

Ådne Sandnes
Trond Eivind Eliassen

BI Norwegian Business School - Master Thesis

Leadership culture, knowledge transfer and
performance in the context of a large Norwegian
multinational corporation.

Date of submission:

01.09.2014

Supervisor:

Paulina Junni

Exam code and name:

GRA 19003 – Master Thesis

Program:

Master of Science in Business and Economics

Strategy

This thesis is a part of the MSc programme at BI Norwegian Business School. The school takes no responsibility for the methods used, results found and conclusions drawn.

Acknowledgements

This master thesis marks the accomplishment of our Master of Science in Business and Economics degree at BI Norwegian Business School BI Oslo.

We are truly grateful for the opportunity to write our master thesis as a part of a research project at the department of Strategy and Logistics, which has been an interesting and challenging experience. We would like to extend our gratitude to the department and Associate Professor Ragnhild Kvålshaugen for introducing us to the project as well as support along the way. We would also like to extend our greetings to the participants in the survey who willingly used their precious time to provide us with valuable information and insights.

We would especially like to express our deepest gratitude to our supervisor Paulina Junni for all the useful insights, valuable feedback and engagement throughout the entire process of this master thesis. Her patience, knowledge and motivation guided us in all the time of research and writing.

We also want to thank our family and friends for all their support throughout this process and the continuous encouragement and help the last 5 years we have studied at BI Oslo.

Oslo, September 22nd 2014

Ådne Sandnes

Trond Eivind Eliassen

Executive summary

Organizational knowledge transfer is argued by several researchers to be an important tool for increasing organizational performance and could be the source of a sustainable competitive advantage. Knowledge transfer in multinational corporations (MNCs) is considered as especially important because it is argued that MNCs exist primarily because of their superior ability to transfer knowledge effectively and efficiently throughout its various units that are located in different parts of the world. Despite of the fact that several researchers highlight knowledge transfer as an important factor for increasing performance, the empirical studies that have actually examined the explicit link between knowledge transfer and performance have found mixed results (van Wijk, Jansen and Lyles 2008).

Moreover, the process of knowledge transfer is complicated, which has inspired several researchers to examine the influencing factors on the process of knowledge transfer. Studies that have investigated knowledge transfer have identified a multitude of influencing factors on the process that could either enable or disable effective knowledge transfer. Several of the identified factors have been extensively studied, but organizational culture as an influencing factor has received less critical research attention and there is a lack of studies that empirically investigate the effect organizational culture might have on knowledge transfer. Furthermore, the transformational and transactional leadership cultures are two interesting culture profiles which have received little research attention in the existing literature. No other studies have investigated the relationship between these two leadership cultures and inter-unit knowledge transfer in MNCs. In this study we first examine the explicit link between inter-unit knowledge transfer and unit performance, and secondly we examine the link between the transactional and transformational culture and knowledge transfer.

To examine these links we test our hypotheses in the context of a large Norwegian MNC that operates as consultants in the oil and gas industry, where we analyze 66 units located in various parts of the world. Our results show that inter-unit knowledge transfer has a positive and significant effect on unit performance, and that the transformational culture has a positive significant effect on inter-unit knowledge transfer. The transactional culture on the other hand had no significant effect on inter-unit knowledge transfer. Our findings have important implications for both managers and academics. Managers in MNCs should encourage and

facilitate inter-unit knowledge transfer, as this could potentially lead to better performance. And that the managers should consider fostering a transformational culture if their aim is to increase inter-unit knowledge transfer. Our research is a first step in the direction of getting a more comprehensive understanding on how the two leadership cultures influences inter-unit KT in an MNC, but more research needs to be in place before we can be certain about its actual effect. Future research and academics should develop the Organizational Description Questionnaire (ODQ) as well as our proposed research model further and empirically investigate more closely why and which aspects of the transformational and transactional culture that actually influences knowledge transfer. That is, how the “Four I’s” and the “Contingent Reward and Management By Exception” that are used to describe the two leadership cultures actually influences knowledge transfer.

Table of Contents

Executive summary	iii
1. Introduction	1
1.1 Background.....	1
1.2 Purpose and Research Questions	6
1.3 Research setting and scope	8
2. Literature Review and Hypotheses.....	9
2.1 Intra-Organizational Knowledge Transfer.....	9
2.1.1 Knowledge Transfer and Performance	10
2.2 Determinants of KT	12
2.2.1 Actor-related elements of KT	13
2.2.2 Knowledge-related elements of KT	16
2.2.3 Mechanisms for KT	17
2.3 Culture as an Influencing Factor on KT	19
2.3.1 Leadership Culture.....	24
2.3.2Transformational Culture.....	25
2.3.3 Transactional Culture.....	29
3. Research methodology.....	32
3.1 Research strategy	32
3.2 Research design	33
3.3 Methods	34
3.3.1 Data collection.....	34
3.3.2 Measures of concepts.....	36
3.4.3 Data analysis.....	41
4. Results	48
4.1 Correlation analysis	48
4.2 Regression analyses	49
5. Discussion and managerial implications.....	51
6. Limitations and implications for future research.....	56
Reference list	60
Appendix 1: Measurements of variables	68
Appendix 2: Preliminary Master Thesis Report	72

Figures and tables

Figure 1: Research model.....	8
Figure 2: The knowledge transfer process.....	13
Table 1: Cronbach’s alpha of constructs.....	41
Table 2: Correlation coefficients among all variables under study.....	45
Table 3: Regression 1 results. Dependent variable: unit performance	48
Table 4: Regression 2 results. Dependent variable: KT.	49

1. Introduction

1.1 Background

Knowledge transfer (KT) is a topic within the larger field of the knowledge management literature that has received an increasing amount of attention during the last two decades (van Wijk, Jansen and Lyles 2008). KT has been identified by researchers as a critical determinant for many organizations' survival and success (Argot and Ingram 2000; Gupta and Govindarajan 2000, a), and it has become increasingly popular to study the various issues that are reported to influence the process of KT. A large number of researchers within the knowledge based view proclaim knowledge as the most important and valuable resource of modern day organizations (Grant 1996; McEvily and Chakravarthy 2002), and that organizations' main purpose for existence is to create, transfer and transform knowledge into a competitive advantage (Kogut and Zander 1992). Such statements, combined with a business environment that is characterized as highly specialized, globalized, rapidly changing and complex, has made both managers and academics interested in understanding how knowledge can manifest itself into a competitive advantage (Easterby-Smith, Lyles and Tsang 2008). Operating in such a business environment puts pressure on organizations to constantly develop and adopt the best and most relevant knowledge available in order to cope with the intense global competition and rapid changes. Knowledge transfer is basically an exchange of knowledge between two actors (Dyer and Nobeoka 2000), and has been identified as a tool that organizations can utilize to get access to and spread valuable knowledge rapidly between actors within an organization.

Researchers have also argued the importance effective KT might have on organizational performance, where Texas Instruments for example, managed to generate \$1,5 billion more in fabrication in part by transferring and comparing knowledge between 13 of their fabrication facilities (O'Dell and Grayson 1998). When knowledge is transferred effectively between actors within an organization, organizations can reap benefits for example in the form of cost reductions, increased productivity and innovations, which translates into better organizational performance. Studies on KT are therefore an important topic of research that deserves critical research attention. There is a general opinion among researchers who argue that effective KT is positively related to performance (Argot and

Ingram 2000), while other researchers also argue that this might not always be the case (Pedersen, Petersen and Sharma 2003). Although multiple researchers make theoretical claims and argue that KT is an important determinant of organizational performance, the empirical evidence of this relationship have shown mixed results and is why we want to take another look at this link in the case of an MNC.

Even though KT sounds like a simple process it is in fact extremely complicated and requires a lot of resources and effort in order to perform it effectively. Given its importance and highly complex nature it therefore exist an enormous amount of literature that investigate various antecedents, consequences, issues, elements and dimensions related to successful KT (Easterby-Smith, Lyles and Tsang 2008; van Wijk, Jansen and Lyles 2008; Becker and Knudsen 2006). It has become increasingly popular among researcher within the field of KT to investigate the factors that might influence KT, where researchers have identified a multitude of factors that either enables or disables effective KT (Argote 1999; Eisenhardt and Santos 2002; Szulanski 2003). A more thorough and comprehensive understanding of the various factors that are prescribed to influence KT might help organizations and managers to overcome challenges related to KT.

As an example of the magnitude of factors that have been reported as enablers or disablers of KT, Minbaeva (2007) reviewed previous studies that investigate the influencing factors of KT and identified as many as 90 different determinants of KT. Similarly, van Wijk, Jansen and Lyles (2008) also reviewed a large number of articles which examined the influencing factors of KT and reports a multitude of determinants of KT. Therefore, in order to simplify and make sense of the various factors that influence KT, it has been common categorize the various factors according to some of the most important elements involved in KT (Davenport and Prusak 2000; Minbaeva 2007). These are reported as factors influencing the sender and receiver of the knowledge (actor-related), the knowledge itself (knowledge related) and the mechanisms for KT (Argote 1999; Eisenhardt and Santos 2002; Szulanski 2003; Minbaeva 2007). The actor-related factors deal with the characteristics of the actors that engage in KT, where researchers have emphasized that factors like absorptive and retentive capacity, the motivation and willingness of the actors, and the relationship between actors could either enable or disable effective KT (Eisenhardt and Santos 2002; Minbaeva et al. 2003; Szulanski 1996). The knowledge-related factors that have

been extensively studied deal with the characteristics and nature of the knowledge itself (Minbaeva 2007; van Wijk, Jansen and Lyles 2008), where for example tacit knowledge has been reported as more difficult to transfer than explicit knowledge (Nonaka 1994). Some of the mechanisms for KT that are reported in the literature include transmission channels for transferring different types of knowledge, and integrative mechanisms that facilitates social interaction and communication (Kim, Park and Prescott 2003; Gupta and Govindarajan 2000, a). Several of the influencing factors in these three categories have been extensively studied and have received much research attention during the last two decades, where it exists a relatively large number of both empirical and theoretical studies in the literature (Eisenhardt and Santos 2002; van Wijk, Jansen and Lyles 2008; Foss and Pedersen 2004; Becker and Knudsen 2006). However, one factor that has received less attention in the existing literature, despite of being identified as an important enabler/disabler of KT, is organizational culture (Goh 2002; Alavi, Kayworth and Leidner 2006).

Organizational culture consists of the shared values, believes and assumptions of organizational members, which influence and determine their behaviors and attitudes (Schein 2010). That organizational culture is an important determinant of KT is further emphasized by DeLong and Fahey (2000) in their conceptual article. They claim that the whole process of knowledge management, which consists of knowledge transfer, creation and retention, is conditioned by the organizational culture, since it guides and influence how organizational members think and behave with regards to KT (DeLong and Fahey 2000). Both Goh (2002) and O'Dell and Grayson (1998) make several convincing arguments on how organizational culture might be an important influencing factor on KT. For example, if individuals are to engage in KT it will require the organization to facilitate this behavior, by allowing and encouraging them to cooperate and trust each other, provide incentives and motivate them to exchange knowledge. Gupta and Govindarajan (2000, b) also states that a crucial requirement for effective KT is to build a social environment and an organizational culture that supports and encourages individuals to actively engage in KT. Thus, one major issue organizations and managers face with regards to KT is to develop and foster an organizational culture that facilitates and encourages organizational actors to engage in KT. Since organizational culture has been proclaimed as such an important influencing factor on KT, we find it puzzling that there seems to be a

gap in the existing literature when it comes to empirical studies that investigate this issue. Furthermore, that there is a need for studies that investigate the issue of organizational culture in relation to KT is neatly expressed in the words of Alavi, Kayworth and Leidner (2006, 193) who state: “Although many studies raise the issue of organizational culture’s influence on knowledge management success, few investigate the way in which this influence manifests itself.” Organizational culture is often argued as a contextual factor that influences the actor-related elements of KT (DeLong and Fahey 2000; Goh 2002; DeTienne et al. 2004), for example by influencing the actors motivation and willingness to engage in KT and the relationship between the sender and receiver of knowledge. A more comprehensive understanding of the relationship between organizational culture and KT is therefore an important and interesting line of research that could help managers to overcome challenges related to KT.

Organizational culture is a broad and complex concept that is very specific to the organizational setting, which makes it difficult for researchers to generalize about the phenomenon across various studies and disciplines (Schein 2010). In order to overcome these difficulties researchers have developed various organizational culture profiles which describe different cultural characteristics and traits that have implications for determining the behavior and attitudes of organizational members (Denison and Mishra 1995; Schein 2010). Bass and Avolio (1993) developed two culture profiles which are referred to as the transformational and transactional leadership culture. These leadership culture profiles were developed in parallel with existing theories about the leadership style and behaviors of organizational leaders (Bass 1985), and are deduced from the theories about the transformational and transactional leadership style. A description of a leadership culture is that the organizational culture can be described by and is influenced by the characteristics of a particular leadership style and is measured and reflected by how the organizational members perceive the cultural environment of their organization (Bass and Avolio 1993). Few studies have conducted empirical investigations on these two specific leadership cultures, where it has been more common to investigate outcomes and effects related to the individual leaders and their leadership style (Bass 1999). In relation to KT, only a few researchers have highlighted leadership style as an important enabler or disabler of KT, and some of these claims that certain leadership styles are considered as more appropriate for KT than others (Politis 2001; 2002; Singh

2008; Bryant 2003). Analoui, Doloriert and Sambrook (2013) find empirical support that indicates that both the transformational and transactional leadership styles have a direct influencing effect on KT. This gives indications to believe that there is a direct effect between leadership style and KT, where one could assume that if you wanted more KT in an organization, it was simply a matter of employing leaders that have a style that support KT. However, we argue that there is more of an indirect effect between leadership style and KT. This line of thought is deducted from the study of Ogbonna and Harris (2000) where they investigate the effect leadership has on performance through the mediating effect of organizational culture. They find empirical evidence that support their claims that the leadership style has a significant influence on shaping the characteristics of the organizational culture. This means that the leadership style in an organization is predicted to influence the organizational culture and its characteristics, which again influence the behaviors and attitudes of the organizational members. Bass and Avolio (1993) and Schein (2010) make similar arguments about the relationship between leadership and organizational culture, where they claim that the leadership style influences organizational culture and vice versa. It is therefore possible to describe the organizational culture with the characteristics of a certain leadership style, which is why these culture profiles are labeled as leadership cultures (Bass and Avolio 1993). We are therefore not interested in examining leadership styles per se; our interest is rather to examine the relationship between the transformational and transactional cultures and KT. So, instead of focusing on the individual leaders and their leadership style and behavior in an organization we are interested in examining how the organizational members perceive the leadership culture in their organization, as either transformational or transactional, and examine if the two leadership cultures are significant influencing factors on KT.

