Organizational learning through knowledge sharing
A study regarding influential factors of knowledge sharing between developers of an IT-consultant organization

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Organisatoriskt lärande genom kunskapsdelning
En studie kring främjande faktorer av kunskapsdelning mellan utvecklare på ett IT-konsultföretag.

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Abstract

This study aims to understand the knowledge sharing process between developers within an IT-consultant organization. As with today’s fast-paced and knowledge-driven society, there’s been a growing interest within organizations to manage their collective knowledge. Thus, this study doesn’t merely focus on what’s currently going on in a specific setting, but also what can be done to further influence the process of knowledge sharing.

Previous research within the field of knowledge sharing has been studied, mainly based upon the theoretical framework developed by Minu Ipe (2003). This study has been further divided into several influential factors regarding the process of knowledge sharing. We, therefore, strive to understand where the act of sharing knowledge occurs, how the employees learn from one another and what motivates them to participate in the process. This was done through qualitative methods, where several employees and a few representatives of the management of a certain organization were interviewed. The results gathered were further analyzed and conclusions were made regarding future improvements to the knowledge sharing process. Social and communicational aspects were determined to be core influential factors of knowledge sharing.

Keywords: Knowledge sharing, organizational culture, organizational learning, motivation.
**Sammanfattning**

Studiens mål är att undersöka och förstå kunskapsdelningsprocessen mellan utvecklarna på ett IT-konsultföretag. I och med dagens snabbt växande och kunskapsdrivna samhälle har intresset för att effektivt hantera den kollektiva kunskap som företag besitter märkbart ökat. Således strävar inte studien endast att undersöka hur kunskapsdelningsprocessen ser ut idag, utan även vad som kan göras för att främja processen ytterligare.


**Nyckelord:** Kunskapsdelning, organisationskultur, organisatoriskt lärande, motivation.
Dedicated to Carl von Leijonflycht
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1 Introduction and Background

1.1 Introduction

In today’s fast-paced and ever-changing society, knowledge has become a more valuable resource than ever before. With the rapid growth of social media and information communication technologies in general, it is hard to argue against our transition towards a so-called knowledge society (Toffler, 1990, cited in Nonaka, 1994). In an organization, the sharing and management of knowledge have not only become an important asset for competitive advantage (Nonaka, 1994; Cerbera & Cerbera, 2002), but also a central part of most modern organizational cultures during the last decades (Sveiby & Simons, 2002).

Consulting firms, especially those within the information technology sector, are valued based upon the professional intellect they possess (Quinn et al. 1996). The collective knowledge of the employees constitutes for that value and how the knowledge is further managed is what determines that advantage.

...there is so much to be learned and understood about how knowledge is created, shared, and used in organizations. (Grover & Davenport, 2001; Tsoukas & Vladimirou, 2001 cited by Ipe, 2003, 1)

In recent years, there has been a growing realization regarding the critical value knowledge sharing has towards both knowledge creation and organizational learning (Bartol & Srivastava, 2002). What was deemed a natural process at the workplace, has now become acknowledged as a complex process even under the best of circumstances. Vygotsky (1999) explains how knowledge is most efficiently created within the Zone of Proximal Development, through the act of socializing (Nonaka et al. 1996), in which he refers to the process of learning from those who are more knowledgeable.

As with these growing trends, many organizations are now attempting to manage the already existent competence. Creating opportunities and learning environments where knowledge is seen as an investment, and furthermore shared throughout the organization. Thus resulting in not only individual learning, but also contributing to organizational learning (Ipe, 2003).
1.2 Background

The organization, which will remain anonymous, is part of a larger privately held company that provides business software, IT related development and consultancy throughout Europe. One of the departments is situated in Sweden and specializes in software and solutions for the digitalization of public services and advanced businesses. This study was performed at one of the department’s business areas which, in simplified terms, develops and manages applications.

Twice a year every employee is expected to take part in the Employee Engagement Survey (EES), a survey of questions and statements which addresses specific areas of overall employee experience within the organization. As a result of the most recent one, it was made apparent that the knowledge sharing process within the organization was below satisfaction and an initiative had to be taken.

The study will refer to the organization as the organization to further preserve anonymity and revolve around the developers of the said business area. This study aims to understand what the organization is currently doing to manage their collective knowledge and discuss what can be done, from the moment new employees are introduced until that of their resignation.

1.3 Purpose

The purpose of this study is to find and discuss what enabling factors exist while working towards a more efficient knowledge sharing culture. What is it that motivates the employees to share their knowledge and learn from each other, and what can the organization do to further encourage this type of culture as a learning organization?

The aim is to provide useful conclusions that would benefit, not only the employees of the studied business area, but also the organization as a whole. In particular regarding the future development of the knowledge sharing process.
1.4 Research Question
This study aims to answer the following research question:

- What is the organization currently doing to manage the collective knowledge of its employees?
- What can be done to encourage both new and existing competencies/employees to share knowledge within the organization?

1.5 Limitations
The aim to end up with a result that could be generalized and beneficial throughout the entire organization is restricted due to accessibility and time limitations. The employees participating in this study are strictly of one particular business area, however as much is done on an organizational level there is still the possibility of other branches benefiting to some degree. Thus the aim remains.

There are no inter-organizational strategies being considered in this study, nor is any research being made at other organizations to receive comparative results.

As there have been several studies and definitions of knowledge as a concept. The theoretical background regarding aspects of knowledge is in this study limited to the theories of Michael Polanyi (1962) who, among other things, founded the term “tacit knowledge” and Ikujiro Nonaka who is one of the most commonly cited within the field of knowledge creation.
2 Theoretical background

This section will explore and present relevant theories regarding the aspects of managing and sharing knowledge. The theoretical background of this study will, together with a perspective of learning, be based upon the enabling factors of knowledge sharing according to the theories of Ipe (2003).

Ipe’s (2003) model identifies four significant factors of knowledge sharing in organizations; The nature of knowledge, the motivation to share, the opportunities to share and the organizational culture. These factors are, according to Ipe (ibid.), intertwined and influence one another in the process towards knowledge sharing, and the organizational culture is what creates the foundation of the three other factors.

Figure 1. Minu Ipe’s model of knowledge sharing

The model is beneficial in its ability to easily categorize and observe distinct factors, thus further provide future advancements within the area of human resource development (Ipe, 2003). Ipe (ibid.) concludes that this model could be effectively used to study specific organizational settings, to identify influential factors of knowledge sharing.

[…] studies would also be able to identify factors that motivate and inhibit knowledge-sharing behavior within the contexts chosen for the study. Subsequent research could then be done to verify whether these factors apply across organizations, using methods that allow results to be generalized to larger populations. (Ipe, 2003, 355)
As the model of Ipe (2003) is aimed towards identifying the factors of knowledge sharing, it is not specified which factors are the most influential. Thus, it is presumably left to the ones applying the model to conclude what is deemed most influential within a specific setting. As some factors of knowledge sharing are likely to be either in or out of control (Nooshinfard & Nemati-Anaraki, 2014).

### 2.1 Learning

#### 2.1.1 The Sociocultural Perspective

The Russian pedagogue and psychologist Lev Vygotsky (1999) introduced the idea that higher learning is something emerging from social environments. The sociocultural perspective claims that because of the social nature of humans, learning is something affected by surrounding individuals and cultural values (ibid). Thus, making some factors of Ipe (2003), such as culture and opportunities, also relevant to the aspects of learning. When knowledge is shared between individuals, there’s likely a learning process involved. This concept of learning is often defined as the **Zone of Proximal Development**, also known as ZPD (Vygotsky, 1999). The ZPD describes the difference of what can be taught on your own and what can be taught with the assistance of others (See figure 2), through the act of socializing (see section 2.2.2). Vygotsky (ibid.) further claims that what is currently possible only with the help of others will later become part of the zone of what is possible to learn by oneself.

![Figure 2. Illustration of The Zone of Proximal Development](image-url)
Aside from the advantages of working together and learning from one another, there have also been studies that argue that there exists, within human nature, a preference of working with others towards a common goal (Gärdenfors, 2010). There is no secret that humans are social beings that enjoy recognition for their work and knowledge, but Gärdenfors (2010) also states that we, as humans, prefer doing difficult or tedious tasks with others, to share the burden.

