tools that could enables knowledge sharing. For instance, the knowledge sharing meeting is an activity with the purpose of transferring individual knowledge to organisational. The respondents in this study agree that knowledge sharing meetings is a good way of learning from others. However, the number of meetings can be discussed. It is stated in the project manual that knowledge sharing meetings should occur after each completed project. Currently, the meetings occur four times every year, and experiences from completed projects is only discussed in some of these meetings. More frequent knowledge sharing meetings, or additional meetings over and above knowledge sharing meetings where only lessons learned from projects are discussed, could be one way of increasing knowledge sharing in *Company A*.

The other processes and routines discussed in chapter 4.6 has purpose that is considered to be good, but they are not always followed. For instance, the project manual, which is considered to be a great tool for not making the same mistakes over again, but the use of it is rarely controlled by management. Because of this lack of control, many employees claims that they do not prioritise it when they are stressed. Maybe, a system designed so that the project managers need a validation of their project manual checklist before they could continue to the next step, could be one way of making people use the existing routines.

At the moment, the project termination routine is at the end of each project. However, since many project managers just want to continue to the next project, when they have handover the current project to the client, they do not want to spend time on additional termination tasks. This leads to that the experiences from the projects do not get evaluated, and shared to the other employees. To have this kind of documentation and knowledge sharing routines continuously during the project, could be one way of making the process more efficient.

Then, as discussed in chapter 4.6.2, the handover between construction phases, or between project managers, is a non-existing routine that the employees want to improve. Almost all employees at *Company A* have once experienced an unsuccessful handover. The phasing of activities is an issue in the whole construction industry. It is not only difficulties with sharing knowledge across projects but also over different construction phases (Bresnen, Goussevskaia & Swan, 2004). During this process a lot of important information and project-specific knowledge risk getting lost. Even though all important information is put to paper and stored on the server there are some things that cannot be transferred through paper. One example is the close relationships that have been developed between the client and other actors. Currently, much knowledge and information is lost in the handovers due to lack of time and routines for the process. Also the fact that there are uncertainties about who should pay for the handover is an issue that requires better information and guidelines from management.

All things considered, *Company A* do have the many processes that could facilitate knowledge sharing. However, the fact that the employees often are stressed at work leads to lack of contact time and interaction between knowledge sources and recipients. And since routines are not always controlled or followed, it leads to insufficient capture, evaluation, feedback, communication, and tolerance of past mistakes. On the other hand, many employees appreciate their given freedom and not being controlled in their work. To maintain a balance between freedom and control can be a future challenge for management at *Company A*.

5.4 Organisational Management

The managerial barriers for knowledge sharing identified in *Company A* are presented in the table below;

	Barrier	No barrier
General lack of time to share knowledge, and time to identify colleagues in need of specific knowledge	X	
Integration of knowledge management strategy and sharing initiatives into the company's goals and strategic approach is missing or unclear.	X	
Lack of leadership and managerial direction in terms of clearly communicating the benefits and values of knowledge sharing practices.		X

Lack of a transparent rewards and recognition systems that would motivate people to share more of their knowledge.	X	
Knowledge retention of highly skilled and experienced staff is not a high priority.		X
Deficiency of company resources that would provide adequate sharing opportunities		X

Table 4: Managerial barriers for knowledge sharing

The management at *Company A* have big influence over the organisational culture, values and activities in the organisation. The common oxygen absorption goal, team building days, and shared breakfast each morning for instance, has been initiatives by management and is also factors that has created the special organisational culture that encourage trust, collaboration and cooperation. Despite this, most of the identified barriers can be found in the organisational management at *Company A*, as seen in table 5.4.