The transformational and transactional cultures are distinctly different from each other and are described by almost the opposite characteristics and traits, which leads to distinctly different assumptions on how they are expected to influence various organizational issues and outcomes (Bass and Avolio 1993). With regards to KT, very little is known in the existing literature when it comes to how the transformational and transactional cultures affect KT and even if they affect KT at all. Bass and Avolio (1993) provides a relatively unstructured description of the typical characteristics displayed in the two different leadership

cultures, we therefore aim to conceptualize how some of the characteristics might affect KT, mainly through their influence on determining the actor-related conditions for KT. We therefore need to rely on previous studies that have investigated how organizational culture in general influence the actor-related conditions for KT and make assumptions on how their findings might translate to the characteristics used to describe the transformational and transactional culture.

However, as we have already pointed out, very little is known about the relationship between Bass and Avolio's (1993) two leadership cultures and their effect on KT both in theoretical and empirical terms. The aim of this study is therefore to conduct an empirical investigation of the relationship between the two leadership cultures and KT, where we want to test whether or not these two leadership cultures could be considered as important influencing factors on KT. Our study will therefore contribute to the existing literature by conducting one of very few empirical examinations of Bass and Avolio's (1993) two leadership cultures in general, which could inspire others to do more empirical examinations that test these two very interesting leadership cultures. More specifically we will contribute to the literature by providing a novel approach on how to investigate the effect organizational culture might have on KT. These two leadership cultures provide a rich and broad conceptualization about how the organizational culture might influence the organizational members' behaviors and attitudes towards KT. A better understanding of this relationship could be of great value to managers by enabling them to more fully understand and overcome cultural challenges related to effective KT.

1.2 Purpose and Research Questions

In the above section we have discussed that effective KT could potentially lead to a sustainable competitive advantage and is argued to be an important organizational tool for achieving increased organizational performance. Although several researchers have conceptually demonstrated the importance KT might have for increasing organizational performance in various settings, this notion have not been fully supported in terms of empirical examinations. We have also rendered some of the various influencing factors that are frequently studied in relation to KT and given a short description of how they might influence KT. Moreover, the above section identified a gap in the literature when it comes to the influencing factors on KT, where researchers highlighted organizational culture as

an important influencing factor on KT that has received little critical research attention. After a closer examination of the literature on the relationship between organizational culture and KT, we discovered an alternative and interesting conceptualization of the organizational culture concept which describes what has been termed as leadership cultures. The transformational and transactional cultures provide a broad and rich description of how organizational members perceive and is influenced by two distinctly different leadership cultures. The two leadership cultures are described with nearly the opposite characteristics and are therefore expected to influence KT in different directions. We also noticed that very few researchers have conducted any empirical examination of the two leadership cultures, and even fewer when it comes to their effect on KT, which represents yet another gap in the literature.

The main purpose of this study is therefore to address these two gaps in the literature by conducting an empirical examination that first establish if it really is the case that KT is a significant influencing factor on organizational performance. Secondly, we want to examine if the two leadership cultures could in fact be considered as significant influencers or determinants of KT. The findings of this study are therefore expected to be both helpful and valuable for organizational managers as it could enrich their understanding of how the leadership cultures might influence KT. This could help them to overcome cultural challenges related to KT and encourage them to pay more attention to fostering and developing a social environment that facilitates and encourages organizational members to engage more actively in KT, which is expected to impact the performance of the organization.

Based on the discussions above, the main purpose of this study is to address and answer the following research questions:

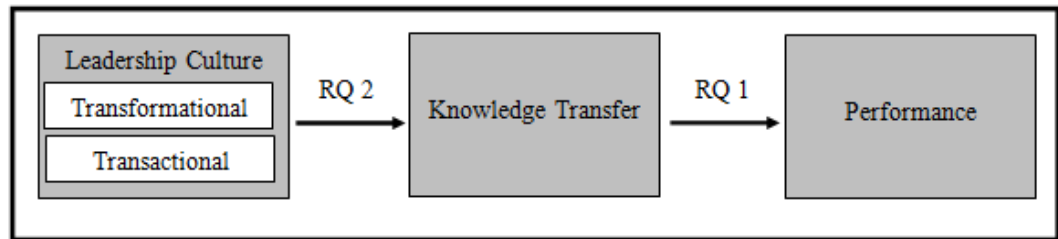
RQ 1: *How does knowledge transfer influence organizational performance?*

RQ 2: *How does the transformational and the transactional culture influence knowledge transfer?*

The research model below graphically displays the links and relationships this study is interested in examining more closely. In the next section we will introduce the research setting and scope of this study, where we define the level of

analysis and present more specifically what setting and terms we have found to be most beneficial for answering these two research questions.

Figure 1: Research model



1.3 Research setting and scope

In the following section we will briefly describe the research setting and level of analysis we have found most beneficial for conducting this study, as well as specifying the concepts we are interested in examining in a more explicit manner. Given the objectives of this paper we chose the research setting based on two criteria. First, we chose a setting where KT is utilized as an important tool for improving organizational performance. Second, we chose the setting where the participants are characterized as knowledge intensive workers, meaning that they are highly dependent on their intellectual capital, i.e. knowledge, for conducting their work (Von Nordenflycht 2010). Based on the two criteria above we ended up with choosing a large Norwegian based multinational corporation (MNC), where the workers mostly operates as consultants in the global energy industry and are therefore dependent on constantly renewing their knowledge to perform better. An MNC is an organization that consists of a corporate headquarters and multiple organizational units that are geographically dispersed and located in various countries around the world (Kim, Park and Prescott 2003). Moreover, the context of an MNC was chosen since one of the primary reasons for MNC’s existence is because of their ability to transfer and adopt knowledge more efficiently and effectively between the different units within the MNC, than they could have otherwise by utilizing external markets to adopt new knowledge (Gupta and Govindarajan 2000, a). Furthermore, KT in an MNC has been identified as an efficient tool for increasing the productivity and improving the quality of various organizational processes by transferring and adopting the best practices between organizational units (Minbaeva 2007). Therefore, it is also reasonable to expect that if a unit engage in more KT and manages to improve its internal working by adopting new knowledge, it is likely that this will influence that unit’s

performance.

In order to examine if the two leadership cultures are significant influencing factors of KT within an MNC, we are going to measure the leadership cultures in each unit and examine if they influence the degree of knowledge inflows into various organizational units. Thus, the level of analysis for this study is on the unit level, where we are going to examine each unit's leadership culture, degree of KT and performance.

In this section we have explained the rationale and purpose of this study, where we have identified the gaps in the existing literature, explained our proposed model and presented our research question. The next section presents the relevant literature and hypotheses for our analyses and research questions. Thereafter we go through the research strategy and methods we have used to answer our research question, before we turn to presenting our results and findings. This part is followed up by a discussion of our findings as well as some limitations of this study. The concluding section provides a discussion about the implication of this study as well as some suggestion for future research.

2. Literature Review and Hypotheses

In the following chapter we will first present literature on the concept of KT, where we define the concept, discuss literature that investigates the effect KT has on performance and develop our first hypothesis. Then we discuss some of the most frequently reported influencing factors of KT before we introduce the concept of organizational culture in general and presents some literature that has investigated its effect on KT. Thereafter, we describe the transformational and transactional cultures and develop our hypotheses based on how we expect these leadership cultures to influence KT.

2.1 Intra-Organizational Knowledge Transfer

KT has been defined in multiple ways by several authors, and has often been used synonymously with other related terms like; knowledge and information sharing, knowledge absorption, adoption and acquisition, knowledge coordination and integration, knowledge flows, knowledge diffusion and dissemination (van Wijk, Jansen and Lyles 2008). This has according to some scholars created confusion about the terms and concepts under investigation when discussing the KT

literature (Paulin and Suneson 2012). In order to avoid such confusion, this section provides a clear definition of the concept which we have deemed relevant for our study.

One definition of KT that has been frequently cited is the one suggested by Argote and Ingram (2000) where they define organizational knowledge transfer as “ the process through which one unit (e.g., group, department or division) is affected by the experience of another”. Another famous researcher in the field of KT is Szulanski (2003), and he describes the process of knowledge transfer as a dyadic exchange of knowledge between a sender and a receiver, where the effectiveness of the transfer is dependent on the characteristics of the sender and receiver, the knowledge itself and the context of the transfer. Moreover, Szulanski (2003) and Minbaeva et al. (2003) argues that the process of KT has no value or is not completed before the receiving actor adopts the transferred knowledge. This is similar to the above definition by Argote and Ingram (2000) that states that one unit is affected by the experience of another. By drawing on the definitions and descriptions above, we have therefore chosen to define KT as a process of transferring a specific type of knowledge from one actor to another, where the process is completed when the receiving actor adopts the transferred knowledge.

2.1.1 Knowledge Transfer and Unit Performance

Given the purpose and research question of our study where we want to examine if the KT in one unit influences that unit’s performance, this section reviews some of the literature that has discussed the relationship between KT and organizational performance.

As it is discussed in the introduction of this paper, the dominant view among researchers within the field is that effective KT leads to increased organizational performance (van Wijk, Jansen and Lyles 2008). When organizations are able to disseminate knowledge effectively between organizational units it could improve the units’ productivity, lead to innovations and increase the likelihood of survival compared to organizations that do not engage in KT. A unit that does not engage in KT will have to rely on existing knowledge and will not get access to the knowledge that other units possess, which potentially could have improved its processes, activities and ultimately its performance (Argote and Ingram 2000). Szulanski (1996) argues similarly where he claims that effective KT helps

organizations and organizational units to spread and get access to new capabilities, skills and competencies that could be critical for improving performance, which could be difficult to obtain without adopting it from organizational units. O'Dell and Grayson's (1998) theoretical study further demonstrates the importance of KT for increasing performance, as an example they explain how the large American oil and energy company, Chevron, managed to dramatically reduce its operating cost structures by improving and focusing more on internal transfer of knowledge between its organizational units.

However, because KT is a complex and resource demanding activity, the cost of transferring knowledge might be substantial and directly impacts the financial bottom line of organizations. Pedersen, Petersen and Sharma (2003) claims that KT in MNC's often leads to negative performance, because the cost and difficulty of transferring is often underestimated and can easily outweigh the benefits it brings along. Most researchers tend to focus on all the potential benefits KT might have on various organizational outcomes without considering the potential downsides. Decisions about engaging in KT should therefore be based on realistic and conservative estimates of both benefits and costs and be analyzed as a trade-off decision.

On the other hand, most researchers are very enthusiastic when considering the potential upsides KT might have on performance especially in relation to MNCs. Some authors take it even a step further when they claim that effective KT can lead to a sustainable competitive advantage (Gupta and Govindarajan 2000, a; Kogut and Zander 1992; Szulanski 1996). These argumentations builds on the knowledge based view, which claims that knowledge can be the source of a competitive advantage if the knowledge has certain characteristics that makes it difficult for competitors to imitate and is socially complex (Grant 1996; McEvily and Chakravarthy 2002). One famous example that demonstrates how an organization has managed to develop and transfer superior knowledge that has resulted in a sustainable competitive advantage is Toyota (Dyer and Nobeoka 2000). Toyota managed to successfully create and implement an extremely effective and efficient system, Toyota Production Systems (TPS), for manufacturing cars, and with this they were in possession of superior knowledge vis a vis their competitors. They managed to transfer and implement this knowledge about TPS effectively throughout their organization and to their foreign subsidiaries. They did this without having

spillovers to their competitors because of the highly complex and specific nature of the knowledge. In this way they managed to gain a sustained competitive advantage over their competitors for several years (Dyer and Nobeoka 2000). IKEA is another well known example of an organization that has managed to gain a competitive advantage and increase their performance by effectively transferring knowledge throughout their organization (Jonsson and Elg 2006).

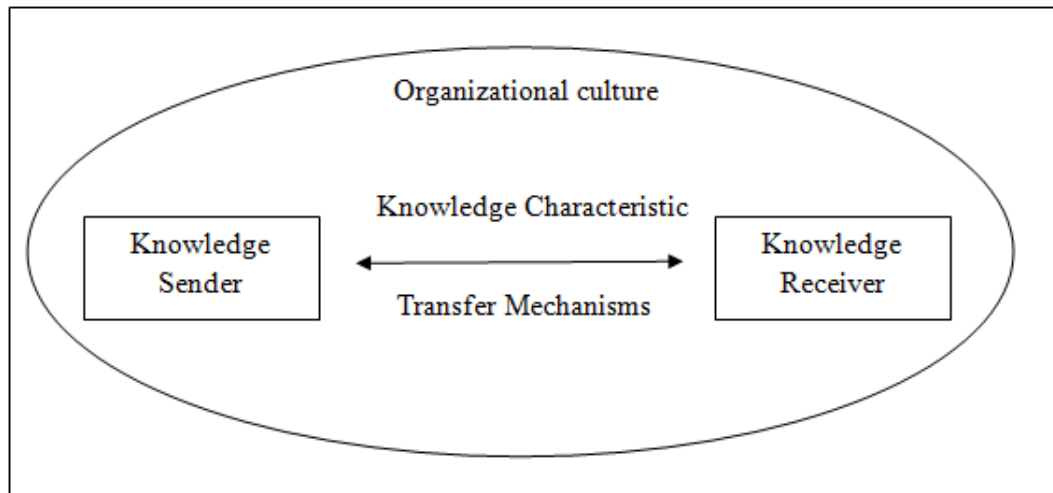
Based on the argumentation and examples above, we therefore expect that there will be a positive relationship between the degree of unit KT and unit performance. An MNC exist because of its ability to enhance its performance by exploiting and disseminating the knowledge that resides in the various units. And one would expect that those units in an MNC who takes advantage of this possibility and adopts relevant knowledge from other units that they can use for their operations and daily routines will increase their performance. Therefore we propose hypothesis 1:

Hypothesis 1: *Inter-unit KT influences unit performance positively*

2.2 Determinants of KT

Since KT might be an important influencing factor on unit performance in MNCs, we are interested in understanding more fully which factors and determinants that have been highlighted as important enablers and disablers of the KT process. The figure below displays the process of KT and highlights important elements to consider when MNCs are trying to achieve effective inter-unit KT. From our definition KT is viewed as a process of communication that consists of a knowledge sender and receiver. The effectiveness of the process is conditioned upon the characteristics of the sender and receiver (actor-related), the characteristics of the knowledge (knowledge related), the mechanisms for KT and the organizational culture. The first three elements have frequently been reported and extensively studied as influencing factors or antecedents of the KT process (Eisenhardt and Santos 2002; Szulanski 2003; Minbaeva 2007), while organizational culture as an influencing factor on the process of KT have received less attention in the current literature and thus represents a gap in the literature (Alavi, Kayworth and Leidner 2006). In the following sections we will introduce and discuss each of these elements and their effect on the KT process.