2.1.2 Community of Practice

*Community of practice* (CoP) is a concept similar to that of Vygotsky’s *Zone of Proximal Development* (Vygotsky, 1999), as it based upon the theory that higher learning is possible when a group people who share the same interest or concern interact with each other (Wenger, 2011). For a community to classify as a *community of practice* it is important for the participants to have regular interaction with each other, it is, however, not specified in what way the interaction should be performed (Wenger, 1998). The interaction doesn’t necessarily have to be face to face, as it can also be done through the means of information communication technologies such as *Slack* or *Google hangout* (see table 6).

The concept was first introduced by Jean Lave and Etienne Wenger (1991), but later considerably expanded by Wenger himself. Today the concept *community of practice* has become, due to the acknowledgment of the importance of knowledge management, adopted in most major organizations in some way (Wenger, 2011). According to Wenger, there are four general characteristics of a community of practice;
Communities of practice enable practitioners to take collective responsibility for managing the knowledge they need, recognizing that, given the proper structure, they are in the best position to do this.

Communities among practitioners create a direct link between learning and performance, because the same people participate in communities of practice and in teams and business units.

Practitioners can address the tacit and dynamic aspects of knowledge creation and sharing, as well as the more explicit aspects.

Communities are not limited by formal structures: they create connections among people across organizational and geographic boundaries.

Wenger (2002) explains the concept of communities of practice as ‘building blocks’ of certain social learning systems, in which he refers to a community of practice as a simple social system. Social learning systems are furthermore seen as complex systems where competence is determined by historical and social values (Wenger, 2002, 226). When a newcomer joins a community or a new job, it is natural to want to align the already possessed experiences with the competencies defined within the community. Thus, learning is often deemed a social process that is crucial for new employees of an organization (Wenger, 2002).

2.1.3 Mentorship

2.1.3.1 Traditional mentorship

In a traditional sense, a mentorship is regarded as the developmental relationship between a senior- and a junior practitioner. The senior, as the appointed mentor, assumes the role of a helping hand, offering professional guidance and psychological support (Colvin & Ashman, 2010). It is also through the mentorship that new employees often learn of the historical and social values of the organization, and thus the mentorship can be referred to as a social learning system (Wenger, 2002). The relationship between the mentor and the mentee is in a traditional sense usually seen as a one-way flow of support.
2.1.3.2 Reverse mentorship
Contrary to the traditional mentorship, reverse mentoring is defined as the workplace relationship between a senior- and a junior practitioner, where the junior assumes the role as the mentor (Chaudhuri & Ghosh, 2012). The junior, being most commonly part of a younger generation, can offer insights on new rapidly changing technologies and new ways of thinking. Chaudhuri & Ghosh (ibid.) further emphasizes the potential leadership benefits gained by introducing a reverse mentorship as a result generated by removing the misconception of seniority being a criteria of leadership.

2.1.3.3 Intergenerational mentorship
Satterly et al. (2018) introduce the intergenerational mentorship as the combinational benefits of a traditional- and a reverse mentorship, while also taking the cultural differences between generations into consideration. Satterly et al. (2018) further explain this mentorship model as a way to tackle the issues regarding the misperceptions and stereotypical assumptions that reside between different generations within the organization.

Everyone leads, and everyone learns
(Satterly et al., 2018, 446)

Figure 3. Intergenerational Mentoring model (Inspired by Satterly et al., 2018, 448)
2.2 Knowledge

Facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject.

(Oxford English Dictionary, 2019)

Previous research has divided knowledge into two forms of knowledge - tacit knowledge and explicit knowledge (Nonaka, 1994; Polanyi, 1962).

2.2.1 Explicit- and Tacit knowledge

The knowledge that is explicit can be defined as “hard” knowledge and can be easily transferable through different means of communication (Nonaka, 1994). This type of knowledge is part of everyday professional life as it can by definition be expressed formally and systematically through e.g written articles and manuals (ibid.).

Unlike explicit knowledge, tacit knowledge is difficult to share with others. This type of knowledge is difficult to express formally and can’t be systematically documented in the same manner as explicit knowledge. Tacit knowledge has thus come to be defined as “soft” knowledge and is based upon insights, intuitions, and beliefs. (Nonaka, 1994; Polanyi, 1962)

*We can know more than we can tell.* (Polanyi, 1966, 4)

One of the most common examples of tacit knowledge is the ability to ride a bicycle, as it is difficult to formally express how to find the balance to stay upright. The technical aspects and theory behind how a bicycle is supposed to be ridden can, however, be explained through instructions, through explicit knowledge, but the practical aspects of riding a bicycle are limited by the particular knowledge of the spacial interrelations (Polanyi, 1962). A novice can, therefore, possess the explicit knowledge of riding a bike but still fail due to the lack of tacit knowledge one gets from individual experience (ibid.).

It should be stated that without tacit knowledge, it is hard to make explicit knowledge easily transferable (Nonaka, 1994; Nonaka & von Krogh, 2009; Polanyi, 1962). To express explicit knowledge through either written text by moving our hands or utter a sentence by creating sounds we require tacit knowledge. The way
every individual understands the world and communicates is knowledge gained from experience and simply being human.

Only by first spreading the practice in relation to which the explicit makes sense is the circulation of explicit knowledge worthwhile (Cook & Brown, 1999 cited by Brown & Duguid, 2001, 204)

2.2.2 Knowledge creation

Nonaka (1994) argues that both forms of knowledge are not to be seen as distinct from one another, but rather symbiotically interacting with each other through various means of situations. Along with the theories that knowledge is created by the converted process between tacit- and explicit knowledge (ibid.), Nonaka et al. (1996) further assert Four Modes of Knowledge Conversion to explain how knowledge is created and expanded between the tacit- and explicit knowledge.

![Figure 4. The modes of knowledge creation](Inspired by Nonaka et, al., 1996)

The conversion between tacit- and tacit knowledge, referred to as socializing, is the process of transferring knowledge through the act of interaction between individuals. As seen in section 2.1.1, this process is often defined as the Zone of Proximal Development (Vygotsky, 1999). Nonaka et al. (1996) further emphasize the fact that the acquisition of tacit knowledge can be done without the use of any language, simply by observation. As with the previous example regarding the tacit knowledge of riding a bike (see section 2.2.1), the conversion of the knowledge of keeping the bike upright and moving forward might be easier demonstrated than explained.
In contrast to the conversion between tacit knowledge, the process of converting explicit- to explicit knowledge is done by sharing a *combination* of different bodies of explicit knowledge (Nonaka et al., 1996). The combination of explicit knowledge allows knowledge to be easily transferred between individuals by the use of e.g. information communication technologies. Through emails and meetings, knowledge can be collected and recontextualized into more relevant knowledge.

*Externalization* is the process of converting one’s tacit knowledge into explicit knowledge (Nonaka et al., 1996). This process is, according to Nonaka et al. (ibid.), abstract in its definition of having to articulate one’s thinking through mental images and metaphors. The effectiveness of this conversion is based upon the pedagogical skills of the contributor and the contextual understanding of the recipient.

The final mode of conversion is the *internalization*, which is the process of conversion from explicit- to tacit knowledge (Nonaka et al., 1996). This process regards the absorption of new knowledge to make it applicable to the owner in its tacit form (ibid.). The *internalization* of knowledge is most commonly acquired through experience and can be closely regarded as a concept of *learning by doing*.

**2.2.2 Knowledge sharing**

When explicit- or tacit knowledge is in some way, transferred between individuals it is referred to as the process of knowledge sharing (Ipe, 2003). This process of sharing or transferring, knowledge between individuals can be done in either a formal or informal manner. Ipe (ibid.) refers to these forms of knowledge sharing as *purposive learning channels* and *relational learning channels*, which Taminiau et al. (2009) argue are two extremes of the same spectrum. The type of knowledge sharing that is deemed formal, are all forms that are institutionalized by the organization. These are regarded as meetings, services or activities, organized by management, with the main purpose of sharing knowledge.

*Formal opportunities include training programs, structured work teams, and technology-based systems that facilitate the sharing of knowledge* (Ipe, 2003, 349)
Informal knowledge sharing, however, is the type that exists alongside all forms of formal and institutionalized knowledge sharing (Taminiau et al. 2009). All forms of socialization and interaction could be defined as informal knowledge sharing, which also regards services and activities as with formal knowledge sharing. The difference is that these informal forms of knowledge sharing, are not necessarily made with the purpose of sharing knowledge and could include everything from eating lunch to commuting together (Mertins et al. 2001).

Figure 5. The continuum of formal knowledge sharing to informal knowledge sharing (Inspired by Bartol & Srivastava, 2002)

Bartol and Srivastava (2002) propose two other mechanisms of knowledge sharing besides the formal and informal interaction between individuals - Contribution knowledge to databases and sharing knowledge through communities of practice, which we already have touched upon (see section 2.1.2). By contributing knowledge to databases, with or without direct intent of sharing knowledge by the individual, the routine of sharing knowledge and the knowledge itself will stay recorded (ibid.).