Firstly, there is no clear or pronounced strategy for knowledge sharing, which makes it impossible for it to be integrating in their business strategy. They also lack directions in terms of communication the benefits and values of knowledge sharing. The most compelling argument to why these barriers has been identified in *Company A* is that it seems that management does not prioritize knowledge sharing. Yet, they agree that knowledge sharing is important and that they wish to learn more about it. It could be argued that if management at *Company A* was more aware of the potential benefits of knowledge sharing, they would also assign more time for it, since they clearly have motivation of improving in this area.

One reason to why knowledge sharing have not been prioritized is probably lack of time. *Company A* is characterized by an environment where people generally do not have time for any tasks above the project related. “There is not enough time” was the most common answer to questions regarding the usage of different routines and processes, both by management and employees. Lack of time is something that permeate the organisation and actually hinders both management and employees from sharing knowledge. Currently knowledge sharing activities have low priority at the company. Knowledge sharing is not a part of the employee’s everyday work, but is more something that occur once every completed project, if there is time for it.

Economic reward systems is proven to enhance people's motivation (Bartol and Srivastava, 2002), and with such implementation in the company, it is possible that employees and management would assign more time for knowledge sharing activities. According to Newell (2009), it is important to have a representational leadership, that direct or indirectly reward desired behaviours of knowledge workers. This reward could be both financial or symbolic as long as it encourages the workers to behave in accordance with the core values and long term goals of tit is clear that more billable hours, and therefore also profit, is more highly valued than sharing knowledge. Depending on the current financial situation it might be worth for management to put resources on giving employees incentives to share knowledge in order to obtain a high expertise among their workforce in the future. *Company A* has a system where they

chose “employee of the month” but according to our observations this was chosen by recommendations by co-workers and has nothing to do with knowledge sharing. If *Company A* wants to enhance knowledge sharing, and thereby increase the experience level of the workforce, they should consider implementing a system that reward this behaviour, for example employee of the month.

Moreover, knowledge retention of highly skilled and experienced staff is not a high priority at *Company A*. Management is considered to be the two most experienced staff at the company who possesses a lot of knowledge. However, many employees claim that management is often busy and hard to get in touch with, which can slow down the knowledge sharing. Since management still work 40% of their time in projects, they are often away from the office. Likewise, many employees often work at other places than the office. This is partly due to the fact that management want to give their employees the freedom of working wherever they want, and partly because of the project-based structure which requires project managers to travel a lot and be on site. According to Newell (2009), many clients has a desire to locate the project managers on site or at the client office. This hinders knowledge sharing at the knowledge-intensive firm since this minimize the face-to-face meetings that facilitates knowledge sharing. This is something that *Company A* has taken under consideration and they reject all project where the client wants the project manager to be located at their office full-time. This because management feel that the project managers loses their most important source of knowledge; their colleagues.

5.4.1 Billable Hours

Company A is, as mentioned earlier in the empirical chapter, a consultancy firm that charges client for their worked time. During the design phase they normally charge a pre-decided fixed sum but during the construction phase they charge ongoing throughout the project. This creates some stress among project managers since management want all of their worked hours to be charged to clients. *Company A* has approximate 92% of direct time (hours charged to client) and their goal is to have 100%. Management has a modern way of looking at billable hours where they believe that an hour where a project manager spent running but meanwhile thought of a solution for a project, should be charged to the client. They also discuss the difficulties in valuing one hours of work since this differ between employees. The management believe that the employees themselves is capable of defining when and how to charge clients and now education in the matter is a part of the introduction for new project managers. However, when talking to the employees, it becomes clear that the matter of billable hours is an issue and causing stress among many of them. It can almost be described as a prestige in succeeding to charge all worked hours to clients instead of the own organisation. Newell (2009) describe billable hours as a hinder for knowledge sharing since knowledge workers feel they do not have time for spending time on creating or sharing knowledge and firms that has a high level of control in this matter has little possibilities to acquire new knowledge. This can be compared to *Company A*, where this is definitely the case for some project managers meanwhile others have more confident and “takes” time to spend on knowledge sharing. Observations at *Company A* showed that this issue is directly depending on the interest of the project managers themselves and not directed by management. One might argue that management need to consider the importance of knowledge sharing and adapt their objectives in billable hours accordingly.