Figure 2: The knowledge transfer process



(Adopted with modifications from Minbaeva 2007. Our figure displays slightly different elements than the actual model developed by Minbaeva 2007, where we have left out disseminative and absorptive capacity because they are included and discussed in the actor related elements, and are not of particular interest in our study. We also substituted “organizational context” with “organizational culture” because our study is primarily interested in organizational culture and not the broader concept of organizational context which includes other influencing factors as well as culture. We also added “transfer mechanisms” in order to provide a figure that structures and displays the elements this study is particularly interested in examining closer).

2.2.1 Actor-related elements of KT

Similar to Davenport and Prusak (2000) who describe KT as a two-way communication process, we also view the KT process as a two-way action, both an act of sharing or sending knowledge and an act of receiving or adopting knowledge. In this way it becomes clear that KT is a process that includes two actors, a sender and a receiver, where these organizational actors could be an individual, a team, a group, a unit, or an organization. For the purpose of this study we define the sender and receiver of knowledge as organizational units within an MNC. In our analysis, we are especially interested in the receiving actor since our definition emphasize that the process of KT is not completed before the knowledge is adopted by the receiver and also since we expect that unit performance most likely is influenced more by the adopting act than the sharing act of KT. This is simply because if a unit shares valuable knowledge with others it will not contribute directly to influence that unit’s performance, but if a unit adopts valuable knowledge from others it might contribute directly to its performance. Furthermore, the characteristics of both the sender and receiver, and

the relationship between them have been found to influence KT in various ways which we will elaborate more on in the sections below.

Characteristics of the Sender

The literature in the field suggests that there are particularly three characteristics of the sender that could hinder the process of KT (Eisenhardt and Santos 2002). These are: lack of motivation from the sender, that the sender is not perceived as reliable or credible by the receiver and lack of disseminative capacity of the sender (Szulanski 2003; Minbaeva and Michailova 2004). There are various reasons as to why the sender lacks motivation for sharing its knowledge with others. It could be that the sender is reluctant to share his knowledge in fear of losing ownership or losing its superior position and then becomes dispensable. Another reason is that the sender might believe that he will not be compensated enough or given proper recognition for transferring knowledge. The sender's attitudes toward the receiver might also influence the senders motivation to engage in KT, or it could be simply that the sender is not willing to put in the time and resources required for accomplishing the transfer as it diverts attention away from the main mission or task of the sender (Eisenhardt and Santos 2002; Szulanski 2003). The second characteristic is whether the sender is perceived as a credible or reliable source, i.e. if the sender is perceived as being a knowledgeable and trustworthy expert that might contribute with novel and valuable knowledge (Szulanski 2003). If the knowledge sender lacks credibility and is perceived as unreliable and not trustworthy, then that might prove to be a significant barrier to effective KT (Minbaeva 2007). The last characteristic of the sender deals with the disseminative capacity of the sender, which is simply whether the sender has the ability, is willing and has the resources necessary for transferring knowledge to another actor (Minbaeva 2007). Lack of disseminative capacity has been identified as a barrier to effective KT (Minbaeva and Michailova 2004).

Characteristics of the Receiver

Similar to the characteristics of the sender, the receiver or target of the transfer might also exhibit traits that are likely to either enable or disable effective KT. Especially three characteristics are reported as being significant barriers of KT when it comes to the receiver. These are lack of motivation, lack of absorptive capacity and lack of retentive capacity. The first is similar to the discussion above

about the lack of motivation, and is simply that the receiver is reluctant to engage in KT for various reasons (Eisenhardt and Santos 2002). One reason in particular which is often highlighted in the literature is that the recipient is unwilling to adopt the knowledge due to the so called “Not Invented Here” (NIH) syndrome (Szulanski 2003). The NIH syndrome could arise because the receiver might be unwilling to praise and give recognition to the work of others, that there is strong rivalry between the sender and receiver, that the receiver engages in hidden sabotage or that there is jealousy between the actors (Cohen and Levinthal 1990). The second characteristic of the receiver that is often predicted to lower or hinder effective KT is that the recipient lacks absorptive capacity (Minbaeva 2007). Absorptive capacity reflects the receiver’s ability to learn and exploit the external knowledge that is to be transferred, and this ability is a function of the prior existing knowledge, experience, competences, skills and resources of the receiver (Cohen and Levinthal 1990). At its simplest form absorptive capacity may include a shared language and basic skills that are necessary in order for the receiver to understand what is going to be transferred (Minbaeva et al. 2003). For example, if a Chinese head quarter is going to teach a Norwegian subsidiary how to operate a specific machine through the use of a manual that is written in Chinese and there are no people with any Chinese language skills at this subsidiary, there will most likely be major difficulties for the Norwegian subsidiary to adopt this knowledge without having the manual translated to a language that the Norwegian subsidiary understands. The more complex, specific and tacit the knowledge is, the greater the need for higher absorptive capacity on the recipients part in order to succeed with the KT (Minbaeva et al. 2003; Cohen and Levinthal 1990). The last characteristic of the recipient that might hinder effective KT is that of retentive capacity (Szulanski 2003). Retentive capacity is simply the receiver’s ability to retain, store or internalize the transferred knowledge so that it can be applied on later occasions. Lack of retentive capacity would disable KT since the process of KT is not completed before the transferred knowledge is institutionalized or retained by the receiver so that the knowledge is made available for later use (Szulanski 2003).

The sender- receiver relationship

As discussed in the above section, the characteristics of the actors in the KT process will have an effect on KT by determining their motivation and willingness

to engage in KT. Moreover, another actor-related determinant of KT is the characteristics of the relationship between the sender and receiver (Tsai 2001; Levin and Cross 2004). The process of KT is seldom only a singular event, meaning that it is an iterative process where the actors communicate and interact in a series of events and episodes. Based on current and previous interactions, the actors form an opinion of each other and their relationship, where they assess the tie strength based on the intimacy and trust of the relationship and the ease of communication and cooperation (Szulanski 2003). Strong inter-unit ties and close relationship between units have been suggested as particularly important for easing the process of transferring tacit knowledge (Hansen 1999; Reagans and McEvily 2003). If the relationship between the sender and receiver is characterized as arduous then this means that it is a demanding and difficult relationship that is reported to create additional hardship and impede effective and successful KT (Szulanski 2003). For example, for effective KT to occur between different units in an MNC, the inter-unit relationship should preferably be characterized with characteristics that are compatible with KT, i.e. high levels of trust, collaboration, social interaction and low levels of hostile and negative attitudes towards others.

2.2.2 Knowledge-related elements of KT

Another important element to notice when discussing KT is to identify the type or characteristics of the knowledge that is going to be transferred. The most common distinction in the literature is to distinguish between what Michael Polanyi (1967) introduced as the terms tacit and explicit knowledge, which Nonaka (1994) expanded further several years later. Explicit knowledge is often referred to as codified knowledge and is characterized as knowledge that is easy to articulate and observe, free of context, has a universal character, and is transferrable through a formal systematic language (Nonaka and von Krogh 2009). An example of transferring explicit knowledge is when a teacher teaches a student how to multiply. This type of knowledge has a universal character and can be transferred through a formal systemic language. Tacit knowledge, on the other hand, is much more complicated to articulate and observe and often has a personal character. This type of knowledge also displays high degree of specificity as it is deeply attached or rooted in action and context. One example of tacit KT could be how to teach someone to ride a bicycle, it is hard to explain exactly how this is done

through a formal systemic language and it is highly experience based and rooted in action. However, once you get the hang of it seems so easy, but it is hard to articulate exactly how you absorbed the knowledge that made it possible. The characteristics and attributes of the knowledge that is being transferred are by some authors claimed to be the primary determinants of effective KT (Zander and Kogut 1995). Whether the knowledge has a high degree of tacitness or not will have an impact on the KT process (Nonaka 1994). This line of thought is confirmed empirically by Zander and Kogut (1995) where they found that knowledge that is hard to codify and teach to others in an explicit manner (high degree of tacitness) took more time and resources to transfer than explicit knowledge. Another characteristic of the knowledge that has been frequently studied as an influencing factor on KT is the concept of knowledge ambiguity or causal ambiguity of knowledge. Causal ambiguity occurs when the knowledge has characteristics that increase the uncertainty and difficulty of identifying and recognizing what the precise underlying knowledge components are (Reed and DeFillippi 1990). When the knowledge is characterized as ambiguous it displays a high degree of tacitness, complexity and specificity, which makes it more difficult to transfer (Reed and DeFilippi 1990).

2.2.3 Mechanisms for KT

As we have already mentioned, one of the primary advantages of MNCs is their superior ability to leverage knowledge effectively and efficiently between units located in various parts of the world. However, in order to achieve effective inter-unit KT in an MNC, certain organizational mechanisms for integrating units needs to be in place (Foss and Pedersen 2004). If for example a unit in an MNC is not integrated with the rest of the organization it will not have any possibility to engage in inter-unit KT simply because it lacks the mechanisms which ensure coordination, communication and exchange with other units. Moreover, KT cannot occur without the existence of transmission channels that facilitates the exchange of knowledge between actors (Ghoshal and Bartlett 1988). The transmission channels for KT can be categorized according to the type of knowledge that is transferred, explicit or tacit, because different transmission channels are more appropriate for transferring one type over the other (Pedersen, Petersen and Sharma 2003; Kim, Park and Prescott 2003). For example, the transmission channels that are most appropriate for transferring explicit

knowledge are technology and ICT based tools like for example intranet, email, databases, common server systems and integrated software applications (Kim, Park and Prescott 2003; Pedersen, Petersen and Sharma 2003). These types of transmission channels are implemented in order to disseminate explicit knowledge throughout the organization and provide all units accesses to explicit knowledge. These transmission channels are the most effective and cost efficient tools for transferring explicit knowledge to the largest amount of organizational actors.

On the other hand, the transmission channels that are most appropriate and best facilitate the transfer of tacit knowledge are based on social interaction i.e. socialization mechanisms (Pedersen, Petersen and Sharma 2003; Lawson et al. 2009). These transmission channels are most appropriate for transferring tacit knowledge because tacit knowledge is embedded in individuals, is difficult to codify and requires human interaction, and is therefore best transferred through socialization (Kim, Park and Prescott 2003). The transmission channels that facilitate tacit KT are often discussed as the formal and informal socialization mechanisms that ties and connects the individuals within an organization together through socialization, which again enables them to transfer tacit knowledge (Gupta and Govindarajan 2000, a; Lawson et al. 2009). The formal channels are described as formal integration mechanisms that are deliberately constructed by the organization to ensure integration and interaction between individuals within an organization, these are for example formal meetings, liaison personnel, permanent committees exchange of personnel and formal job transfers (Gupta and Govindarajan 2000, a; Kim, Park and Prescott 2003; Ipe 2003). The informal channels are described as informal socialization mechanisms, and these are integration mechanisms that are not deliberately constructed by the organization to ensure communication. These informal mechanisms arise and are built on interpersonal trust, familiarity and affinity with other individuals that give rise to self initiated communication between individuals (Gupta and Govindarajan 2000, a; Kim, Park and Prescott 2003). Furthermore the informal integration typically occurs as ad hoc communication and collaboration between actors, and is the spontaneous and day-to-day contact and coordination with other actors. Both the formal and informal socialization mechanisms are found to increase tacit KT between units in an MNC (Gupta and Govindarajan 2000, a; Bjorkman, Barner-Rasmussen and Li 2004; Lawson et al. 2009).

In the sections above we have introduced and discussed various determinants of the KT process which have been extensively researched. We have discussed how the process of inter-unit KT is influenced by the characteristics of the sender and receiver (actor-related elements), the characteristics of the knowledge itself (knowledge-related) and the mechanisms for KT in the context of an MNC. However, as we mentioned in the introduction, one influencing factor on the KT process which has received less research attention is the role of organizational culture. Even though researchers often argue that organizational culture is an important influencing factor on KT, few have conducted empirical investigations on how the influence manifests itself (Alavi, Kayworth and Leidner 2006). Moreover, there is a lack of studies that provide a comprehensive understanding and conceptualization of how organizational culture might influence the process of KT. From our point of view, we expect that organizational culture will exert its influence on the KT process mainly through influencing the actor-related elements of KT. More specifically, organizational culture is expected to influence the actors' motivation and willingness to engage in KT, as well as the relationship between them. We will elaborate more on how we expect organizational culture in general and the leadership cultures to influence the process of inter-unit KT in the section below.

2.3 Culture as an Influencing Factor on KT

The concept of organizational culture has been defined and conceptualized in multiple ways, as a broad reaching construct that influence nearly all aspects of organizational life (Schein 2004). For example, organizational culture has been identified as one of the major determinants of organizational effectiveness, as it shapes and influence the way organizational members' think and act in any given situation (Denison and Mishra 1995). There are numerous definitions of the concept in the existing literature, but this study adopts the definition suggested by Schein (2004), which is perhaps the most frequently used and widely recognized definition in the literature. Schein (2004, 17) defines organizational culture as “a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems”. Organizational culture creates a shared mental model that influences the behaviors

and attitudes of individuals (Schein 2004). Further on, Schein (2004) argues that organizational culture manifests itself in and consist of three cultural layers; artifacts, espoused values and basic assumptions. The artifacts of the organizational culture are the observed organizational practices which may include the physical office space, written and spoken language, jargon. The espoused values of the organizational culture deals with how people reason and rationalize their behavior, and these espoused values consist of the beliefs, norms and operational rules that justify the behaviors of the organizational members. The basic assumptions are the core of the organizational culture and these are the implicit assumptions that actually guide the behavior and determine how members perceive, think and feel about things. The basic assumptions are very difficult to change and are non debatable assumptions that have manifested themselves over several years, and are thus taken for granted and shared by the organizational members (Schein 2004).