Knowledge sharing is basically the act of making knowledge available to others within the organization. (Ipe, 2003, 341)

2.2.3 Levels of knowledge sharing

According to the research of Nooshinfard & Nemati-Anaraki (2014), there are three different levels of knowledge sharing that are most commonly distinguished. However, as to better reflect the reality of this study there will another level of knowledge sharing introduced, the business area.

At an individual level, sharing knowledge is seen as the act of creating new experiences or meaningful learning aspects on a personal level. It is often seen as the knowledge shared through the mutual process between two parties, which further enables the reshaping of the received knowledge in a personalized context (Ipe, 2003). Knowledge sharing on a team level is often done through project teams or
within different communities of practice, with the possibility of integrating the knowledge across organizational boundaries (Bartol & Srivastava, 2002). Depending on the size and structure of the organization, there might be different business area levels where relevant knowledge is shared according to the particular needs of that business area. Barton and Srivastava (ibid.) and Nonaka (1994) explains the organizational level as the act of knowledge sharing where individuals share information, expertise or discuss ideas relevant to the organization in its entirety.

![Diagram of levels of knowledge sharing]

*Figure 6. Dependencies of vertical knowledge sharing (Inspired by Nooshinfard & Nemati-Anaraki, 2014)*

Nooshinfard and Nemati-Anaraki (2014) further distinguish two forms of knowledge sharing. Sharing knowledge within each level is defined as horizontal knowledge sharing, whereas the sharing between levels (see figure 6) is defined as vertical knowledge sharing (ibid.). Intra-organizational sharing, the sharing of knowledge within an organization, is deemed effective there’s an active learning process within each level, starting from the individual (ibid.). Thus, making interaction and collaboration between the employees a crucial part of the process.

### 2.2.4 Dilemmas of knowledge sharing

In accordance with the factors of knowledge sharing presented by Ipe (2003), there are three principal reasons as to why knowledge sharing tend to fail; The cost of creating and managing opportunities for sharing knowledge, lack of motivation to participate in the sharing of useful knowledge and the free-rider problem (Dyer and Nobeoka, 2000; Cabera & Cabera, 2002).
On an individual level, especially as a consultant, knowledge sharing can risk lowering one’s competitive value and furthermore be a hindrance in career advancement (Bartol and Srivastava, 2012). Sharing knowledge not only risks one’s competitive value, but it can also risk the exposure of what knowledge one doesn’t have. Thus, it is often seen as more profitable to free-ride, which Cabrera and Cabrera (2002) refers to the act of taking part in the knowledge sharing process without contributing.

According to Ambos and Schlegelmilch (2009), most consulting firms nowadays have some sort of repository where they keep lessons learned from previous projects and practices. It has however been evident that these repositories seem to have a tendency to disguise failures and larger mistakes, instead of making sure they are thoroughly communicated, due to the previously mentioned issue of free-riding and lack of time (ibid.). The lack of feedback and communication from previous failures could result in a similar pitfall and risk having to reinvent the wheel (Davenport and Prusak, 1998; Ambos and Schlegelmilch, 2009).

Another dilemma regarding knowledge sharing is the social aspects, as the sharing of knowledge often requires social interactions and direct communication between individuals (Ajmal and Koskinen, 2008). Even if all factors of Ipc’s (2003) model of knowledge sharing are fully present within the organization, there’s always a risk of social awkwardness and lacking human cognition. Those aspects could, however, be thought of as part of the cultural factors of knowledge sharing. According to Ajmal & Koskinen (2008), cultural factors are what cause most issues with knowledge sharing systems, not technical oversights.

### 2.3 Culture

#### 2.3.1 Organizational Culture

Where culture is regarded as the social behavior a group has developed through shared experiences, organizational culture can be more specifically seen as how we do what we do. Ajmal and Koskinen (2008) further explain the organization culture as the practices and the assumptions that all employees of the organization.

> Culture is to the organization what personality is to the individual—themes that provide meaning, direction, and mobilization.
> (Ajmal & Koskinen, 2008, 11)
Due to the power hierarchies that reside within most organizations, there is a greater need to emphasize the impact of leadership when it comes to transforming the organizational culture (Marker, 2010; Schein, 2004). Edgar Schein (2004) further argues that management and creation of culture as the basis of leadership, where culture and leadership could be seen as two sides of the same coin.

How well-established and the size of the organization have been proven to be impactful factors when attempting to make changes towards an already existing organizational culture (Becerra-Fernandez, Gonzalez, & Sabherwal, cited in Ajmal & Koskinen, 2008). Older, and better-established organizations tend to be more reluctant compared to the younger, more recently established organizations. Larger organizations might also face the issue of being divided into smaller sub-organizational cultures due to either competitive aspects between different business areas or as a natural response to the sheer size of individuals.

> The required company culture could be characterized by openness, mutual trust and tolerance of mistakes, which would then be considered necessary costs of learning. (Mertins et al., 2001, 5)

Several studies have shown that the issue regarding organizational culture is one of the hardest to solve, but also the one that generates the greatest benefits if successful (Schein, 2001).

**2.3.2 Introduction to the organizational culture**

According to the theories of Bauer (2010, 2), the introductional process can be divided into four distinct levels, referred to as *The four C’s of Bauer*;

<table>
<thead>
<tr>
<th><strong>Table 2. The four C’s of Bauer (2010)</strong></th>
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<tbody>
<tr>
<td><strong>Compliance</strong></td>
</tr>
<tr>
<td><strong>Clarification</strong></td>
</tr>
<tr>
<td><strong>Culture</strong></td>
</tr>
<tr>
<td><strong>Connection</strong></td>
</tr>
</tbody>
</table>
Bauer (2010, 2ff) explains that in accordance with these four C’s, organizations tend to be further divided into three distinct categories regarding their introdutional process;

*Table 3. The three categories of organizational introduction process (Bauer, 2010).*

<table>
<thead>
<tr>
<th>Level 1: Passive Onboarding</th>
<th>Compliance with lacking Clarification, without Culture and Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2: High Potential Onboarding</td>
<td>Compliance and Clarification, with lacking Culture and Connection</td>
</tr>
<tr>
<td>Level 3: Proactive Onboarding</td>
<td>Compliance, Clarification, Culture, and Connection</td>
</tr>
</tbody>
</table>

In all cases where an introduction is present, there is *Compliance* and some form of *Clarification*, as it is needed to be able to perform the expected work task. The distinction of a well thought out introduction is further determined by the presence and quality of *Culture* and *Connection* (Bauer, 2010). A proactive onboarding is however by no means a common occurrence according to Bauer (ibid.), as only roughly 20% of all organizations have reached that level of an introdutional process.

To be introduced to the organizational culture, there has to be an integrational process of the culture present. As every organization possesses a culture unique to themselves, based upon the social behavior of each employee, studies have shown that the organizational culture is more likely adapted if there is a mentorship present (Bauer, 2010). Quinn et al (1996) further argue that people who are thoroughly mentored will develop a greater in-depth knowledge of their work (know-why) and identify further with the organization and its goals (care-why). According to Ernstsson & Rothberg (2014), the mentorship part is deemed one of the most important parts of the introdutional process.

*Peer mentors provide ‘safe havens’ for new employees to ask questions, gain knowledge and explore the culture* (Case Study: Keeping Onboarding Up-to-Date at Microsoft, cited in Bauer, 2010)
2.4 Motivation

While the concept of motivation has been defined in various different ways, some researchers have defined it as the drive to act (Ryan and Deci, 2000; Chamorro-Premuzic, 2011), which is still quite the abstract definition. Gärdenfors (2010) argues that the basis for motivation comes from our expectations rather than out of the reality of the situation.

2.4.1 Intrinsic- and Extrinsic motivation

The most commonly suggested distinction of motivation is the partition of intrinsic- and extrinsic motivation (Maccoby, 1995; Ryan and Deci, 2000; Ipe, 2003). The intrinsic motivation is according to Ryan and Deci (2000) what drives individuals to act due to self-value and satisfaction, while extrinsic motivation refers to where rewards, higher salary, and promotion act as drivers (Maccoby, 1995).

\[ \text{[...]} \text{the enjoyment of an activity for its own sake is what distinguishes intrinsic from extrinsic motivation...} \ (Arnsten, 1990, 462) \]

As intrinsic- and extrinsic motivation can be seen as two distinct definitions, they are still regarded as two sides of the same coin. A combination of the two is what determines the motivation of an individual (Maccoby, 1995).