5.5 Organisational growth

The organisation has grown over the last decade and the number of employees has increased accordingly. The fact that the organisation has expanded largely the last couple of years makes the workforce somewhat uneven, with more junior employees than seniors. Management have expressed this as one of their biggest challenges and that they are trying to attract more seniors. According to Newell (2009), this is a common issue for knowledge-intensive firms and therefore it is important for the organisation to maintain the current employees. *Company A* has chosen to hire a headhunter to find senior project managers but during our observations and interviews it was not clear what advantages they should present to the candidates that would make them chose *Company A*. Also, management expressed a dislike in using a headhunter as a way of recruiting new employees and would desire a situation where many seniors applied on open vacancies without the help of a headhunter. However, when *Company A* has an open vacancy today that require senior project managers they get few desired candidates that applies and instead a lot of juniors. *Company A* needs to find a way to attract more seniors in order to create a balance among employees but is expressed as a challenge according to management. Also, there is no strategy in place for finding a way to attract senior project managers, except from the usage of a head hunter.

6 Conclusion

In the introduction chapter, two main research questions were presented and has been the basis for the structure of the theoretical and empirical chapters in this thesis. In this chapter the questions will once again be presented but this time with answers.

How does Company A deal with knowledge?

- *How is knowledge shared across individuals, projects and construction phases?*
- *Is there a corporate culture that facilitates knowledge sharing?*
- *What processes are used to facilitate knowledge sharing?*

The results from the empirical findings in chapter 4, presents *Company A* as an organisation where knowledge is the mean of production and where knowledge is spread throughout the employees of the organisation on a daily basis. *Company A* is an organisation with a strong corporate culture where employees collaborate and trust each other. Employees values this culture and the openness within the organisation and express simplicity in asking colleagues for help. Most of the knowledge shared between employees is thru face-to-face meetings in the activity-based workspace and during lunch hours. In order to share knowledge across projects *Company A* arrange four meetings every year where one employee is in charge of presenting a project or something else that is considered to be of value for the entire organisation. The employee could also address an issue of some sort, that need to be discussed. *Company A* also arrange two events every with activities that enables both team building and knowledge sharing. Overall, the culture of *Company A* is something valued by both employees and management and is an enabler for knowledge sharing.

At *Company A*, there is little control over the quality of work and therefore not many routines for employees to follow. The most important routine, which also is the basis for how employees at *Company A* should manage projects, is the project manual. The intention of this manual is to minimize mistakes made by employees and to ensure that the client receives a service that is representable of *Company A*. This manual is an excel file where employees need to “check of” certain activities and *should* be overlooked by another employee before sending anything to the client. However, this manual is not always used since employees are of the opinion that the manual is not user friendly and takes to much of their time.

What are the challenges with achieving successful knowledge sharing within Company X?

In the discussion, chapter 5, the different barriers for knowledge sharing by Riege (2005) was divided into different categories; *Organisational structure, organisational culture, organisational processes and organisational management*. Furthermore, the barriers were compared to the observations and interviews made at *Company A* and evaluated whether these barriers could be considered barriers at *Company A*. That evaluation indicated that all barriers for knowledge sharing were found within *organisational processes and organisational management*. Below, a figure is presented with the barriers for knowledge sharing in *Company A*.