Before we explain more thoroughly how organizational culture in general is argued to influence KT, we want to clarify how and on what level we intend to measure the concept of organizational culture in our study. It is important to notice that most previous research has focused on organizational culture as a single and homogenous concept that is shared by and influence all members within an organization equally (Ipe 2003). When comparing two different organizations it makes sense to speak about two distinct and different organizational cultures which are considered as the overall culture of the respective organizations. However, as we are conducting our study in the setting of an MNC which consists of multiple units that are geographically dispersed in various parts of the world, we adopt the same view as researchers who contemplate on the notion that within an organization the culture consists of multiple subcultures, which have their own distinct artifacts, values and assumptions (Lok, Westwood and Crawford 2005). This means that each unit within the organization has its own unique organizational culture that is different from the overall organizational culture, which we will refer to and measure as unit culture. The introduction of subcultures does not violate the notion and arguments regarding organizational culture as a homogenous corporate wide concept, since subcultures are similarly constituted and functionally equal, where the difference is a matter of level or scale (Lok, Westwood and Crawford 2005). This means that the studies which consider organizational culture as a homogenous concept are

still viable and valid for making assumptions about unit culture because it is simply a matter of level or scale difference. Introducing subcultures thus makes it possible to examine and discuss each subunit within an MNC as having its own organizational culture, and more specifically for the purpose of this study each unit has its own type of leadership culture.

From the above definition it becomes evident that organizational culture is an important and powerful determinant for the whole of organizational life, as it shapes, guides, influences and creates mental boundaries on how organizational members should behave, what motivates them, what justifies their actions, how they perceive and make sense of each other (Schein 2004).

It is argued that one way in which organizational culture is critical to determining inter-unit KT, is through its influence on determining the degree of social interaction between and among organizational members (DeLong and Fahey 2000; Goh 2002; Brachos et al. 2007). Previous studies have argued that when actors from different units engage in more inter-unit collaboration and cooperation (social interaction), it would strengthen the relationship between them by increasing the level of trust and trustworthiness between them (Tsai and Ghoshal 1998; Ipe 2003). Trusting relationships and perceived trustworthiness is argued as prerequisites for KT (DeLong and Fahey 2000; Brachos et al. 2007) and is identified as an enabler of effective KT (Levin and Cross 2004). In addition, more social interaction increases the closeness and familiarity between different units and enables them to better assess the credibility, expertise and trustworthiness of each other. Closer relationships, increased familiarity and affinity decreases the negative perceptions and doubts that might arise because of the fear that the other actor might not contribute equally to the relationship, and decreases the potential negative effects that stems from the NIH-syndrome (Cohen and Levinthal 1990; Ipe 2003). When the receiving unit has an organizational culture that considers other units as allies rather than competitors, and when the organizational culture leads the receiving unit to become more open and willing to engage in social interaction with other units this is argued to increase and enable inter-unit KT. (DeLong and Fahey 2000; DeTienne et al. 2004; Brachos et al. 2007). This is because the receiving unit becomes better able to assess the other units' credibility and trustworthiness, and is more likely to develop positive attitudes towards someone they have a relationship with and considers as allies

compared to having a non-existing relationship where one considers others as competitors that should be kept at an arm's length.

The culture of an organization is also argued to influence the organizational actor's commitment and involvement with the organization's purpose and vision. Organizational commitment and involvement is argued to influence the actor's motivation and willingness to engage in inter-unit KT (Ipe 2003; Brachos et al. 2007; DeTienne et al. 2004; Zheng, Yang and McClean 2009). Organizational commitment is defined as the organizational actors' involvement and identification with the organization's vision and purpose (Lok, Westwood and Crawford 2005). If a unit share and identify with the organization's vision and purpose then this unit is expected to go to extraordinary lengths and beyond its self interest in order to achieve what is best for the organization as a whole, instead of only achieving its own immediate self interest and goals (Lok, Westwood and Crawford 2005). Moreover, when organizational actors display a high level of organizational commitment it typically leads to a feeling of collective responsibility and more cooperative involvement, where the actor feels obligated and motivated to do what is best for the organization as a whole. Greater organizational commitment is argued to lead to more inter-unit KT, since the actors become more willing and motivated to both share and adopt knowledge with others because it might contribute to the greater good of the organization (DeLong and Fahey 2000; DeTienne et al. 2004; Zheng, Yang and McClean 2009). If for example one unit has developed a superior way of doing things and this unit displays a high level of organizational commitment, it will be more willing and motivated to share this knowledge with other units as it could potentially improve their practices as well. Moreover, if the receiving actor also displays high levels of commitment, it will become more willing and motivated to adopt knowledge from others even if the knowledge does not contribute to fulfill that unit's own immediate goals, but the unit will adopt it anyway because the knowledge could potentially benefit the greater good of the organization. On the other hand, if the unit does not identify with or share the organizational purpose and vision where the self interest prevails, then that unit will not engage in KT unless it has something to gain from it personally or that it contributes to fulfilling its own self interest and goals.

Closely related to the organizational commitment, is whether the actor is intrinsically or extrinsically motivated, which is argued to be another cultural

factor that influence inter-unit KT (Osterloh and Frey 2000; Ipe 2003; Brachos et al. 2007). Extrinsic motivation comes from the use of external rewards and incentive systems that are constructed to motivate individuals into obtaining desirable behaviors (Ipe 2003). When an actor is extrinsically motivated, the best way to motivate this actor is to make sure that the actor behaves in a desirable manner and this is done through provision of external rewards, often in the form of monetary incentives (Osterloh and Frey 2000). If the organization ties the external reward to the actor's engagement in KT, then the actor is expected to engage in more KT simply because the actor would want to collect the external reward by doing so. Conversely, if the external reward has nothing to do with the actor engaging in KT, then it is expected that KT will be absent, unless it is indirectly linked to the actor's external reward (Brachos et al. 2007). Intrinsic motivation on the other hand does not come from any external rewards or incentives, but rather from an internal feeling of accomplishment and need satisfaction (Ipe 2003). The source of intrinsic motivation often comes from work-related factors like for example task accomplishment, personal/professional development and improvement, or from contributing to the organizational purpose and vision and from feeling a sense of fulfillment (Osterloh and Frey 2000). Actors who are intrinsically motivated are expected to engage in more KT in the long run than those who are extrinsically motivated, first, because KT is an activity that requires creative thinking and learning which is a natural part of personal and professional development and fulfillment (Osterloh and Frey 2000). Secondly, no external reward systems are able to specify all the desirable behaviors and outcomes of extrinsically motivated employees, and moreover, since intrinsically motivated actors are expected to engage in KT on an ad hoc basis simply because it is part of their natural behavior for contributing to the greater good of the organization (Minbaeva 2008).

Another way in which organizational culture is argued to influence inter-unit KT, is by determining the rules, norms and practices which deals with how mistake and failure is treated (DeLong and Fahey 2000; Goh 2002). If the cultural rules, norms and practices determine that mistakes are treated with punishment and that making mistakes is frowned upon and humiliating for organizational members, then it is likely that the organizational members will take less risk and be less willing to engage in KT. If on the other hand mistakes are treated as potential sources of learning, where risk taking and experimental learning is

encouraged, then this could lead to more KT, since organizational members becomes more willing to take risks and experiment. When mistakes are treated as potential learning points it could also increase KT since actors could learn from the mistakes of others who might have failed in their attempt to transfer a specific type of knowledge in another situation (DeLong and Fahey 2000).

What all the above mentioned organizational culture dimensions have in common is a focus on how the organizational culture influence the actor related elements of KT, by influencing their motivation and willingness to engage in KT, as well as the relationship between them. Since these dimensions of organizational culture are closely intertwined and interconnected we have chosen to label and conceptualize them as the cultural dimension which creates “the relational and cognitive actor conditions for KT”. More specifically for the purpose of our study, the two leadership cultures are expected to influence the receiving unit’s motivation and willingness (cognitive conditions) to engage in inter-unit KT, and to influence the relationship (relational conditions) between the actors engaging in inter-unit KT by determining how they perceive each other and their attitudes towards one another.

In the next section we present the transformational and transactional leadership culture and describe the characteristics of the two cultures and discuss more specifically how we expect the two cultures to influence inter-unit KT. By drawing on the discussion above we will explain our assumptions on how the transformational and transactional cultures are expected to influence the actor related elements of KT, by focusing on how the two cultures influence and creates the relational and cognitive actor conditions for KT. Making this connection could prove to be a valuable contribution to the literature as it introduces a novel approach to investigating cultural issues related to KT, and is as a first attempt on conceptualizing the effect the two leadership cultures have on inter-unit KT. Moreover, we will attempt to empirically establish the relationship between the two leadership cultures and KT, and thereby confirm if the two leadership cultures indeed have a significant effect on inter-unit KT.

2.3.1 Leadership Culture

The two leadership cultures, transformational and transactional, have been suggested by Bass and Avolio (1993) as two specific organizational culture profiles within a broader taxonomy of organizational culture profiles. As we have

already mentioned the two cultures are deduced from theories on leadership styles, where Bass (1985), who extended the work of Burns (1978), introduced and described the two different leadership styles; transformational and transactional. The characteristics that were used to describe these two different leadership styles were later adopted by Bass and Avolio (1993). They used the leadership styles' characteristics to describe two different organizational culture profiles which they labeled transformational and transactional cultures since they mirror the characteristics of the two leadership styles (Bass and Avolio 1993). Below we will describe the two “pure” culture profiles and their characteristics separately in accordance with the conceptualization made by Bass and Avolio (1993). The “pure” forms are described in order to see more clearly how they are expected to influence KT. In reality however, it is unlikely to observe an organizational culture that is purely transformational or transactional. It is more likely to observe a culture that displays a bit of both types, and that the culture can be described with differing degrees of transformational and transactional characteristics (Bass and Avolio 1993; Parry and Proctor-Thomson 2001). The extent to which an organizational unit displays transformational or transactional culture characteristics can be measured by how the organizational members perceive the leadership culture in their organizational unit (Bass and Avolio 1992). Because of the fact that no other studies that have investigated the explicit link between the two leadership cultures and KT, we have to rely heavily on research and literature which have studied similar effects with regards to organizational culture in general and KT, and develop our hypotheses based on theoretical reasoning about their findings together with the descriptions of the transformational and transactional cultures.

2.3.2 Transformational Culture

Bass and Avolio (1993) states that they used the four “I’s” of transformational leadership to describe the typical characteristics of a transformational culture. These four I’s are: Individualized consideration, Intellectual stimulation, Inspirational motivation, and Idealized influence (Avolio, Waldmann and Yammarino 1991). However, Bass and Avolio (1993) do not provide a detailed explanation of how the four I’s explicitly contribute to the creation of a transformational culture, instead they provide an unstructured description of all the typical characteristics found in a transformational culture. Moreover, all of the

four I's are highly intertwined and it is their combined effect that creates the transformational culture (Avolio, Waldmann and Yammarino 1991), which makes it difficult to describe exactly which of the four I's that contribute to the different characteristics found in the transformational culture description. So, instead of focusing on the four I's we attempt to summarize and conceptualize some of the characteristics we find most relevant in relation to inter-unit KT from the transformational culture description.

In a transformational culture there is a strong sense of purpose and belonging, where the commitment and involvement of organizational members is long term and there is a strong feeling of family and collectivism among organizational members (Bass and Avolio 1993). The transformational culture is further characterized with high levels of trust, interdependence and collaboration between organizational members (Bass and Riggio 2006). Moreover, in a transformational culture the organizational purpose, vision and mission is strongly emphasized and shared by all members, where members go beyond their self-interest, roles and individual goals if it is in the best interest of the organization as a whole (Bass and Avolio 1993). The organizational members are intrinsically motivated, where they are motivated not from external rewards, but are rather motivated from performing the work itself and from contributing to fulfilling the organizational purpose and vision (Bass and Riggio 2006). In a transformational culture the organizational members are encouraged to challenge old ways of doing things and constantly be on the lookout for new and alternative ways of solving problems. Experimental learning, ad hoc problem solving and creativity are the norm, where mistakes are treated as potential learning points instead of punishment and embarrassment (Bass and Avolio 1993).

When taking into account the summary description about the transformational culture and the discussion above regarding the relationship between organizational culture in general and KT, we expect that the transformational culture will indeed influence inter-unit KT positively. First of all, we expect the transformational culture to influence the relational conditions of the actors engaging in KT i.e. the sender-receiver relationship. Since the transformational culture describes high levels of collaboration and cooperation between organizational actors and furthermore, as the transformational culture describes high levels of trust, familiarity and affinity between organizational actors, we expect that this will influence inter-unit KT positively. As we have

discussed above, when the receiving actor has a culture that considers other organizational actors as allies rather than competitors and when the culture encourages social interaction with others, we also would expect that this would lead the receiving unit to be more open and willing to engage in social interaction with other units within the same organization which again increases the likelihood of creating a sender-receiver relationship that favors KT. More specifically to avoid any misunderstandings, we do not claim that the relationship between the sending and receiving unit is favorable for KT merely on the basis that the receiving unit displays a transformational culture. However, we expect that when the receiving unit has a transformational culture this will increase the possibility of creating a sender-receiver relationship in the first place, simply because the receiving unit will be more willing and open to engage in social interaction with other units when the receiving unit is more positive towards collaborating and interacting with other units and considers them as allies rather than competitors. The relationship could of course lead to nothing and could also lead to the creation of relational actor conditions that are unfavorable for KT, for example it could be that the two cultures are incompatible (sender is transactional and receiver is transformational) which implies that the sender might be unwilling to take part in the relationship and keeps the receiver at an arm's length distance. In situations like this when the sending unit has a culture that discourages social interaction there are few chances of creating a sender-receiver relationship which favors KT. However, it is more likely that there will develop a sender-receiver relationship which favors KT if the receiving unit displays the positive characteristics of the transformational culture, compared to the transactional characteristics. If for example the receiving unit is unwilling to engage in social interaction with other actors and considers other units as competitors in the first place, there will be no chance of creating a sender-receiver relationship that might favor inter-unit KT, simply because the receiving unit would not engage in social interaction with others what so ever, and would want to operate in isolation and would be skeptical towards other units. Therefore we expect that when the receiving actor displays a transformational culture this increases the likelihood of creating relational actor conditions that favors KT which again is expected to influence inter-unit KT positively.