2.4.2 Theories of motivation

As with the definition, there have been several theories regarding motivation apart from the broad definitions of intrinsic- and extrinsic motivation. Most of these theories are however based upon the theories of Maslow’s (1954) hierarchy of needs and Herzberg’s (1966) motivator-hygiene theory.

2.4.2.1 Maslow’s hierarchy of needs

The theory of Maslow’s (1943) hierarchy of needs is based upon the belief that needs have to be satisfied in order of hierarchy. A solid enough foundation of needs has to be satisfied before another level of need will begin as a motivator. It is emphasized that one level of need doesn’t have to be fully satisfied to move on to the next level (ibid.)
2.4.2.2 Herzberg’s motivator-hygiene theory
Herzberg’s (1966) theory proposes a two-factor distinction of satisfaction, based upon Maslow’s (1943) theory, to determine motivation. Work-related tasks associated with a sense of satisfaction are referred to as *motivators*, whereas negatively experiences related, but not exclusively, to work are referred to as factors of *hygiene* (Palm, 2008).

<table>
<thead>
<tr>
<th>Motivators</th>
<th>e.g recognition, advancement, work itself and personal growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hygiene</td>
<td>e.g supervision, personal life, relationships, and work conditions</td>
</tr>
</tbody>
</table>

These two factors are also distinct from one another in the sense that the *motivators* are factors that are seen as potential gain in their presence, in contrast to the *hygiene* factors that can be defined as the potential loss in their absence (Palm, 2008).
Figure 8. Motivator-hygiene dependencies in accordance with Maslow’s hierarchy of needs (Inspired by Palm, 2008, 42)
3 Methodology

This research is made using an abductive approach (see figure 9), which is the process of gathering both empirical data and theory simultaneously (Blomkvist & Hallin, 2015).

As seen in figure 9, the methodological approach of this study can be divided into two different phases. Phase 1 is mainly regarded as an “investigating” phase, where most of the study took place. While Phase 1 was continuously ongoing from start to finish, Phase 2 was first initiated after some data had been gathered. This phase regards the practical application of the analyzed data within the organization. During both phases, there was a simultaneous gathering of both empirical data from observations, interviews, discussions, and theory from the literature study.

As the study, in a general sense, is a research of individuals perception of learning and motivation in a certain setting, thus regarding several abstract factors. A Case study strategy has been chosen in accordance with the theories of Denscombe (2017):

Case studies aim its attention towards how, in detail, relationships and social processes act in social settings. This is done because the research is not only interested in what’s happening in this particular setting, but also to explain why it’s happening. (Denscombe, 2017, 92f, translated by the author)
In this case study, semi-structured interviews have been done due to its adequacy in collecting qualitative data regarding personal opinions and assumptions in detail (Kvale, 1997; Denscombe, 2017)

### 3.1 Qualitative Data

#### 3.1.1 Interviews

Interviews were done in an attempt to understand in what way the organization was managing the collective knowledge of each employee, and where their motivation resides.

At the beginning of this research, a couple of open/non-structured interviews were held with management and one employee within the organization. These interviews were more of an open discussion regarding the area of knowledge sharing in general and what their thoughts were about its process within the organization. The thought behind this was to get an understanding of the situation within the organization, to create relevant and meaningful questions for the upcoming interviews. (Denscombe, 2017)

The remaining interviews were done in a semi-structured manner, due to its adequacy with collecting qualitative data regarding personal thoughts and beliefs in detail (Kvale, 1997; Denscombe, 2017). This was done by creating a couple of guideline questions (see appendix 1) that would make sure the interview remained relevant, but also gave the interviewees room to express themselves fully.

The interviews were done in Swedish and recorded by sound due to the possibility to permanently revisit answers if uncertainties would arise (Denscombe, 2017). The interviews were further transcribed, translated and summarized with the permission of each and every participant. As the interviews were done by one person, recording the interviews by sound would also prevent unnecessary distractions.
3.1.1.1 Selection of participants
The participants of interest were, first and foremost, the developers of the studied business area, but also those who were part of management. As the introductional process was of interest, developers with a maximum of three-year work experience at the organization were selected. This was done to prevent outdated and lacking information, to keep the received data relevant. The developers were further chosen due to availability, but also due to educational- and occupational backgrounds. The aim was to strive for a group of participants as diverse as possible to keep the validity and reliability high.

There were in total of five developers interviewed, who all possessed different educational- and/or occupational backgrounds, and two that were part of different branches of management.

3.1.2 Observations
Most of the research was done at the organizational building, thus enabling the potential of observing the organization first hand and being able to take part in relevant documents. The information received through these means is not to be directly revealed due to organizational secrecy/discretion. It is, however, a valuable source of information when performing a qualitative case study, as it can act as an empirical basis regarding the context of the research. Being able to perform a participating observation at the organization was also beneficial in terms of placing the respondents' answers in perspective. (Denscombe, 2017)
3.2 Ethical aspects

The research has been performed in accordance with the Swedish Research Council’s four aspects of conducting ethical research (see table 5). Each participant was, prior to the interview, informed of why this research was performed and what the research area was regarding. The participants were also informed that their participation was to be anonymous, with the option of ending the interview at any given time. All the interviews were recorded by sound with the consent of each participant. As mentioned in section 1.2, the organization will be referred to as “the organization” throughout the study, to further preserve its anonymity. The participants who are part of any branch of management will also be referred to as “management” regardless of their position. Due to the limited amount of developers in this particular branch of the organization, their educational background will not be specified more than what was said in the previous section. The organizational design will also not be specified further than what is said in section 4.1, to keep the anonymity of the organization as high as possible.

Table 5. Swedish Research Council’s four aspects of conducting ethical research
(Summarized and translated by author, Vetenskapsrådet, 2002, 7-14)

| The informational requirement | The participants shall be informed of the purpose of the research |
| The requirement of consent    | The participants shall give voluntary informed consent to participate in the research. |
| The requirement of confidentiality | The information gathered shall be unavailable to those unauthorized and the privacy of the participants protected. |
| The requirement of use        | The information gathered shall only be used for its intended purpose. |
4 Results and Analysis

The results presented in this section are based upon the data gathered from the respondents and further analyzed according to the theoretical framework in section 3. The results will be further divided into categories based upon the factors of knowledge sharing explained by Ipe (2003).

As the factors all intertwine through certain aspects, there will be some overlapping occurring throughout this section.

4.1 Creating opportunities and encouraging knowledge sharing

The organization is, as previously mentioned (see section 1.2), part of a larger privately held company. This company is further divided into several sub-divisions, with a focus on different target markets. These divisions are also divided into different business units, in accordance with their geographical location. Thus making the organization one of the business units located in Sweden, with its own business areas of expertise.

![Figure 9. Organizational design](image-url)
There is a noticeable understanding between all of the respondents that the support from management is a core aspect to enable a knowledge sharing culture. Along with the theories of Ipe (2003), that knowledge sharing is based upon the culture of a work environment, Mertins et al. (2001) further that leadership, organizational culture, human resource management, and information systems are the most important factors of successful knowledge sharing organizations.

What is management currently doing in an attempt to create opportunities and encourage knowledge sharing? As Taminiau, et al (2009) explains, formal forms of knowledge sharing are all forms that are institutionalized by the organization. Thus a reasonable approach would be to first investigate what formal opportunities are created by management, according to the respondents.
Table 6. “Formal opportunities for knowledge sharing at the organization”

<table>
<thead>
<tr>
<th>Level</th>
<th>Type of event/meeting</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational</td>
<td>EES + workshop</td>
<td>2 times a year</td>
</tr>
<tr>
<td></td>
<td>Social events (AW)</td>
<td>5 times a year</td>
</tr>
<tr>
<td></td>
<td>Kick-off</td>
<td>2 times a year</td>
</tr>
<tr>
<td></td>
<td>Kick-off (Abroad, with all</td>
<td>Every other year</td>
</tr>
<tr>
<td></td>
<td>international branches)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lunch meeting</td>
<td>4 times a year</td>
</tr>
<tr>
<td></td>
<td>Developers network</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Emerging technology</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Slack</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Intranet</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Google Drive/Hangout/Calendar</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Consultant-CV</td>
<td>-</td>
</tr>
<tr>
<td>Business area</td>
<td>Meeting</td>
<td>4 times a year</td>
</tr>
<tr>
<td>Team</td>
<td>Project stand-ups</td>
<td>Every day</td>
</tr>
<tr>
<td>Individual</td>
<td>Certifications</td>
<td>Once, in adjunction with the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>graduate programme</td>
</tr>
<tr>
<td></td>
<td>Mentorship</td>
<td>The first year of employment</td>
</tr>
<tr>
<td></td>
<td>Seatings/Workspace</td>
<td>Every day</td>
</tr>
</tbody>
</table>

‘-’ regards inconsistent frequency.