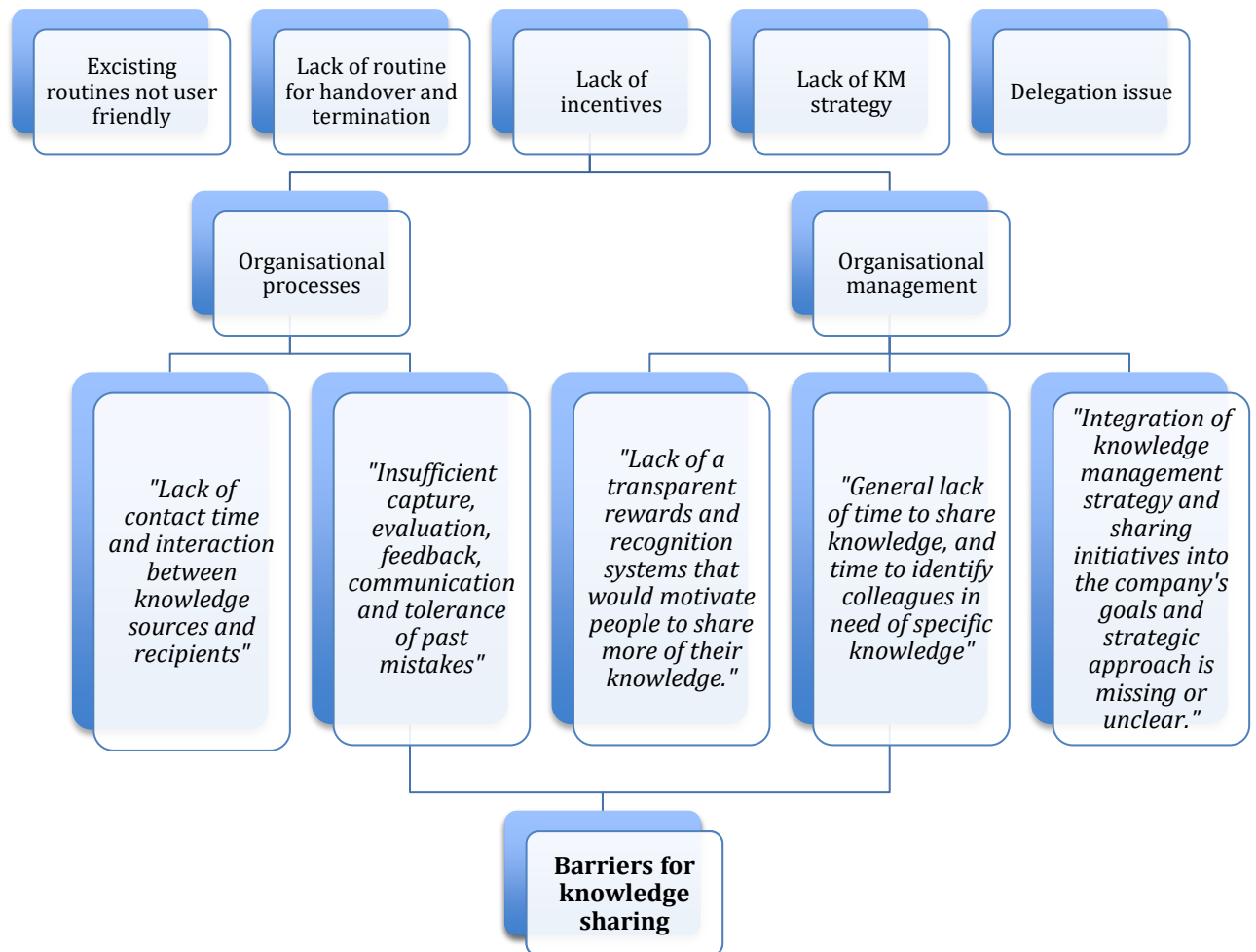


Figure 2: Mapping of barriers for knowledge sharing at Company A.

The main findings identified that caused these barriers was that, even if the processes are good, they are not always used at the moment, so they do not reach the benefits from them. There is also no strategy for knowledge sharing, or any incentives that would motivate it. By creating incentives (Newell et al., 2009) for knowledge sharing, management could enhance the overall knowledge within the organisation. Incentives, either monetary or symbolic, is an approach that provides employees with an indication on what management appreciates and values in them. Today, *Company A* has something called “employee of the month”, with an unclear nomination criteria and could instead be used as an incentive for knowledge sharing.