Second, the description of the transformational culture characteristics also gives reason to expect that this culture will influence the actor's cognitive

conditions for inter-unit KT. The transformational culture describes strong and long term organizational commitment and involvement, where the organizational members share and identify with the organization's purpose and vision, and that they are intrinsically motivated. In addition, the transformational culture describes norms where mistakes are treated as potential sources of learning and experimentation and creativity is encouraged. When taking into account these descriptions of the cognitive actor conditions, our expectations that the transformational culture will positively influence inter-unit KT are further strengthened. Because the actors will be more willing and motivated to engage in inter-unit KT when organizational commitment and involvement is high, actors are intrinsically motivated, experimentation and creativity is encouraged, mistakes are tolerated and treated as potential sources of learning.

To sum up, the transformational culture is expected to influence the relational and cognitive actor conditions in favor of inter-unit KT. More specifically, the transformational culture is expected to influence the receiving actors' attitudes and perceptions towards others positively, because the receiving unit will be more open and willing to engage in social interaction when they consider other units as allies rather than competitors. When the receiving unit is predisposed to think more positively of other units and want to engage in social interaction with them it increases the chance of creating a sender-receiver relationship that is characterized with high levels of trust, collaboration, cooperation, collectivism, familiarity and affinity which will enable and increase inter-unit KT. Moreover, the transformational culture is expected to influence the actors' motivation and willingness to engage in inter-unit KT positively, by creating a cultural mindset where organizational actors are highly committed and involved with the organization, are intrinsically motivated and are encouraged to experiment and take risk. When we take into account both the discussion above regarding the relationship between organizational culture in general and inter-unit KT, and the discussion and description of the transformational culture summary, we propose the following hypotheses:

Hypothesis 2 A: *The transformational culture influences inter-unit KT positively*

2.3.3 Transactional Culture

The transformational culture is often contrasted with the transactional culture, as the two cultures are described by almost the opposite characteristics. The transactional culture also builds on the theories about leadership style and behavior, where Bass and Avolio (1993) used the dimensions of transactional leadership, “Contingent Reward” and “Management by Exception”, to describe the typical characteristics of a transactional culture. In the same manner as with the transformational culture, Bass and Avolio (1993) only states that the dimensions are used to describe the characteristics of a transactional culture without giving a more thorough explanation of how they relate to the culture, and only provides an unstructured description of the typical transactional culture. Below, we have summarized the transactional culture characteristics we have found most relevant in relation to inter-unit KT.

The “pure” transactional culture is often described as a contractual culture where the roles, assignments and expectations of the organizational members are explicitly written down in their job description. Rewards are based on desired behavior and goal accomplishment, and unwanted behavior is regulated by rules, regulations and disciplinary actions, where making mistakes is punished and considered as humiliating (Bass and Avolio 1993). The organizational members’ source of motivation is described as extrinsic, as it is very much influenced and guided by external rewards and incentives (Bass and Riggio 2006). The actors’ values and beliefs are rooted in the notion of a contractual relationship between the organization and its members, where every member has a “price” for aligning with the organization’s mission and vision. Even though the members can be “bought” to align with the organizations purpose and vision, they do not identify with it which leads to low involvement and short term commitment (Bass and Avolio 1993). The self-interest prevails and there is a feeling of “every man for himself” in a transactional culture as individual goals and rewards outweigh the members concern for the greater good of the organization. This again leads to independence among organizational members, where cooperation and collaboration is dependent on whether it serves the self-interest of the individual (Bass and Avolio 1993). Individuals guard their turf, keep things to themselves and are naturally skeptical towards others, which results in low interaction and trust among organizational members. The transactional culture is very much like a

marketplace where everyone competes with each other, and negotiation is the norm rather than collaboration (Bass and Riggio 2006).

As with the transformational culture, very little is known in the literature when it comes to the explicit link between the transactional culture and inter-unit KT. However, since the transactional culture is described with nearly the opposite characteristics as the transformational culture, which we have argued to create favorable relational and cognitive actor conditions for KT, we would expect that the transactional culture might have a negative influence on inter-unit KT.

Further on, based on the summary description of the transactional culture we expect that the transactional culture will not contribute to create the relational and cognitive conditions which favor inter-unit KT, first of all with regards to the relational conditions of inter-unit KT. The transactional culture is described with low levels of interaction and collaboration among organizational actors, where the relationship between them is characterized with low levels of trust, affinity and familiarity where actors consider each other as competitors rather than allies. This is expected to influence inter-unit KT negatively because actors have more negative attitudes towards each other, and are skeptical of the motives other actors might have for engaging in inter-unit KT. If a unit is characterized as transactional it will most likely keep other units at an arms-length distance and would not engage in much social interaction with other units nor have strong ties to other actors within the organization, all of which are considered as prerequisites for inter-unit KT to occur especially with regards to tacit KT.

With regards to the cognitive actor conditions of KT, the transactional culture characterizes organizational actors as displaying low levels of organizational commitment and involvement. The organizational actors' relationship with the organization is considered as contractual where actors can be "bought" to align with the purpose and vision, but what really drives and motivates them is their quest to satisfy their own personal self interest. Actors who are driven by self interest and displays low levels of commitment will be less likely to engage in inter-unit KT, and will more likely display behaviors like knowledge hoarding, where they keep valuable knowledge to themselves for example because keeping that knowledge within their unit could potentially benefit their position vis a vis other units. Moreover, a unit with a transactional culture would also be less likely to adopt knowledge from others unless it would

contribute to satisfy their own self interest, nor would they adopt knowledge simply to contribute to the greater good of the organization because they do not share and identify with its purpose and vision.

The transactional culture also describe the actors as extrinsically motivated (Bass and Avolio 1993), which could potentially lead to more inter-unit KT if the external reward is directly related to a unit's engagement in inter-unit KT. However, most inter-unit KT is difficult to observe and measure, especially when it comes to tacit KT, which could lead to an overemphasize on transferring and adopting explicit knowledge as this type of KT requires less effort and is easier to get rewarded from. Also, in the long run, extrinsically motivated actors will engage in less KT than those who are intrinsically motivated, simply because engaging in KT alone is not a source of motivation for those who are extrinsically motivated as it is argued for those who are intrinsically motivated.

At last, the cognitive actor conditions for inter-unit KT would also be influenced by the way mistakes are treated in a transactional culture (Bass and Avolio 1993). For example, when actors are humiliated, frowned upon or punished for making mistakes, they are less likely to engage in inter-unit KT because it is a new and unfamiliar activity that might be difficult to succeed with, especially when it comes to tacit KT. When actors are afraid of making mistakes they are less likely to engage in situations that might lead them to fail, which results in less risk taking, creativity and experimentation which again is argued to increase inter-unit KT. Also, when mistakes are treated with punishment, the actors who have failed with inter-unit KT would want this to go away unnoticed and thereby misses the opportunity to learn from what went wrong which could potentially ease the processes for others at a later occasion.

All in all, the transactional culture is expected to influence the relational and cognitive actor conditions unfavorable for inter-unit KT. The transactional culture is expected to influence the actors' attitudes and perceptions towards others negatively where the receiving unit is more likely to consider other units as competitors and will most likely keep other units at an arm's length distance which results in low social interaction. This again increases the possibility of creating unfavorable relational actor conditions, where the sender-receiver relationship is more likely to be characterized with low levels of trust, social interaction, collaboration, cooperation, familiarity and affinity which is likely to

disable and decrease inter-unit KT. Moreover, the transactional culture is also expected to influence the actors' motivation and willingness to engage in inter-unit KT negatively, where organizational actors display low commitment and involvement with the organization and only cares about their own self interest, are extrinsically motivated and where mistakes are punished and frowned upon which results in less risk taking and experimental learning. When we take into account both the discussion above regarding the relationship between organizational culture in general and inter-unit KT, and the discussion and description of the transactional culture summary, we propose the following hypotheses:

Hypothesis 2 B: *The transactional culture influences inter-unit KT negatively*

3. Research methodology

In this chapter the research methodology that were employed to answer our research questions and test the proposed hypotheses are presented. We will go through and provide a detailed description of relevant research strategy, design, as well as methods for data collection and analysis.

3.1 Research strategy

In business research it is common to draw a distinction between two different research strategies: qualitative and quantitative (Bryman and Bell 2011). Qualitative research emphasizes words rather than quantification in the collection and analysis of data. It emphasizes an inductive approach when it comes to the relationship between theory and research, where the emphasis is placed on the generation of theory. Conversely, quantitative research emphasizes quantification in the collection and analysis of data. It employs a deductive approach to the relationship between theory and research, in which the emphasis is placed on the testing of theory. A qualitative approach is a relevant strategy when trying to get an in-depth and complex understanding of a problem or theory, not in obtaining information which can be generalized. The quantitative approach on the other hand usually involves numerical data and statistical calculations so that empirical conclusions about the theory can be made. Thus in qualitative research, theory and hypotheses are often developed, while quantitative research can be used to seek empirical support for such theory and hypotheses. In this study we wanted to examine the research questions: how does KT affect organizational performance,

as well as how transformational and transactional culture influences the process of KT. The purpose of our study was to empirically test the hypotheses that were developed in the literature review. Thus, the relevant research strategy for this study was quantitative: a strategy where hypotheses are generated from existing theory and then tested to prove or disprove the suggested hypotheses (Bryman and Bell 2011).

Quantitative research is consistent with the concept of positivism, which is an epistemological position that can be considered as “natural science research” where methods of natural science are applied to the study of social reality (Bryman and Bell 2011). This is a rationalistic theory in which cause determines effects and outcomes, and reality is driven by universal laws and truths. Knowledge can only be accepted as a universal law if the knowledge can be derived from logical and mathematical treatment, and confirmed by the senses (Bryman and Bell 2011). Only then is it empirical evidence. The methods for our data collection and data analysis were therefore adapted to this line of thought. Further on, quantitative research has an ontological orientation where the researchers have to be objective and not manipulate the results of the study. Therefore, we were objective observers and did not participate nor influenced the participants when the study was conducted.

3.2 Research design

A research design provides a framework and plan for collecting and analyzing data. The research design adopted for this study was a survey design, which consists of a cross-sectional design where data is collected predominantly by questionnaires or by structured interviews (in our case: questionnaires) on multiple cases at a single point in time in order to examine patterns of association between multiple variables (Bryman and Bell 2011). This is consistent with the hypotheses and research questions where we wanted to test the relationship between the three variables: inter-unit KT, unit performance and leadership culture in an MNC. Moreover, survey research is beneficial for collecting original data for describing a population that is too large to observe directly (Babbie 2004), and provides an opportunity to access attitudes and opinions otherwise not possible to obtain or observe. Understanding how organizational members perceive their unit’s culture and the degree of KT in each unit are two examples of

how survey data can be utilized to understand various phenomena that could not otherwise be observed directly over a large population.

3.3 Methods

In the process of quantitative research, after research design has been selected, the next steps are to select the research setting and instruments for collecting data, devise measures of concepts and techniques for analyzing the data (Bryman and Bell 2011).

3.3.1 Data collection

To examine the relationships between our variables the context of a multinational corporation was chosen. An MNCs is a network of multiple units that are geographically dispersed in various countries all over the world. It has been claimed that MNCs exists primarily because of their superior ability to transfer knowledge more effectively and efficiently than through external markets (Gupta and Govindarajan 2000, a). Moreover, it is critical for an MNC to focus on inter-unit KT since its knowledge base can have the greatest ability to become their source of competitive advantage if exploited correctly (Dierickx and Cool 1989). Thus, the effect of KT on performance should be possible to observe in this context. To test our hypotheses we collected data from a division that is a business area within a large Norwegian MNC which consisted of approximately 9000 employees that were located at 300 offices in 100 different countries at the time we collected our data. Most of the employees provide professional services on risk management in multiple industries, where the two largest business areas are the maritime industry and the oil and gas industry. The division that were targeted within this larger organization had approximately 1600 employees when the data was collected, and this division provides consulting and certification services in the oil and gas industry in over 40 locations worldwide. The nature of this industry is characterized as knowledge-intensive, where the employees are professionals who are very dependent on their intellectual capital and knowledge base for conducting business.

The data was collected through the application of self-completion questionnaires, which is one of the main instruments for collecting data in social survey research (Bryman and Bell 2011). It was decided to collect data using two different questionnaires: one that targeted the employees in each unit and one that targeted

the leaders in the respective unit. This was done since we included questions that either leaders or employees were best suited for answering and we wanted to resolve “common method variance” (CMV) regarding the KT and performance link. CMV is a phenomenon that has been observed in research that is based on self-report measures, which is what we employed in this study, and this phenomenon can bias the interpretation of results (Podsakoff et al. 2003). When multiple constructs are measured by using multiple-item scales within the same survey, it can lead to spurious effects due to the measurement instruments instead of the constructs that you are supposed to measure. CMV is a common problem, and one strength of our study is that we test the KT-performance link by having different sources for the independent and dependent variable. Common method bias refers to a bias in the data that is due to external interference that can influence the response given. For example, when collecting data using a single (common) method, like an email questionnaire, it can introduce systematic response bias that can either inflate or deflate the results in the regression and bias the relationships between the theoretical constructs (Podsakoff et al. 2003). Therefore, the employee questionnaire included the questions related to the two leadership cultures and KT. The leader questionnaire included questions related to the unit’s performance as well as the control variables that were included. By doing this, the dependent variable (unit performance) and the independent variable (KT) is derived from different questionnaires and from different respondents, which can resolve the CMV issue and ensure that our interpretation of the results are not biased.