These formal opportunities regard, not only, the formal forms of knowledge sharing as Taminiau (2009) explains them, but also the mechanisms of knowledge sharing explained by Bartol & Srivastava (2002) - Contributing knowledge to databases and sharing knowledge through communities of practice.
The formal opportunities have been further divided in regards to what level of knowledge sharing they occur within this organization. The organizational level is where the sharing of knowledge occurs together with other branches of the organization, regarding organizational relevant knowledge. As this study is limited to one particular branch, the business area level is not taking the other branches into consideration, thus only focusing on what happens from and within said business area’s perspective. According to the respondents, there are no teams present within this branch of the organization other than the ones made up of the project teams. How the project teams are to be managed are up to the project leaders, which differs from project to project. The Individual level is where the focus lies upon the opportunities created towards each employee’s personal development.

It should be stated that according to one respondent who was previously part of management, there have been several changes quite recently regarding the frequency and purpose of the formal opportunities within the organization. Thus creating the possibility of inconsistent data regarding what is deemed as goals and how the current reality of the situation is deemed.

*There were previously no thoughts regarding the social aspects of formal events and informational meetings, they were just events that had to be done. However, as the current HR manager was employed last year, there has been a lot of effort done towards ‘why’ we do things.* (Respondent 6)

There have been a lot of formal opportunities created at an organizational level during the past year, much as an attempt to tackle the issue regarding the lack of intra-organizational socialization. Without an encouraging environment that provides formal opportunities for knowledge sharing, it will be a challenge for the employees to take part in informal opportunities as well. Organizational culture (see section 4.3) is not only responsible for creating the assumptions about what type of knowledge is deemed important and at what level, but also shapes the context for social interaction (Ipe, 2003). Management furthermore has the responsibility to make sure that the importance of knowledge sharing are thoroughly communicated with the employees, which is something that the respondents agree upon has not been previously evident within the organization. Mertins et al. (2001) also emphasize that social interaction and a sense of belonging is a basis for enabling the act of sharing knowledge.
The developers, and most employees apart from management are in general seated in accordance with practicality, business area, and assigned project. The seatings are either structured 2x2 or 1x2 (see figure 10) with some seats empty due to a variety of reasons.

![Figure 10. Seating arrangements at the organization](image)

*We are seated two and two next to each other within quite the large space, and monitors blocking the people on the other side.* (Respondent 1)

Most of the daily communication is, according to the participants, done either with the person seated next to them, during lunch or during the daily project meetings. Ipe (2003) explains that these informal interactions are more likely to contribute to the process of knowledge sharing, compared to the use of formal systems.

Most developers that are part of a project, especially those with a team situated in the same building, have daily stand-ups together. Which refers to daily meetings where those involved in the project discuss the progress and issues of their work. Those who are not physically present are instead expected to join in through *Google hangout* (see table 6). According to the respondents, this is where the only frequent form of what they see as knowledge sharing occurs.

*I’m part of a project team that has daily stand-ups. During these stand-ups, we discuss what we’ve done since yesterday’s stand up, what’s gone well, any problems that might have occurred and what we’re supposed to do next.* (Respondent 2)
As seen in table 6, the organization are using several mechanisms of knowledge sharing (Bartol and Srivastava, 2012) to keep information both transparent and easily available to everyone at the organization;

Table 7. Mechanisms of knowledge sharing at the organization

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slack</td>
<td>ICT for fast communication regarding everything from social use to work-related issues.</td>
</tr>
<tr>
<td>Consultant-CV</td>
<td>Information regarding every employee’s competencies and previous experience.</td>
</tr>
<tr>
<td>Google Hangout</td>
<td>Video-/Audio communication tool</td>
</tr>
<tr>
<td>Google Calendar</td>
<td>The daily schedule of everyone in the organization is available to everyone, regardless of position.</td>
</tr>
<tr>
<td>Google Drive</td>
<td>Open database with information on an organizational and business area level.</td>
</tr>
<tr>
<td>Intranet</td>
<td>Organizational and business area specific information directly from management.</td>
</tr>
</tbody>
</table>

Table 5 further displays two, not so obvious, events; the developer network and Emerging technology. Both formal opportunities were sought to be seen by its creators as communities of practice, where, primarily, developers could voluntarily discuss and learn new technologies. The developer network was created by management for all developers within the organization to be able to develop competencies within their daily work, whereas Emerging technology was an initiative made by an employee to learn new interesting technologies not necessarily connected to work. Both the developer network and Emerging technology have, however, been less frequent and according to the respondents, not as consistent as initially expected.

_During the last one and a half year, I believe there has been around six developer networks being arranged._ (Respondent 5)

One respondent further explains the reason for this as the ones that usually lead respective events didn’t have time, for various reasons, to continue and no one has yet to step up.
One of the main issues regarding these events is who it is that should lead them. [...] Management seems to encourage these events, but it’s still a question of who should take the lead. (Respondent 2)

There is either a lack of communication or a lack of motivation (see section 4.2), or both, regarding the formal opportunities of sharing knowledge and developing competencies. Most respondents explain that they don’t feel as the organization is investing in their competencies, while others explain that the possibility of investing in one’s competencies exists as long as they themselves take the initiative.

4.1.1 Summary

The respondents all agree that there are notable efforts done by management to create formal opportunities, especially regarding the events focused on socializing. They do however feel that the focus on an organizational level might not be working entirely as intended, as there are still issues within the business area level.

The formal opportunities that have a focus towards knowledge sharing and development of competencies are inconsistent and frail in their structure. Management is encouraging, but not taking the necessary initiative.

There are a lot of assumptions and uncertainties between management and the developer’s regarding why things aren’t happening, especially regarding the development of competencies. Management is, however, doing well as to inform the employees about what is happening at the organization and how it’s progressing.

There is furthermore a noticeable lack of continuous natural communication present at the organization, which seems to prohibit the socializing aspects and initiatives done by the developers.
4.2 Motivation and willingness to share

According to Nooshinfard & Nemati-Anaraki (2014), the encouragement from management has been seen as positively associated with the employees’ perception of wanting to share their knowledge, but it is also a matter of each individual’s personal motivation. The respondents agree that, in the end, it is up to each and everyone to take responsibility for their willingness to participate. They further state that the process of sharing knowledge comes more natural within each respective team, due to them sharing the same project processes. Gärdenfors (2010) and Mertins et al. (2001) explains the reason being the human preference of working with others towards a common goal and thus creating an encouraging environment for exchanging knowledge. Belongingness is, according to Herzberg (1966) something to be further considered as a hygienical dependency, which is seen to negatively affect motivation in its absence (see section 2.4.2.2).

Even though me and the person I currently work with are sharing knowledge well together. I would love to work in larger teams despite most of us working on different projects. Not to gain immediate knowledge, but as a reason to create a team-feeling between the developers within the organization. I feel it is important to be able to share the burden and success with others. (Respondent 1)

The respondents agree that some of the issues regarding the social aspects of the organization are due to the generational gap and the natural barrier between different business areas. This, in turn, has further created a noticeable gap between the employees of the organization. Satterly et al. (2018, 441) explains the generational gap as a common occurrence within the workplace and can account for social hindrance due to assumptions and misconceptions. Some respondents also argued that there are social difficulties even within the business area, but added that this is most likely due to the “stereotypical social awkwardness of developers”. A common dilemma of knowledge sharing (see section 2.2.4).

By further interacting within the business area, there will not only be increased aspects of immediate knowledge sharing, but also competitive awareness through comparative interaction (Cabrera & Cabrera, 2002). As with the drive of not wanting to expose the lack of knowledge, there is also a drive of wanting to show what knowledge one possesses.
There are times when you don’t feel like you can ask for help, sometimes it feels like you’re stealing other people’s precious time or risk exposing what you don’t know to certain people. It’s not like I’m completely certain of what it is I’m supposed to know or what is deemed a valid question. (Respondent 2)

All of the respondents were, according to the gathered data, motivated towards participating in formal opportunities, and/or communities of practice (Wenger, 1998), such as the Developer’s network and Emerging Technology. Some argued that it might not always be areas directly connected to their own area of expertise or that of interest but still felt considerably positive towards it. Wenger (2002) explains that these types of events are important for a sense of social identity and belongingness, gained through such social learning systems. Thus, enabling the employees to gather an understanding of what competencies are evident within the organization.