The employees of *Company A*, are working in several different projects at the same time and mostly representing *Company A* alone in the projects. As mentioned in the discussion, chapter 5, it can be challenging to share knowledge across projects which has been noticeable at *Company A*. One suggestion to improve the knowledge sharing across projects is to consider to always work in pairs. Management has expressed

difficulties in getting clients to agreeing to hire two project managers since clients fears this will end up costing them more. How and under what terms project managers are offered to clients has not been covered in this thesis but is recommended to look into further. Furthermore, employees have expressed a desire to work more in pairs since this would provide them with a possibility to learn from each other but also, since it has been expressed to be a more joyful way of working. This would require more work and puzzling from the team leaders but could be an important factor to enhance the knowledge sharing of *Company A*.

Throughout the observations of *Company A* and interviews with both management and employees one factor has been mentioned several times and seems to be an underlying problem for many of the discovered challenges; “*lack of time*”. This phrase has been used as an explanation for employees when discussing not using the organisational processes and routines. Furthermore, management has used it to explain the lack of improvements requested by employees and for the lack of important routines that facilitates knowledge sharing. Observations and interviews presented an organisation where knowledge sharing is more a vision than a strategic goal but at the same time an organisation with a strong culture and desire to keep improving themselves and to share knowledge with each other. The issue of “*lack of time*” lies on management to find a solution for, since this influences all levels of the organisation. Management are still working in projects as project managers, and justify this since this is vital for the profitability of *Company A*, because management are sometimes a requirement from clients to close a deal. However, management at *Company A*, might consider to delegate or hire qualified people to manage the organisation and its employees.

One challenge for for knowledge sharing when *Company A* is growing is the difficulty in recruiting senior project managers. As explained in the empirical findings, chapter 4, the workforce in the organisation is somewhat uneven with more junior than senior project managers. Since management themselves express a dislike in using a head hunter, one suggestion would be to focus more on educating the workforce of *Company A*.

Finally, this thesis is intended to highlight the managerial challenges in *Company A*. The result can be used by the management to find areas they may need to improve in order to have a successful knowledge sharing within the company. The study fulfilled its aim; to analyse knowledge sharing at *Company A*, and to get an overview over how *Company A* currently deal with knowledge, and identify possible challenges or barriers that can be improved before achieving successful knowledge sharing. The authors are happy about the result of their work, and hope they made a contribution to *Company A*, and the research in the fiend of knowledge management.

7 Future Research

Some issues and research aspects were identified during this study. Since they were not included in the aim or objectives, they were not the focus on this study, but can be a recommendation for future research

Firstly, *Company A* could look into how the new IT system could help employees share knowledge with each other. Also, this system might be useful for developing old and new processes.

Secondly, since lack of time has been the most important barrier for knowledge sharing, according to this study, *Company A* could research the difference between working on a fixed price compared to current price setting. It would be interesting to see if the lack of time barrier is as strong when employees are working in fixed price projects.

Lastly, *Company A* could examine the possibilities of working in pairs, today they are almost always working by themselves, to see if that would enhance knowledge sharing but also to reduce some lack of time stress.

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9 Appendix

This mapping was used to analyse the result from the observations.

Organisational Strategies	Pro	Con
Value driven organisation	<ul style="list-style-type: none"> • Defines organisation and employees • Creates trust with clients 	
Oxygen consumption goal for the office	<ul style="list-style-type: none"> • One hour training/week during work • Positive benefits from research 	
ISO9001, ISO14001	<ul style="list-style-type: none"> • Marketing purpose 	
Quality	<ul style="list-style-type: none"> • Surveys to clients 	
Knowledge Management		<ul style="list-style-type: none"> • No clear strategies