The questions in the questionnaires that were formulated to measure our constructs used a 7-point Likert-scale where the respondents were provided with various statements and were asked to answer for example if they agree or disagree with the statement, where the value of 1 represents strongly disagree and the value of 7 represents strongly agree. This is a common way to construct and formulate questionnaires in social survey research (Bryman and Bell 2011). When using Likert-scale questions it becomes easier and less time-consuming for the respondents to answer the survey questions, which can result in a higher response rate compared to more non-standardized answering options. The respondents were given fixed responses from which they could choose so that it was easier for them to understand the meaning of the questions. Liker-scale questions also provided us

with the advantage of standardizing and quantifying relative effects (Gold et al., 2001), and it made it easier for us to compare respondents, to codify and analyze the data statistically.

The questionnaires were distributed to the targeted division in 2007 and all the employees and leaders were provided with a questionnaire. Of the 1586 employees and 184 leaders contacted, the questionnaires were answered by 894 of the employees and 130 of the leaders, providing us with a relatively high response rate of 57% and 71% respectively. A response rate is an indicator of the quality of the survey, and although there is no “one correct answer” to the required threshold of the response rate (Baruch and Holtom 2008), this is a fairly high response rate.

3.3.2 Measures of concepts

To devise correct measures of the concepts and variables we were interested in examining, the concepts had to be conceptualized and operationalized (Bryman and Bell 2011). Conceptualization is the process of giving the concept a clear theoretical definition, which we have done in the literature review of this study. Operationalization on the other hand is the process of linking the definition of a concept to a measurement technique. In this process, indicators measuring the constructs were developed. When developing measurements of various concepts, it is very important that the measures are reliable and display valid representation of the concepts they are supposed to measure. Reliability refers to the consistency between the measures of a concept (Bryman and Bell 2011). It is important that the indicators are consistent and free from measurement errors. When it comes to the reliability of constructs, using single-indicator measures can have some disadvantages. Especially when measuring complex constructs, it is possible that a single indicator can incorrectly classify some of the respondents since they can for example misunderstand the question. Single-indicators may also only capture a portion of the concept that you want to measure. Multiple-indicator measurements on the other hand, have more than one question to measure a construct and are therefore more reliable since they capture a larger portion of the concept (Bryman and Bell 2011). Therefore, we used multiple-indicator measures for all of our constructs in order to ensure that they were being accurately assessed, thus increasing the reliability of our constructs. To measure the internal consistency of our concepts we used the widely recognized Cronbach’s alpha coefficient, which is a test that is frequently used for measuring internal reliability of constructs

(Bryman and Bell 2011). Validity refers to the issue of whether the indicators are actually measuring the concept they are supposed to measure (Bryman and Bell 2011). We therefore adopted measurements from existing literature to ensure validity of our constructs. We either adopted standard well-established research instruments or adapted them with minor changes to fit the context of our research study. In the text below we will provide a more detailed description of the variables included in our analysis and explain how they were measured. An overview of the questions used to measure each variable in our study is attached in Appendix 1.

Knowledge transfer. Inter-unit KT is the independent variable when it comes to hypothesis 1 and the dependent variable for hypothesis 2A and 2B. The operationalization of this variable was based on Persson's (2006) and Gupta and Govindarajan's (2000, a) measurement of KT. As discussed in the literature review, it is argued that the process of KT is not completed before the knowledge has been adopted by the receiving actor (Minbaeva et al. 2003; Szulanski 2003). Therefore, inter-unit KT was measured as a unit's degree of knowledge adoption. To develop our measurement construct for inter-unit KT, the employees in each unit were asked questions regarding the extent to which they adopted knowledge from other units or from the headquarter in the form of: technology, documents and reports regarding new services/products and processes, and organizational practices and routines. All of these forms of knowledge refer mainly to tacit knowledge, but we do not measure the degree of tacitness. We chose to focus on knowledge in the form of procedural know how (tacit knowledge) rather than declarative knowledge (explicit) like budget reports, because tacit knowledge is people based and best transferred through social interaction which is of our interest, and explicit knowledge is best transferred through standardized ICT systems which requires little or no direct social interaction with others. The employees were asked to indicate the extent to which they engaged in this type of inter-unit KT on a 7-point Likert-scale where 1 is "very seldom" and 7 is "very frequent".

Unit performance. The dependent variable for hypothesis 1 is unit performance. How to measure organizational performance is a constant topic for debate and critique (Jing and Avery 2008). Performance has a multidimensional nature and previous research has been criticized for the quality and use of measurements for

organizational performance. According to Jing and Avery (2008), multiple performance indicators should therefore be used to get the most correct measurement construct. For example, instead of only using financial performance measures, the inclusion of non-financial performance measures like customer satisfaction would increase the quality of the organizational performance construct (Jing and Avery 2008). Based on this multiple indicators were included, both financial and non-financial, in our study to enhance the validity of the construct. To measure unit performance we adapted the measurements from Lee and Choi (2000) and Deshpande et al. (1993) and asked the leaders in each unit to indicate on a 7-point Likert scale spanning from “not at all satisfied” to “very satisfied” regarding four different performance measurements: market share, profitability, access to the market and customer’s satisfaction.

Leadership cultures. The independent variables that are being examined for hypothesis 2A and 2B are the two leadership cultures, or more precisely the transformational and transactional culture in the various organizational units. However, how to measure a unit’s culture can be difficult to measure objectively. Therefore, to measure these two constructs we employed a quantitative method derived from the research of well-established researchers in the field. The survey items are adopted from an existing instrument that was created by Bass and Avolio (1992), which they labeled as the “Organizational Description Questionnaire” (ODQ). The ODQ is a questionnaire with twenty-eight questions that explores an organization’s or a unit’s culture and is a useful questionnaire to determine whether a culture can be characterized as transformational or transactional. The constructs are measured on how the organizational members perceive the culture in their unit, department or organization, by asking questions that reflects the transformational or transactional characteristics of the culture. When using this tool, the respondents are given 28 statements that are going to describe their organizational culture, where they will receive two overall scores – transactional culture score (TA) and transformational score (TF). 14 of the 28 statements represent the measure of transactional culture, for example “we bargain with each other for resources” or “bypassing formal hierarchy is not permitted”. The other 14 statements represent the measure of transformational culture, for example “there is a continual search for ways to improve operations” and “when you are unsure of what to do, you can get a lot of help from others”. The

respondents were asked answer the various statements by using a 7-point Likert scale where 1 is “strongly disagree” and 7 is “strongly agree”.

Control variables. Other variables that could also influence the relationship between the independent and the dependent variables were included as control variables in our analysis in order to increase the validity of the results and improve the fit of the models. There are other determining factors that need to be controlled for when predicting unit performance and KT, or else the interpretation of the results can be biased and incomplete. As we have discussed in the literature review, the process of KT is not only influenced by the leadership culture, but also other actor-related factors, as well as mechanisms for KT. Therefore, in order to control for the effect of other critical determinants, the following three control variables were included in the regression models to be able to test our hypotheses:

Unit size has often been included as a control variable in studies where KT and unit performance has been the dependent variables. Although there has been mixed results when it comes to the relationship between unit size and KT (van Wijk, Jansen and Lyles 2008), it has been argued that larger units will adopt less knowledge from other units in an MNC simply because they are able to generate the knowledge they need themselves (Minbaeva et al. 2003). The relationship between unit size and KT is therefore expected to be negative. When it comes to the relationship between unit size and unit performance, we follow the argument of Tsai (2001), who claims that large units will often be prioritized by the headquarter, who will provide them with more resources and support, compared to smaller units, which they can use to enhance their performance. We therefore expect there to be a positive relationship between unit size and unit performance. Unit size was measured in terms of the number of employees in the unit (Gupta and Govindarajan 2000, a).

Employees' ability was included as a control variable since it is a fundamental part of a unit's absorptive capacity, and absorptive capacity has been empirically supported as an influencing factor on inter-unit KT in MNCs (Gupta and Govindarajan 2000, a; Minbaeva et al. 2003). When the employees' in a unit are more knowledgeable, skilled and experienced i.e. have a higher overall ability, they are better equipped to engage in KT and should be able to adopt more knowledge from others. Thus, we expect that there will be a positive relationship between a unit's employee ability and inter-unit KT. Employees' ability also plays

a significant role when it comes to the performance of a unit (Barney 1995). A unit consists of a number of employees and one would expect that the more skilled they are the better will the unit perform. The measurements for this variable were adopted from Minbaeva et al. (2003) where the overall ability of the unit's employees was measured. The leaders were asked to assess the ability of the unit's employees compared to the employees of their competitors in: overall ability, job-related skills and educational level. The leaders were asked to respond on a 7 point Likert scale ranging from "below average" to "above average".

Formal integration of people has been found as an influencing factor on both inter-unit KT (Gupta and Govindarajan 2000, a) and unit performance (Key Park and Prescott 2003) in the context of an MNC. Formal integrative mechanisms are formal socialization mechanisms like task forces, teams and committees that are initiated by the organization for the purpose of integrating units. Formal integration of people is important since units that are well integrated and linked to other units will have stronger inter-personal ties, a higher degree of communication and greater access to relevant knowledge. Thus, we expect that there will be a positive relationship between formal integration and inter-unit KT. Moreover, whether a unit is formally integrated or not will also have implications for their performance (Kim Park and Prescott 2003). For example, a unit that is well integrated will have the possibility of exploiting resources and knowledge that other units have, which again can have a positive effect on the performance of the unit. We only included the formal integration mechanisms that are based on socialization mechanisms, not ICT and technology based integration mechanisms, because our measurement of KT refers mostly to transfer of tacit knowledge which is best transferred through social interaction. The reason for not including a control variable for the informal socialization mechanisms is because we expect that those mechanisms are captured by and included in the leadership culture variables. The operationalization of the control variable formal integration was based on Gupta and Govindarajan (2000, a) and Kim Park and Prescott (2003). This variable was measured on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree" where the leaders were asked to indicate the extent to which their unit used three key formal integration mechanisms: liaison personnel, scheduled meetings and committees to coordinate and integrate activities with other units.

3.4.3 Data analysis

To process and analyze the two datasets that were collected from the two questionnaires, the data processing tool Statistical Package for Social Sciences (SPSS) version 20 was used. The first thing we did was to clean and label the datasets, as well as removing responses that had missing values. After this was done, the following steps were conducted in our analysis:

Matching of datasets

The variables that were needed to answer our research questions and hypotheses came from two different datasets, and they therefore had to be matched. The level of analysis was on the unit level of the division, and we wanted to match the datasets based on the unit code the respondents belonged to. To be able to do this, since we had different number of responses from each unit, responses on each question from both the employee data-set and the leader data-set were aggregated by calculating mean average scores based on the number of respondents in each unit. However, for the aggregated scores to be reliable representations of each unit we tested the inter-rater reliability (IRR) between different respondents by calculating intra-class correlation coefficient when units with multiple respondents were aggregated. According to Janssens et al. (2008) coefficients over 0,75 can be considered as excellent inter-rater agreement, and everything over 0.6 can be considered as good agreement between respondents in a unit.

From the 894 responses from the employees and the 130 responses from the leaders we were left with respectively 132 and 99 units. There were some units that had single respondents, especially from the leader-questionnaire. However, almost all of the units with multiple respondents had an IRR over 0.6. To ensure that we had enough observations to perform the analysis we decided to set the threshold on the IRR on 0.6 and a few units were removed. After matching the datasets based on the unit code, the 132 and 99 units from the two datasets left us with 66 matched answers.

Creation of variables

Before we could create the variables for our analysis, the measurements were standardized. When standardizing, the measurements becomes a z-score. This means that its mean becomes 0 and its standard deviation becomes 1. This is a useful procedure when you want to combine variables and measurements that are

displayed on different scales (Janssens et al. 2008). For example, unit size, which is measured as the number of employees in each unit, has a larger maximum score and mean than transformational culture. The transformational culture is measured on a Likert scale from 1-7, where the maximum is 7 compared to the maximum of unit size which is 44. If you took the simple arithmetic mean of size and leadership culture, your resulting score would be dominated by the unit size because it is so much larger. Thus, the measurements were standardized so that each variable contributes equally to the mean.

After standardizing the data, the variables that had multiple indicators were created. This was done by aggregating the multiple indicators that measure each variable. The score of the aggregated variables were mean computed across the indicators. To test the measurements' reliability we conducted Cronbach's alpha coefficient tests. From table 3.1 you can observe that all of our measurements had a Cronbach's alpha coefficient over 0.6, with the majority over 0.7. According to Kline (1999), coefficients over 0,9 can be considered as "excellent, 0.8 as "very good", values around 0.7 as "adequate", while values below 0.5 should be avoided. Thus, the results from the Cronbach's alpha tests indicated that the measurements were a reliable representation of the concepts they were measuring since all the constructs had a Cronbach's alpha coefficient over 0.7, with one exception: the transactional culture construct had a coefficient marginally below 0.7.

Table 1: Cronbach's alpha of constructs

Variables	Cronbach's Alpha	N of indicators
Unit performance	0,718	6
Knowledge transfer	0,900	4
Transactional culture	0,698	14
Transformational culture	0,907	14
Formal integrative mechanisms	0,701	3
Employees' ability	0,831	3
Unit size		1

Correlation Analysis

A correlation analysis was performed so that we could investigate whether and how the variables were related to each other, and was used as a preliminary analysis before the regression analyses. The results of the correlation table will be discussed in the first part of the results chapter. The correlation table was also used to check for the multicollinearity assumption related to the regression analyses which will be discussed in the section below.

Regression analyses

The purpose of this study was to test our hypotheses and examine empirically how the independent variables, KT and transformational/transactional culture, influences the dependent variables unit performance and KT. A regression analysis is a statistical technique that tries to explain the variation in one dependent variable on the basis of variation in a number of relevant independent variables (Janssens et al. 2008). A regression can determine the effect of independent variable on a dependent variable, and is therefore an appropriate technique for testing our hypotheses. More specifically we decided to conduct a linear regression analysis because we expected a linear relationship between the variables. Before we ran the regressions the collected data was standardized in SPSS. Standardized variables can be characterized as scale variables, and with this type of variables, linear regression analysis is an appropriate statistical technique for testing hypotheses (Kutner, Nachtsheim and Neter 2004).