There were some divided thoughts regarding the respondents' willingness to be part of a larger team, outside of their assigned project. Some respondents exclaimed that they would be positive towards being part of a larger team, where they could discuss ideas and problems on a larger scale. They argued that it would be a comforting factor to be part of a larger group with similar expertise. Others argued that they didn’t see any realistic benefits of being part of a larger team, due to the diverse and limited area of expertise within the business area.

As some respondents explained one of the issues of sharing knowledge as the fear of asking questions they should know the answers to. The fear of exposure of one’s lack of knowledge, also one of the knowledge sharing dilemmas presented in section 2.2.4. This, according to Bauer (2010, 11), could be supported by a proper mentoring relationship.

As the respondents exclaim interest in taking part in formal opportunities, they often mention it in accordance with their own development of competencies in focus. The motivation of taking part in these formal opportunities derives from the respondents' intrinsic motivation (Ryan and Deci, 2000). Thus creating the need by management to communicate the personal gain of participating in these formal opportunities, or change the contents to more accurately reflect their employees’ intrinsic motivation. As with this, a previously unmentioned dilemma of sharing knowledge (see section 2.2.4) was discovered, namely the ‘who should pay for the time spent of me sharing my knowledge?’'. This is something deriving from both management and the
developers, as most consultants have to report their working hours to different projects to earn their salary.

Bartol and Srivastava (2012) further discuss the question of ‘what’s in it for me?’ and explains how organizations can motivate individuals to share knowledge. Bartol and Srivastava (ibid.) argue that one mechanism for sharing knowledge is through contributions to databases, which according to the respondents is not an evident process at the organization. There are, however, some opportunities to share knowledge through the contribution to databases present (see table 6) at the organization.

4.2.1 Summary
It is evident that the developers prefer working in teams, as long as they see the value of participating. All the respondents felt that the daily stand-ups were a rewarding process in their daily work.

There exists a considerable motivation towards participating in workshops and formal opportunities that focus on developing, especially within their own business area. The motivation is, however, existent as long as participating is not equivalent to taking the initiative. Much relies on the need for motivated leadership.

There are social difficulties within the organization, and some respondents argue that it’s evident even within the immediate business area. These difficulties seem to arise due to generational differences, stereotypical introvert characteristics, the assumed divided culture between business areas and competitive aspects. Thus, hindering the motivation to fully participate in the presented formal- and informal opportunities.

The communicational issues have resulted in assumptions, thus preventing new initiatives. While management believes the motivation to participate is low because there are no initiatives being taken from the developers, the developers themselves are waiting for an initiative to be taken by management, thus resulting in a typical catch 22 (Heller et al., 2011).
4.3 Introduction of the organization and the culture

Through successful recruitment, a business can be further processed and developed. New successful people of revenue can be developed and by retaining the successful recruitments, a foundation for continued stable development in the knowledge-based organizations. (Sveiby, 1990, 86)

The organizational culture is something usually presented in conjunction with the recruitment process, and in best case already known prior to that. The recruitment process is according to Sveiby (1990) one of the most important tasks within a knowledge-based organization and is what keeps the organization innovative going forward.

There are two general ways of employment at the organization, either by being employed straight away as a developer in a particular field or through the organization’s graduate programme. The graduate programme was created with certain specific purposes in mind (see table 7) and is proof of the organization’s understanding of what Sveiby (1990) argues as important within a knowledge-based organization. The graduate programme could furthermore be deemed successful as several of the respondents felt it was both a selling point when applying and an appreciated beginning of their career well after the programme had ended. However, none of the respondents knew before applying that there was a graduate programme available at the organization. This was first evident in the recruitment process.

<table>
<thead>
<tr>
<th>Table 8. The purpose of the graduate programme at the organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attracting newly graduated students, as a complement to more senior candidates</td>
</tr>
<tr>
<td>To identify and develop employees with high potential</td>
</tr>
<tr>
<td>Creating opportunities for finding valuable competence</td>
</tr>
<tr>
<td>Being an attractive employer/organization.</td>
</tr>
<tr>
<td>Economic profit</td>
</tr>
</tbody>
</table>
The graduate programme is an 8-week process and consists of three graduates. These graduates are recruited within different areas of expertise, where they will be further divided into different respective business areas. Together with certain predetermined criteria, the graduates will manage a project of their own while being mentored by the previous year’s graduate students and supervised by a senior developer. All of those who had gone through the graduate program felt satisfied with how the process of the project was organized and structured, they did, however, feel like it was too short of a period and that they were released too early.

According to the respondents, it was further evident that the recruitment process and the introdutional process didn’t focus on the culture of the organization itself, but rather on the envisioned culture of the entire company. A respondent further explained that their presence at one of the university career fairs they were attending was not as to represent the organization but rather the entire company. Even though they were there to recruit individuals for the organization specifically.

While many are satisfied with the organization as an employer, it was evident that the respondents felt difficulties identifying with the organization. None of the respondents could describe the culture of the organization and those who did, said it was more or less non-existent, especially when it came to the aspects of knowledge sharing.

The organization together with its management has as of late shown high interest in wanting to solve the task of creating an encouraging organizational culture, but has yet to fully succeed according to the respondents. Several studies have, according to Schein (2010), shown that the issue regarding organizational culture is one of the hardest to solve, but also the one that generates the greatest benefits if successful.

*I have no idea what my colleagues four seatings away from me are working with. Mostly because everyone is simply working as their own small branch within the organization, instead of collectively identifying as the organization.* (Respondent 4)

The introdutional process is according to the respondents, backed by Sveiby (1990), where the foundation of the social interaction and organizational belonging occurs. The respondents further explain that almost all of the daily social interaction is either with their respective project team or with the ones who shared the same introduction. This is, however, a problem for some of the teams with members situated elsewhere, which prevents the possibility of taking part in informal opportunities.
The mentorship part of the introduction is something that the respondents, both management and developers, all agree exists without any significant structure. The reason for the mentorship is, according to management, meant to support the graduates during the entire year. If, however, there is no structure present when receiving a certain task, then that task will be up to every respective individual to interpret themselves. Gärdenfors (2010) argues that the sense of wanting to teach others is evident within human nature, but the quality of the mentorship will thus be too reliant on the effort of the individual mentor and further risk being too inconsistent between the new employees.

I believe there is a weakness that we haven’t been entirely clear regarding what being a mentor and what having a mentor actually implies. (Respondent 7)

It was noticeable that the respondents didn’t feel like they received an appointed “someone” that they always could turn to for help. There does however exists an “open door”-policy between the developers and the business unit manager, which is appreciated in the aspect of the leadership-employee relationship. According to Ernstsson & Rothberg (2014), the mentorship part is deemed one of the most important parts of the introductional process.

A fully functional mentorship process should work as an effective and stable process of entering the organizational network. Quinn, et al (1996) further argues that people who are thoroughly mentored will develop a greater in-depth knowledge of their work (know-why) and identify further with the organization and its goals (care-why). The mentorship also acts as a terrific opportunity to connect the divided culture of old and young, which some of the respondents felt was a social dilemma. The entire process could also be seen in reverse, and thus let the senior employees take advantage of the possible unexplored modern knowledge that the newly graduated students possess (Chaudhuri & Ghosh, 2012). The intergenerational mentorship introduced by Satterly et al. (2018) could help with the generational difficulties and by further implementing the intergenerational mentorship across each business area, there could be progress made in two areas at once.

I believe that most employees see the organization as a place where you only check in, do your work and check out. They are not here to socialize and indulge themselves further within the organizational culture. (Respondent 7)
While there might be some complaints towards the generational gap, the respondents were positive towards the structure of the organization as a work environment. No one is staying well into the night working and management is deemed to be understanding towards the employees’ work-life balance. This is furthermore not surprising, as management explains that the average age of their employees is on the older side. Thus often resulting in a separation of work and social life, creating a more stable work-life balance.

4.3.1 Summary
The culture that the organization is trying to envision is that of the entire company, instead of embracing the culture that currently exists within the organization. Thus preventing the employees from fully identifying with the organization. The graduate programme is attractive and successful in what it currently has to offer, but is leaving too much potential to chance. It is also deemed too short according to some respondents, and most of them feel like they would’ve wanted more support during the initial onboarding process.