Organisational Culture	Pro	Con
Collaboration	<ul style="list-style-type: none"> • Not competitive • Eager to help and share experiences 	
Activity-based workplace	<ul style="list-style-type: none"> • Knowledge sharing • Adapted to everyone's need • Collaboration • No closed doors to management • Lower costs 	<ul style="list-style-type: none"> • People are not always at the office
Adapt work after private life	<ul style="list-style-type: none"> • Family puzzle • 40 hours work week 	<ul style="list-style-type: none"> • Value of one hour of work?
Mobile workplace	<ul style="list-style-type: none"> • Freedom under responsibility • Not stationed at clients office 	<ul style="list-style-type: none"> • People are not always at the office • Always available
Work environment	<ul style="list-style-type: none"> • Including environment • Happy with their job • Breakfast served everyday 10:00 • Common breaks three times a day 	<ul style="list-style-type: none"> • Time pressure • Performance anxiety

Organisational Management	Pro	Con
Working approx. 40% in projects	<ul style="list-style-type: none"> • Client base • Up to date 	<ul style="list-style-type: none"> • Time pressure • Not at the office
Key person	<ul style="list-style-type: none"> • High level of knowledge (right knowledge) 	<ul style="list-style-type: none"> • Much knowledge and little time to share that • High demand in projects
Flat organisation	<ul style="list-style-type: none"> • No hierarchy 	<ul style="list-style-type: none"> • Poor control of quality of work
Future		<ul style="list-style-type: none"> • No plan for organisation when its growing • "Small" company mentality • Why the urge to grow?
Knowledge Management	<ul style="list-style-type: none"> • Desire to have a high level of knowledge sharing 	<ul style="list-style-type: none"> • Lack of processes to facilitate knowledge sharing, storing, reuse
Communication with employees	<ul style="list-style-type: none"> • Keep employees updated about organisation's progress 	<ul style="list-style-type: none"> • Lack information of employees overall well-being • Lack information about number of handovers • Fails to communicate how to charge clients

Activities	Pro	Con
Erfa-meeting	<ul style="list-style-type: none"> • Knowledge sharing 	<ul style="list-style-type: none"> • More frequently
Monday meeting	<ul style="list-style-type: none"> • Most of employees is at office during morning • Communication between management and employee 	<ul style="list-style-type: none"> • More frequently and informal
Rotpartnerdagarna	<ul style="list-style-type: none"> • Teambuilding • Knowledge sharing • Happy employees • Well planned and performed 	
Induction	<ul style="list-style-type: none"> • Clear routine 	<ul style="list-style-type: none"> • Placed in project • Charging client
Team organisation	<ul style="list-style-type: none"> • Two performance reviews with each employee every year 	<ul style="list-style-type: none"> • Little collaboration within the team in projects

	<ul style="list-style-type: none"> • Team Leaders have meeting every monday • Team meetings once a month 	
Billable hours	<ul style="list-style-type: none"> • Clearly stated view on how to charge 	<ul style="list-style-type: none"> • No routines on how and when to charge • Indirect time
Handover	<ul style="list-style-type: none"> • Early involvement of construction management 	<ul style="list-style-type: none"> • No routine • Loss of knowledge and information • No follow up • No statistics over handovers
Close project	<ul style="list-style-type: none"> • Existing routine good 	<ul style="list-style-type: none"> • Is not used • No control • No storage of closed projects (samling över lärdomar från tidigare projekt) • Lack of time
Project manual	<ul style="list-style-type: none"> • Checklist • Valuable information 	<ul style="list-style-type: none"> • Lack of time • No control/follow up • Contains too many tasks
IT-tools	<ul style="list-style-type: none"> • New datasystem 	
Business intelligence (kompetensmatris)	<ul style="list-style-type: none"> • Responsibility for specific areas of knowledge 	<ul style="list-style-type: none"> • Ongoing process (1,5 years now) • Employees would use a matrix where people's skills is stated (management gillar inte)
Internal and external audits	<ul style="list-style-type: none"> • Internal • ISO9001 • ISO14001 	