A linear regression model is in general form expressed as (Janssens et al. 2008):

$$Y = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n +$$

Y = dependent variable

X_i = independent variable

b_i = parameter to be estimated, coefficient

= error term

To test our proposed hypotheses, two multiple regression models were employed to predict 1) unit performance and 2) inter-unit KT. The two linear regression models may be summarized in two equations

1. Unit performance = inter-unit KT + formal integration + employees' ability + unit size + error
2. Inter-unit KT = transformational culture + transactional culture + formal integration + employees' ability + unit size + error

A regression analysis estimates the parameters for the variables (b_i) so that the best possible fit is obtained between the actual and the predicted values for the dependent variable (Janssens et al. 2008). We did this by using the “ordinary least squares” method (OLS). When using the OLS method, the parameters are defined in such a way that the sum of square of each of the residuals (error term) is as small as possible. The parameters (b_i) were then used to either accept or reject the proposed hypotheses.

There are several assumption and criteria that needs to be in place and fulfilled in order to conduct linear regression analyses (Janssens et al. 2008). In the following section we will discuss and explain how we checked the various assumptions. The first assumption is that there has to be a linear relationship between the dependent and independent variable. If a linear regression analysis is applied to variables that are not linear in nature (square or logarithmic) the regression result will be biased. To test for this assumption the partial regression scatter plots for each independent variable were plotted. The scatter plots did not indicate patterns that would indicate a non-linear relationship between any of the independent variables and the dependent variables, which imply that this assumption was verified.

Another assumption is that the residuals (error term) have to be normally distributed as well as having the same variance for each value of the independent variable (homoscedastic). If the residuals are not normally distributed, then there is either an incorrect specification, collinearity or other problems present in the regression models (Janssens et al. 2008). Therefore, to check for this assumption the histogram of the standardized residuals were plotted. The histograms visually displayed a normal distribution which indicates that this assumption is present. In addition we also wanted to test the assumption of normality more formally. Therefore, we tested this assumption on the basis of two non-parametric tests: the Kolmogorov-Smirnov test and the Shapiro-Wilk's test. These tests showed non-significant results, and the null hypothesis (normal distribution of the residuals)

was therefore accepted. Thus, the conclusion on the basis of the histograms was formally confirmed: the standardized residuals are normally distributed.

When it comes to the assumption of homoscedasticity, the scatter plots of “regression standardized predicted value” and “regression standardized residual” (ZPRED, ZRESID) were plotted. We checked for patterns in the (ZPRED, ZRESID) graphs as well as the independent variables’ residual plot to the dependent variable. However, we found no pattern that the homoscedasticity requirement was violated or that any remedying measures were needed.

The rule of thumb when performing a correlation or regression analysis is that you need at least 50 observations, and this number increases with the number of independent variables one includes in the analysis (Van Voorhis and Morgan 2007). According to Janssens et al (2008), the sufficient number of observations must be at least five times as many observations as variables. After the data was cleaned and matched we had 66 observations, however, when we ran the regressions, 4 additional observations were removed. This was done because the control variable formal integration had 4 missing values and units with missing values were excluded “listwise” in SPSS. Although 62 observations is not a very large number, it is still adequate for conducting the two regression analyses. By looking at the two regression equations you can see that for regression 1 we had 5 variables and $5*5 = 25$. For regression 2 we had 6 variables and $6*5 = 30$. Thus, the number of observations is at least five times as many as there are variables. When testing for this assumption we also paid attention to the presence of outliers and if any remedying actions had to be considered. Outliers are values that are “extreme”, i.e. exceptionally high or low values that can bias the results of the regression models. By choosing the option “casewise diagnostics – outliers outside 3 standard deviations” in regression analysis the observations where the difference between the actual and the predicted value for the dependent variable does not lie in the range of three standard deviations of the mean residual are reported in SPSS. However, no outliers were detected after running this procedure.

The last assumption deals with the presence of multicollinearity among variables, in other words: that there is not a high degree of correlation between the independent variables. We conducted two multicollinearity tests to ensure that the variables were independent and did not suffer from multicollinearity. First, we looked at the bivariate pair-wise correlation coefficient between the variables

from the correlation analysis (Table 3.2). Secondly, we calculated the variable inflation factor (VIF) for the independent variables. According to Kutner, Nachtsheim and Neter (2004), the cut off value is $VIF > 10$ and anything below is acceptable. Although we have some correlation coefficient that differ significantly from zero, none of the independent variables had a correlation coefficient that were notably higher than 0.5, which could have indicated a multicollinearity problem (Janssens et al. 2008) Also, none of the variables had a VIF factor that was larger than 10. Thus, multicollinearity did not seem to be a problem in this study.

Table 2: Correlation coefficients among all variables under study

Variables	1	2	3	4	5	6	7
1 Transactional culture	1						
2 Transformational culture	,263*	1					
3 Formal Integration	,062	-,178	1				
4 Unit size	-,138	-,127	,032	1			
5 Employees' ability	,107	,035	,169	-,014	1		
6 Knowledge transfer	,310*	,530**	,098	-,265*	,003	1	
7 Unit performance	,118	-,042	,287*	,001	,345**	,123	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

4. Results

This chapter presents the results of the statistical tests used to answer the research questions and to test the proposed hypotheses in our study. The emphasis of our analysis is on assessing the statistical significance and influence the independent variables has on our dependent variables unit performance and inter-unit KT.

4.1 Correlation analysis

First, to examine the relationship between the variables of interest a Pearson correlation analysis was conducted (Table 3.2). This type of analysis addresses the bi-variate relationships between the variables included in our study. From the correlation analysis we can observe that several of the bi-variate relationships are significant and that none of the correlations run the risk of violating the assumptions of multicollinearity (no correlations above 0,5). When it comes to the hypothesized relationships, first, the correlation between inter-unit KT and unit performance was expected to be positive. Even though we have a positive correlation between them, the correlation is not significant. Second, with regards to the relationship between the two leadership cultures and inter-unit KT, we have some surprising results. As we expected, the correlation between the transformational culture and inter-unit KT is significant and positive. Contrary to our expectations the correlation between the transactional culture and inter-unit KT is also positive and significant. We expected that the two leadership cultures would have an opposite effect on inter-unit KT, due to the fact that they are described with nearly the opposite characteristics. And one would therefore expect that the bi-variate relationship between the two leadership cultures would display a negative correlation coefficient, similar to what Parry and Proctor-Thomson (2001) found in their article. However, we can see that there is a positive correlation between the two cultures and both have a significant positive correlation with inter-unit KT.

When it comes to the relationship between the control variables and the dependent variables, some of the correlation coefficients are significant, but not all of them. Unit size has a significant negative correlation with KT, which indicates that larger units may develop more knowledge within their unit, thus making them less dependent on adopting knowledge from other units. When it comes to unit performance, formal integration and employees' ability have

significant positive correlation coefficients. This indicates that the better employees a unit has, the better should the unit perform, and when these employees are formally integrated to the MNC, unit performance is also expected to increase.

4.2 Regression analyses

The main purpose of this study was to answer the two research questions regarding the relationship between KT and performance, and the relationship between organizational culture and KT. That is why we included two dependent variables in our regression analysis, unit performance and inter-unit KT. The three hypotheses pertaining to the two dependent variables were tested by running two separate multivariate OLS regression analyses, and we used the hierarchical method in SPSS where we entered the three control variables before we entered the independent variables which were of our main interest. Table 4.1 below presents the regression results we used to answer our first research question, and table 4.2 presents the results used to answer our second research question. Model 2 in each of the tables represents the full regression models we used to answer our three hypotheses.

Our first proposed hypothesis (H1) regarding the relationship between inter-unit KT and unit performance was formulated as:

H1: Inter-unit KT influences unit performance positively.

The table below displays the results regarding H1. The coefficient of determination (R^2) for the full model is reported to be 0,208, which indicates that the model explains 20,8% of the variation in the units' performance. Moreover, the value reported for the R^2 change (Δ) is 0,058, which indicates that inter-unit KT explains around 6% of the variation in unit performance. The $R^2 \Delta$ is significant and indicates that inter-unit KT is an important influencing factor on unit performance. Further on, the model has an F value of 3,743 which is significant on a 0.01 level, and this indicates that the model is valid and meaningful for predicting unit performance. Inter-unit KT has a positive standardized beta coefficient of 0,248 which is significant at a 0.05 level. The results of our regression analysis suggest that inter-unit KT influences unit performance positively, thus our results provide support for hypothesis 1. Two of

the included control variables are also reported to have a significant positive effect on unit performance, ability of employees and formal integration.

Table 3: Regression 1 results. Dependent variable: unit performance

Independent variables	Hypotheses	<u>Standardized Beta coefficients</u>	
		Model 1	Model 2
Employees' ability		0,260** (2,113)	0,281** (2,341)
Unit size		- 0,380 (-0,311)	0,012 (0,098)
Formal integration		0,245* (1,990)	0,215* (1,783)
Knowledge transfer	H 1 (+)		0,248** (2,047)
F		3,407**	3,743***
R ²		0,150	0,208
ΔR^2		0,150**	0,058**
Adjusted R ²		0,106	0,152

t statistics in parentheses

* P < 0.10, ** P < 0.05, *** P < 0.01

Our two hypotheses (H2 A and H2 B) regarding the relationship between the transformational and transactional culture and inter-unit KT was formulated as:

H2 A: *The transformational culture influences inter-unit KT positively*

H2 B: *The transactional culture influences inter-unit KT negatively*

The table below displays the results regarding H2 A and H2 B. The coefficient of determination (R²) for the full model is reported to be 0,327, which indicates that the model explains 32,7% of the variation in a unit's KT. Moreover, the value reported for the R² change (Δ) is 0,271, which indicates that the leadership cultures explains around 27,1% of the variation in a unit's KT. The R² Δ is significant and indicates that leadership cultures are important influencing factors on inter-unit KT. Further on, the model has an F value of 5,439 which is significant on a 0.01 level, and this indicates that the model is valid and meaningful for predicting inter-unit KT. The regression results suggest that there

is a significant positive relationship between transformational culture and inter-unit KT. Transformational culture had a beta coefficient of 0,476 which was significant even at the 0.01 level, thus providing support for H2 A. On the other hand, H2 B was not supported. Transactional culture did not have a significant negative beta as hypothesized, but a non-significant positive beta coefficient. Hence, from the results we cannot argue that there is a relationship between transactional culture and inter-unit KT. Of the control variables, formal integration had a significant positive effect (on a 0.10 level) on inter-unit KT. This gives some support to the thought that integration is important for inter-unit KT in MNCs.

Table 4: Regression 2 results. Dependent variable: KT.

Independent variables	Hypotheses	Standardized Beta coefficients	
		Model 1	Model 2
Ability of employees		- 0,087 (-0,672)	- 0,136 (-1,215)
Unit size		- 0,199 (-1,561)	- 0,146 (-1,324)
Formal integration		0,119 (0,922)	0,202* (1,774)
Transformational	H2 A (+)		0,476*** (4,094)
Transactional	H2 B (-)		0,141 (1,226)
F		1,145	5,439***
R ²		0,056	0,327
R ² change		0,056	0,271***
Adjusted R ²		0,007	0,267

t statistics in parentheses

* P < 0,10, ** P < 0,05, *** P < 0,01

5. Discussion and managerial implications

This study started with a preliminary discussion about the literature that has investigated intra-organizational KT in the context of MNCs, where we identified two research gaps in the literature. In the first gap we identified that there has

been mixed empirical results when it comes to the relationship between KT and performance, and especially in the case of MNCs this is an interesting relationship. The second gap was related to empirical studies that examine the relationship between organizational culture in general and KT, and more specifically empirical studies that investigate whether or not the transformational and transactional culture could be considered as influencing factors on the process of KT. We therefore developed two research questions which had the purpose of addressing these gaps in the literature. Thereafter, we proceeded with an extensive literature review of conceptual and empirical studies that have examined and discussed the relationship between KT and performance in MNCs, and various determinants of the KT process with a particular focus on organizational culture and the two leadership cultures in relation to KT. Based on our literature review and discussions we developed three hypotheses to address our two research questions. These three hypotheses were then tested using data from a large Norwegian MNC, where we ran a regression analysis on 62 units that are located in various parts of the world. The results of the regression analysis provided support to two of the three hypotheses, and the discussion of our findings are presented in more detail below.

The review of the relevant literature revealed that most researchers seem to agree on the notion that inter-unit KT is an important factor for predicting unit performance. However, these claims are most often based on conceptual discussions and theoretical reasoning, and the studies that have conducted empirical examinations of the relationship between inter-unit KT and unit performance have found mixed results. Based on our review of the literature that have investigated this relationship we hypothesized that inter-unit KT would influence unit performance positively. The regression analysis results provide support to our first hypothesis (H1), the standardized beta coefficient for inter-unit KT was significant ($p < 0,05$) and positivity related to unit performance. Our findings can therefore be considered as a valuable contribution to the literature since it contributes with an empirical examination of the relationship between KT and performance. Our findings provide empirical evidence that back up and support researchers who argue that KT in fact is an important determining factor on performance in the setting of an MNC, and that a higher degree of KT is positively associated with higher performance. Moreover, the regression results

indicate that inter-unit KT explains 5% of the variance in unit performance after controlling for other relevant factors. That inter-unit KT explains only 5% of the variance in unit performance was not surprising, because of the fact that performance is a multidimensional concept that is influenced by a multitude of other factors than inter-unit KT alone, like for example industry conjecture, luck and coincidence, country specific conditions like GDP level, different cost structures in different locations and unit differences in salary-politics. The list of factors that could potentially influence unit performance is nearly endless, and we are therefore under the impression that when 5% of the variation in unit performance is explained by inter-unit KT alone, this is actually a relatively large proportion of the variance, and we therefore argue that inter-unit KT is not only an important determinant, but it might be a very important determinant of unit performance in the context of an MNC. This finding has implications for managers and organizational leaders in MNCs, where they should have a particular focus on inter-unit KT since it could arguably lead to increased performance. Managers should therefore pay close attention too and analyze the extent to which units engage in inter-unit KT, and they should strive to encourage all units to actively engage in inter-unit KT. In order for this to happen, managers must be aware of and take into account the various determinants that have frequently reported to influence the process of inter-unit KT in MNCs.