The mentorship part is according to all respondents, management included, leaving much to be left desired. The idea of having the previous year’s graduates responsible for leading the current graduates is appreciated by all, but there needs to be clear instructions regarding their mentoring role. An intergenerational mentorship could be initiated on top of this to broaden the social network, connect the different generations and break down barriers between the different business areas.

As explained in section 3.2.1, there are social difficulties within the organization. As the organizational culture is based upon the social behavior of the individuals at the organization, it will, in turn, affect the progress towards an encouraging knowledge sharing culture.

There is furthermore a great deal of trust in management by the employees and while the initiatives done by management are not always successful, there is overall respect towards their efforts. This seems to indicate that the leadership competencies are evident within the organization, which is key for encouraging knowledge sharing.
4.4 Knowledge, learning and understanding

It was previously mentioned that the respondents didn’t feel like they, in general, had someone to turn to when in need of help. What wasn’t mentioned is that all of the respondents agreed upon the reason for this - the senior developers were either too busy or there just wasn’t anyone that was knowledgeable in their area. The respondents explain that most of them work within different areas, in different environments, towards different customers, and thus making it difficult to offer help to each other. This furthermore deprives the employees of the most crucial aspects of social learning (Wenger, 1998; Vygotsky, 1999), especially regarding the benefits gained through the Zone of proximal development (Vygotsky, 1999). It was however fascinating that the respondents explain that they ‘do not know what the other developers are knowledgeable of’, resulting in assumptions which can further prohibit new knowledge from being created.

According to the respondents the organization generally works within environments made by Microsoft, thus offering and making sure the developers are educated and certified within relevant areas could benefit the organization as a whole. The Consultant-CV would furthermore be made more attractive towards new customers, thus generate more opportunities for revenue for the organization.

_By certifying us developer’s they could display concrete proof of our competences, rather than claim that they possess ‘good developers’ as every other organization._ (Respondent 5)

The onboarding process, especially after the graduate programme, is where most developers tend to feel abandoned (see section 4.3.1). It is often a concern regarding the assumption of what is expected in terms of knowledge. The fear of exposing the lack of knowledge can negatively affect the motivation towards knowledge sharing (see section 4.2). While some of the respondents argue that their knowledge is overestimated in terms of a newly graduated developer, management explains that there are no high expectations being made in the beginning.

_I feel like they (management) should at least assign us to projects where we can contribute. In the beginning, after the graduate programme, everything felt so insanely complex, I felt pretty useless and that didn’t exactly boost my confidence._ (Respondent 3)
Most of the respondents do feel that the onboarding process is problematic in general, as they feel like they get thrown into a new project without any support. While most of the respondents don’t have any previous work experience, they accept the problematic onboarding process as a common thing within the consultancy business. That there is just no time to invest in gaining new project related knowledge. Some parts of management do, however, feel that investment in competences could risk resulting in economic losses, while others see it as a necessity to advance in profits. By not placing any hours towards developer competencies, revenue can in simplified terms be seen as a linear continuity. Regardless of the quality of the work.

![Figure 11. Time equals money, a linear approach at the organization (Author’s own illustration)](image)

The senior developers at the organization are well known by everyone and extremely competent according to the respondents. There are however not that many of them, and the most competent of them are assigned to the most complex of projects. Thus making them specialists and irreplaceable to a particular project. This has according to management been a problem since there is no one to relieve them and thus creating a power struggle. Sveiby (1990) explains the issue with the growing value of the senior employees as a common occurrence within knowledge-based organizations. The advantage of time has enabled them to gain more knowledge and gather more connections ahead of their junior counterparts.
4.4.1 Summary

Due to the diverse expertise within the organization, the opportunities to create new knowledge through the act of socializing, within the Zone of proximal development, is also scarce. It is, however, evident that the employees are not fully aware of what knowledge their colleagues possess. Thus, creating prohibiting assumptions.

The onboarding process seems to lack communicational aspects in general, creating more negatively charged assumptions. Management argues that there are no high expectations being made, while some employees feel like they are being abandoned. Despite no high expectations, there’s still a noticeable sense of revenue being evident by the management’s perspective. Resulting in limited aspects of available time.

While there’s a limited amount of expertise available within the organization, there does exist some well-versed competence. The issue seems to remain through the lack of time and hierarchy of power between the junior and senior developers.
## 5 Conclusion

Table 9. A summary of the analyzed results, divided into respective factors of Ipe (2003).

<table>
<thead>
<tr>
<th>Culture</th>
<th>Power hierarchies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generational gap</td>
</tr>
<tr>
<td></td>
<td>Reality and vision</td>
</tr>
<tr>
<td></td>
<td>Individuals</td>
</tr>
<tr>
<td>Opportunities</td>
<td>Assumptions</td>
</tr>
<tr>
<td></td>
<td>Expectations</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td>Consistency</td>
</tr>
<tr>
<td></td>
<td>Time is money</td>
</tr>
<tr>
<td></td>
<td>Mentorship</td>
</tr>
<tr>
<td></td>
<td>Diverse expertise</td>
</tr>
<tr>
<td></td>
<td>Competence development</td>
</tr>
<tr>
<td></td>
<td>Fear of lacking competence</td>
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<tr>
<td></td>
<td>Competition</td>
</tr>
<tr>
<td></td>
<td>Onboarding</td>
</tr>
<tr>
<td>Motivation</td>
<td>Initiatives</td>
</tr>
<tr>
<td></td>
<td>Social</td>
</tr>
<tr>
<td></td>
<td>Personal value</td>
</tr>
<tr>
<td></td>
<td>Teams</td>
</tr>
<tr>
<td></td>
<td>Leadership</td>
</tr>
<tr>
<td></td>
<td>Identifying with the organization</td>
</tr>
</tbody>
</table>
From the analyzed results, we have identified and summarized aspects connected to the factors of Ipe (2003). It should, once again, be stated that these factors intertwine. One example being that power hierarchies results in assumptions and misperceived expectations between management and the employees. Thus, creating a need for leadership initiatives. Based on the presented factors and how they intertwine, we have made the following conclusions (see table 10):

Table 10. Conclusion based on the analyzed results in table 9.

<table>
<thead>
<tr>
<th>Leadership initiatives</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure and feedback</td>
<td>Personal development motivates</td>
</tr>
<tr>
<td>Individual before organizational</td>
<td>Mentorships</td>
</tr>
<tr>
<td>Teams</td>
<td></td>
</tr>
</tbody>
</table>

It is evident that the organization posses respected leaders and have sufficient resources (opportunities) at its’ disposal. The issue, however, seems to be due to how these opportunities are communicated and structured. The conclusions in table 10 have been made in order to answer the research question of this study, “What can be done to encourage both new and existing competencies/employees to share knowledge within the organization?”, with the following explanations:

- Due to the unavoidable existence of the power hierarchy within almost every organization, there have to be clear leadership initiatives taken to make sure the employees share the same vision as management. As leadership and culture can be seen as two sides of the same coin, one can’t fully function without the other. If management wants to make sure that their employees utilize the available resources (and formal opportunities), it has to start with an evident and genuine leadership initiative.

  *The culture is not decided upon the existence of a gaming room, it is decided upon the willingness to use the gaming room.* (Respondent 1)
Communication is, on all levels, fundamental in the sharing of knowledge and information. It is the tool that, not only allows for higher and faster learning, but also teaches us about organizational and cultural structures. With a leadership initiative, it is communicated to the employees what is expected and what is aspired (e.g. time allocation for personal development). Communication is needed to avoid false assumptions and missed opportunities.

Structure and feedback are needed to make sure that what is communicated has been received as intended and that everyone shares the same perception. With clear objectives and expectations being properly introduced throughout the organization, management should be able to, not only, receive more expected results, but also create a safer environment for its employees. Together with thorough communication, structure and reoccurring feedback could also be seen as enabling factors for reaching a higher level of onboarding (see table 3).

Formal opportunities with regards to personal development as a means to capture the intrinsic motivation. Set goals towards investing in junior developers, aim to create future senior developers. Communicate the existence of formal opportunities for competence development, both internally and externally. Thus, creating intrinsic motivation for the employees and simultaneously advertising organizational value (e.g. advertising received licenses on platforms such as LinkedIn). Invest in competence to keep competence.

When promoting organizational culture and motivating employees to take part in presented formal opportunities, it has to start with each individual. If opportunities and changes were attempted on an immediate organizational level, it could be difficult for each individual employee to identify with the organization and end up lacking enough motivation to participate. Thus, It is essential for management to communicate benefits in terms of personal development. A leadership initiative could furthermore create an enhanced sense of belongingness, which will further display management’s encouragement of each employee’s personal development. As belongingness is also fundamental to social aspects, a greater effort should be focused on the immediate business area. A smaller focus will make it easier for each employee to find its own individual way of identifying with the organizational culture.
- A proper and structured traditional *mentorship* not only provides each new employee with the best possible introduction to the organization but also gives management valuable feedback about their assets. By further developing the mentorship programme the organization can steer new employees in a preferred direction, preventing otherwise commonly occurring issues. In addition to the traditional mentorship, an intergenerational mentorship across different business areas could both bring the organization closer together and provide senior expertise in terms of e.g. work-life experience. The structure and responsibility of these mentorships should be clearly communicated between both parties and followed up by management.

- Implement new *teams* that act as a community of practice for the developers within the business area, to among other things break the level of belongingness within Maslow’s Hierarchy of needs (see figure 7).

While some of these conclusions are specifically aimed towards the developers, the majority of them should be able to be applied throughout the entire organization.
6 Discussion

6.1 Theoretical reflections

Prior to this study, there was no previous experience held within the area of “knowledge sharing” besides the basic knowledge of the sociocultural perspective (see section 2.1.1). The foundation of the theory used within this study came from looking at previous research and theories regarding the subject of knowledge sharing. It began with learning more about the “why’s” and the “what’s”, which would end up representing motivation (see section 2.4) and knowledge (see section 2.4). While regarding the practical aspects of knowledge sharing, the “how and/or where” became an area of interest. This initially resulted in studying communities of practice and together with the Zone of Proximal Development, the mentorship process was also thought of as a crucial part of how higher learning was achieved. From these perspectives of why, what and how/where, the early stages of the case study could finally begin.

While the problem area was determined from the start, there was no further knowledge other than that the result from the EES, regarding the knowledge sharing process, was low. The organization, who had shown interested in solving the issue, had furthermore no demands regarding the shape of this study. While this was appreciated, it also created more of an effort to formulate a relevant research question. The initial purpose, through early observations and open pilot interviews, was to understand more about the current knowledge sharing process and why it might be “failing”. With this and the previous theoretical perspectives in mind, the first research question “What is the organization currently doing to manage the collective knowledge of their employees?” was created.

With the first research question finalized, the model of Ipe (2003) was deemed as an excellent starting point when identifying the factors of knowledge sharing. The model furthermore introduced the concept and value of organizational culture, which was also an area mentioned in the open pilot interviews at the organization. Thus, the model became the core framework of the entire study and was what inspired the interview questionnaire (see appendix 1) and the second research question.

As more and more interviews were being held, new knowledge and idéas were gained. The semi-structured interviews furthermore resulted in previously not considered theory becoming of interest (e.g. intergenerational mentorships and knowledge sharing dilemmas). While some theories were added, others were discovered to be redundant and removed from the study.
The theories, all together, created a mental framework regarding the entire process of knowledge sharing within the presented context. As the study is based upon the questions of why, what and how/where it felt crucial to initially understand the basics of e.g. motivational factors and the creation of new knowledge.

6.2 Conclusions in practice

According to the analyzed results, there could be a lot of progress being made simply by focusing on the communicational aspects. One of the most distinctive problems is how the value of contributing knowledge is communicated by management. If we make the assumption that management wants to take part in the benefits of having their employees share and contribute knowledge, the rewards have to be thoroughly communicated. (Bartol and Srivastava, 2012). We can assume that a lot of issues are due to people of higher hierarchy being ignorant of the existence of the power hierarchy, crippling the initiatives taken by the ones at the bottom.

It is worth mentioning that there are dilemmas to be found regarding the presented conclusions (see section 5).

Intergenerational mentorships are theoretically a perfect solution for the organization as it is trying to connect the different generations and, in this case, different business areas. It is however likely that one generational side is larger than the other, thus creating a lack of even mentorship pairs if everyone were to participate (Satterly et al. 2018). As the organization is actively trying to keep young talent, we can assume that focus lies upon the practicality of assigning a senior to every junior, not the other way around.

Promoting the organizational culture might not be possible outside of the organization, due to regulations from above. It should, however, be promoted in such a manner that the employees can identify with and share the ideals of the organization from within.
It is difficult to assume that the organization can rely solely on the intrinsic motivation of the employees by adding more structure and responsibility. While the benefits might be thoroughly communicated, it might not be wise to assume that everyone feels the same. Thus making it an unreliable source of motivation by itself. This was evident by the lacking frequency of the voluntary formal opportunities, which was initiatives based upon intrinsic motivation. Extrinsic motivation in terms of rewards could, therefore, act as a more reliable source since it is based upon factors more easily controlled by management. Why the knowledge sharing is happening is irrelevant if there are no opportunities to share knowledge, how over why.

6.3 Methodological criticism
As to keep the confidentiality of the report, there had to be some sacrifices regarding the reliability. The respondents were, among other things, asked about what they felt regarding how things were done at the organization, more or less questioning their employer. Thus making it crucial to emphasize that the confidentiality of the recordings and transcripts were of the highest priority. It is therefore unclear how the results would have changed if multiple researchers would’ve been able to analyze the data. Due to the nature of the questions, it was also important to get to know the employees prior to the interviews to create a relaxed atmosphere and thus raising the reliability of the answers. Being present at the organization, together with the purpose of this study being public knowledge for the employees, could however have resulted in inconsistent data depending on at what time of the study the data was collected. As there has also been a lot of meetings, interviews, and conversations that were not recorded, the results could have ended up being indirectly affected by the undocumented possession of knowledge.

Regarding the selection of developers that were interviewed for this study, there were no women participating. Seeing as there was only one woman out of all the developers at this specific branch of the organization, it would probably have been interesting to get her personal thoughts regarding the research question. The selection of developers was overall quite homogenous in character. As one of the most noticeable aspects of organizational culture being the age difference, it would have also been interesting to get the perspective from the senior employees as well.

The amount of people participating in this study makes it difficult to create any statistically trustworthy conclusions. Some of the results analyzed are also based upon the collective answers of different amount of respondents, thus resulting in some conclusions being seen as more valid than others.
When conducting semi-structured interviews regarding personal perception and feelings, there is always the possibility that the respondents might interpret the questions differently. The responses themselves were further translated from Swedish to English and then summarized, which could have resulted in both misinterpretations and mistranslations.

It should be stated that most of the conclusions made by this study could certainly be applied to an organization outside of the IT sector. However, as the study was performed at an IT-consultant organization, the aim was decided to remain. It would have been interesting to compare the conclusions on an inter-organizational level between different sectors, to understand how (and if) IT-consultant organizations differ from the rest.

Some sources used in this study could also be deemed outdated, due to overlooked advancements made within its respective field.

### 6.4 Future research

As this study was performed, using qualitative methods, with the purpose of understanding how employees were introduced to the aspects of knowledge sharing and how it was further managed. A future research should, most reasonably, be done by initially following up and verifying the suggested conclusion. As organizational structures and culture tend to differ, it would also be of interest to test these theories on a larger scale using more of a quantitative approach to complement the qualitative methods.

It would have been interesting to compare Ipe’s (2003) factors of knowledge sharing with other theoretical models, to see if there are any other influential factors that might have been disregarded or if there are any theoretical models that might be better applicable to this study.
References


Appendix 1: Interview Questions

As the interviews were held in Swedish, the following questions will be in its original form.

- Akademisk bakgrund?
- Tidigare arbetserfarenhet?
- Hur länge har du arbetat hos företaget?
- Typisk arbetsdag?
- Bästa, respektive sämsta med jobbet?

- Varför sökte du till företaget? Hur hittade du företaget?
- Hur var introduktionen till företaget?
- Fanns det något mentorskap inblandat?
  - Hur fungerade det isåfall?
- Saknade du något under din introduktion?
- Kan du beskriva kulturen på företaget?

  Hur tar du del av den information du behöver?
- Vad gör du när du fastnar eller behöver hjälp?
- Hur anser du att kunskapsdelningsprocessen fungerar på företaget? Vad är kunskapsdelning för dig?
- Hur känner du att du delar information och kunskap idag?
  - Vart sker det största utbytet?
- I vilken mån skulle du kunna tänka dig bidra? Finns det ett intresse?
- Vad för typ av information skulle du vara intresserad av? Vad skulle vara hjälpsamt?
- Finns det något du saknar? Något du skulle vilja se mer utav?