After reviewing literature on the various determinants of KT, we noticed that organizational culture in general had received less attention in the literature, compared to the other discussed determinants. We further noticed that Bass and Avolio (1993) had developed an interesting theory on two specific culture profiles that were deduced from theory about leadership styles, and that the theory about the transformational and transactional culture profiles had received very little research attention and no other studies had examined the relationship between the two cultures and KT empirically. We developed one hypothesis to each of the two cultures based on theoretical reasoning, and by drawing on studies that had investigated organizational culture and KT which we could relate to the descriptions of the two leadership cultures. The regression analysis results for H2 A and H2 B indicate that the inclusion of the independent variables, transformational and transactional culture, explain 27 % of the variance in the dependent variable inter-unit KT after controlling for other relevant factors. Moreover, the regression analysis results provide empirical support to our second

hypothesis (H2 A), the standardized beta coefficient for transformational culture was most definitely significant ($p < 0,01$) and was positively related to inter-unit KT. However, the regression analysis results for our third hypothesis (H2 B) was not significant and do not provide any empirical support to establish the relationship between the transactional culture and inter-unit KT. The standardized beta coefficient for the transactional culture was not even moderately significant ($p > 0,1$) and we can therefore not argue that the transactional culture has any influence on inter-unit KT. Our findings suggests that when an organizational unit is characterized as having a transformational culture there is a noticeable and significant increase in inter-unit KT, which indicates that the transformational culture should indeed be considered as an influencing factor on inter-unit KT in an MNC. Based on our findings, we have provided the literature with an empirical examination that has established the relationship between the transformational culture and KT in an MNC. Moreover, we have made an effort to conceptualize how the transformational culture influences inter-unit KT, and our results report that the association between these two variables is positive. We therefore argue, based on our conceptualization and discussion of the transformational culture description, that there is a positive association because the transformational culture creates favorable relational and cognitive actor conditions which enables and increases inter-unit KT in an MNC. More specifically, we argue that the transformational culture shapes and influences the sender-receiver relationship (actor-relationship) in favor of inter-unit KT, by encouraging more inter-unit social interaction, collaboration and cooperation which again increases the tie-strength between them and lead them to perceive each other more positively. We also argue that the transformational culture shapes and influences the actors' motivation and willingness (actor-cognition) in favor of KT. The transformational culture favors KT by increasing the actors organizational commitment and involvement through sharing and identifying with the organizational purpose and vision. And also through prescribing individuals in a transformational culture as intrinsically motivated, all of which we have discussed as enablers of inter-unit KT. At last, the way mistakes are dealt with in the transformational culture is also argued to influence the actors' motivation and willingness to engage in inter-unit KT, where they are more willing to take risk and experiment when mistakes are tolerated and treated as a potential source of learning. Since the ODQ manual only measures an overall score of the transformational culture, we were not able to

provide any statistical support that directly backs up our argumentation with regards to the causality effect of how and if the transformational culture actually influences the relational and cognitive actor conditions. However, since we have based our conceptualization and theoretical discussions on the transformational culture description and studies that have investigated similar characteristics and effects, we are under the impression that our argumentation and assumptions with regards to how the transformational culture influences inter-unit KT should at least be considered as plausible conceptual support. Our findings contribute to the literature by providing a first empirical examination that provides support to establish the relationship between the transformational culture and inter-unit KT. As we have pointed out earlier, there is an apparent gap in the literature when it comes to empirical studies of the transformational and transactional cultures, and no other studies have previously examined the direct link between the leadership cultures and KT. With this study we have addressed this gap and contributed to the literature by doing an empirical study of the leadership cultures. Moreover, our findings address the existing gap in the literature when it comes to empirical examinations of the relationship between organizational culture in general and KT. Further on, our findings have implications for managers and organizational leaders as well, where we have empirically demonstrated that the transformational culture is positively associated with inter-unit KT in an MNC. Managers in MNCs should therefore foster and develop a transformational culture if they are interested in increasing inter-unit KT. The managers and organizational leaders should emphasize the creation of the transformational culture since it will eliminate some frequently reported actor-related barriers or disablers of inter-unit KT, by creating favorable relational and cognitive actor conditions. Moreover, managers will also have a more comprehensive understanding of how organizational culture in general might influence the process of KT, by providing them with a conceptualization of how the sender-receiver relationship, and the actor motivation and willingness are expected to influence inter-unit KT in an MNC. Our conceptualization of how the leadership cultures create different relational and cognitive actor conditions might also prove to be a valuable first attempt on providing a more comprehensive framework for investigating how the organizational culture effect manifests itself, namely through influencing the actor-related elements of KT.

6. Limitations and implications for future research

Although this study has provided us with some valuable insights and findings, the study has some limitations as well and some implications for further research. One limitation is related to our focus on procedural types of knowledge or tacit knowledge. We measured inter-unit KT as unit's adoption of three types of knowledge: technology, documents and reports about products and processes, and best practices and routines. These types of knowledge can be characterized as being more tacit than explicit. However, we did neither measure nor explore the degree of tacitness of these three types of knowledge, and whether the degree of tacitness would have had an effect on the results. For example, tacit knowledge can be difficult and time-consuming to transfer and the higher the degree of tacitness the harder it is to transfer (Zander and Kogut 1995), thus the degree of tacitness might have an effect on the relationship between inter-unit KT and unit performance.

When it comes to our research model, we focused only on the process of KT, which is one topic within the broader field of the knowledge management literature. Knowledge management activities consist of not only the transferring and adoption of knowledge, but also the activities creation and retention of knowledge (DeLong and Fahey 2000). It would have been interesting to see how the creation and retention activities impacts unit performance, and especially how the two leadership cultures would affect how knowledge is created and retained in and between units. Inter-unit KT is one of the main advantages for MNCs, but the knowledge has to be created by someone before it can be transferred and adopted by other units and for the knowledge to be an advantage over time, it also has to be retained. Thus, it would be interesting to examine the effect of the two leadership cultures on the other knowledge management activities and test to see whether one culture could be considered as more favorable for facilitating these activities than the other. We would expect that the two leadership cultures would have an influence on the processes of knowledge creation and retention since we found that the transformational culture had a significant influence on the process of KT, through its influence on the relational and cognitive actor conditions, and the processes of creation and retention could therefore also be influenced. It is the individuals of the organization that is creating and retaining much of the knowledge in organizations and one would expect that these two processes could be influenced in a similar vein as with the KT process. For example, transactional

culture could have a negative influence on knowledge creation since in this culture, mistakes are punished and not seen as learning opportunities, where creativity and risk taking is hampered, which are important factors that needs to be in place in order for knowledge creation to occur. Future research should therefore examine if two leadership cultures should be considered as influencing factors or determinants of the other knowledge management activities and how they influence these other activities, since this would give us a more comprehensive understanding of the two leadership culture profiles.

After examining the relationship between units' leadership culture and inter-unit KT we managed to empirically establish the relationship between the transformational culture and inter-unit KT. We used Bass and Avolio's (1992) ODQ framework to measure the leadership culture in each unit. However, one limitation of the ODQ framework in its current state is that it only provides an overall culture score and does not specify how the various sub-dimensions used to describe the two leadership styles influence various organizational aspects. In its current state the ODQ framework only allows you to analyze the associations between the variables and we have therefore only managed to empirically establish the relationship between a unit's leadership culture and inter-unit KT, without having empirical support to establish how and why inter-unit KT is actually influenced by the leadership cultures. We argued, based on similar studies and with logical and theoretical arguments, that the two leadership cultures would have a different effect on inter-unit KT, because they create very different cognitive and relational actor conditions for inter-unit KT. However, we have not found empirical evidence to support our conceptualization of the leadership cultures effect on the actor related elements of KT nor have the causality of these effects been empirically established. It would therefore be an interesting area of future research to try to develop the ODQ framework further, with better specified sub-dimensions that isolate and display the effects of the four I's, contingent reward and management by exception, which would enable researcher to empirically establish the isolated and actual influence of the two leadership cultures and test to see if our conceptualization of the cognitive and relational actors conditions is valid.

The results from our analysis showed that there is a positive and significant relationship between inter-unit KT and unit's performance. The results also indicated a positive and significant relationship between transformational

culture and inter-unit KT, while no relationship was found between transactional culture and inter-unit KT. From these results it is possible to argue that managers in MNCs should try to foster a transformational culture to improve the performance of the units, since this is a culture that is conducive for inter-unit KT. However, this is only an implicit indirect argument and our results do not provide any statistical support for this argument. However, it would be an interesting line for future research to do an empirical examination to test whether or not the leadership culture influences performance through the mediating effect of KT. Moreover, it would be very interesting to see if it really is the case that MNCs should foster and develop a transformational culture, and not a transactional culture, in order to improve its performance because of the possible mediating effect through inter-unit KT. A mediating analysis of these variables would provide a more thorough understanding of which culture is best for increasing unit performance.

Another limitation of our study is related to the sample size and the sample itself. While the sample size of 66 units obtained in this study was acceptable, a larger number of units involved in the analysis could have provided more reliable results. Also, the fact that this study only investigated the research questions and hypotheses in 66 units in a single Norwegian MNC that provides consulting and certification services in the oil and gas industry, the results of our study may not be generalizable to other companies, especially companies operating in other industries and companies that are based out of different countries. Future research should therefore test our research model in other research settings or business environments, for example in other knowledge-intensive industries where knowledge is an essential asset, like IT or medical R&D. By studying multiple industries and having a comparative analysis, research can address the question if business environments have an effect on our proposed research model and relationships. More specifically to test if these differences matter for the leadership cultures influence on inter-unit KT and if the differences matter for predicting the relationship between inter-unit KT and unit performance in various MNCs.

One limitation to our statistical analysis is related to our use of control variables. We included the control variables: unit size, formal integration of people and employees' ability in our regression models. These control variables were included since they had been identified as important factors when testing the

relationship between our variables of interest. However, after running our regression analysis to test our proposed hypotheses, not all of the control variables were displaying significant effects. However, this is not a crucial limitation since the control variables may not be significant because of the limited sample size and it does not mean that the relationships between them are unimportant or irrelevant when predicting the dependent variables.

The last limitation is related to the scale that was used to measure the constructs in our models. For our data collection and analysis we relied on self-reported questionnaires that contain mostly perceptual measures, which might have several potential risks and biases (Podsakoff et al. 2003). For example, when providing respondents with answering options, the respondents may interpret the options (Likert scale 1-7) differently, something that can have an effect on the dataset. Or for example, the respondent may be unwilling to answer truthfully because they do not want to present themselves in an unfavorable and negative manor, also known as desirability bias (Podsakoff et al. 2003). However, many of the previous studies on knowledge transfer and organizational performance have used similar perceptual measures, and there is also agreement among researcher in the field of the cognitive perception literature that perceptual measures can be used and considered as valid measures (Podsakoff et al. 2003). Moreover, measuring the concept of KT with purely objective data can give major methodological challenges and practical problems (Gupta and Govindarajan 2000, a) which supports the use of perceptual measures. For example, tacit knowledge, compared to explicit knowledge, can be extremely difficult to measure and observe by an external researcher. The transfer of knowledge, especially tacit, tends to be slow and difficult to observe because of its complex and specific nature, which would require researchers to undertake a study of each transfer that could be over multiple years (Zander and Kogut 1995). Thus, while the measures of the constructs could have been improved by including more direct and objective measures (for example financial data on unit performance), the use of the perceptual measures is consistent with the research questions and constructs in the study.

Reference list

- Alavi, M., T. R. Kayworth, T. R. and D. E. Leidner. 2006. “An empirical examination of the influence of organizational culture on knowledge management practices”. *Journal of management information systems* 22 (3): 191-224.
- Analoui, B. D., C. H. Doloriert and S. Sambrook. 2012. “Leadership and knowledge management in UK ICT organizations”. *Journal of Management Development* 32 (1): 4-17.
- Argote, L. 1999. *Organizational Learning: Creating, Retaining and Transferring Knowledge*. Norwell, MA.: Kluwer
- Argote, L. and P. Ingram. 2000. “Knowledge transfer: A basis for competitive advantage in firms”. *Organizational behavior and human decision processes* 82 (1): 150-169.
- Avolio, B. J., D. A. Waldman and F. J. Yammarino, 1991. “Leading in the 1990s: The four I's of transformational leadership”. *Journal of European industrial training* 15 (4): 9-16.
- Babbie, E. R. 2004. *The Basics of Social Research*. California: Wadsworth Publishing Co Inc.
- Barney, J. B. 1995. “Looking inside for competitive advantage”. *The Academy of Management Executive* 9 (4): 49-61.
- Baruch, Y. and B. C. Holtom. 2008. “Survey response rate levels and trends in organizational research”. *Human Relations* 61 (8): 1139-1160.
- Bass, B. M. 1985, *Leadership and Performance*. New York: Free Press.
- Bass, B. M. 1999. “Two decades of research and development in transformational leadership”. *European journal of work and organizational psychology*, 8 (1): 9-32.
- Bass, B. M. and B. J. Avolio. 1992. *Manual for the Organizational Description Questionnaire*. Palo Alto, CA: Mind Garden.
- Bass, B. M. and B. J. Avolio. 1993. “Transformational leadership and organizational culture”. *Public administration quarterly* 17 (1): 112-121.

- Bass, B.M. and B. J. Avolio. 1994. *Improving organizational effectiveness through transformational Leadership*. Thousand Oaks, CA: Sage Publications
- Bass, B. M. and R. E. Riggio. 2006. *Transformational Leadership*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Becker, M. C. and M. P. Knudsen. 2006. "Intra and inter-organizational knowledge transfer processes: Identifying the missing links". DRUID working paper no. 06-32.
- Björkman, I., W. Barner-Rasmussen and L. Li. 2004. "Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms". *Journal of International Business Studies* 35 (5): 443-455.
- Brachos, D., K. Kostopoulos, K. E. Soderquist and G. Prastacos. 2007. "Knowledge effectiveness, social context and innovation", *Journal of Knowledge Management* 11 (5): 31-44.
- Bryman, A. and E. Bell. 2011. *Business Research Methods*. New York: Oxford University Press Inc.
- Bryant, S. E. 2003. "The role of transformational and transactional leadership in creating, sharing and exploiting organizational knowledge". *Journal of Leadership & Organizational Studies*, 9 (4): 32-44.
- Bums, J. M. 1978. *Leadership*. New York: Harper & Row.
- Cohen, W. M. and D. A. Levinthal. 1990. "Absorptive capacity: a new perspective on learning and innovation". *Administrative science quarterly* 35 (1): 128-152
- Davenport, T. H. and L. Prusak. 2000. *Working Knowledge—How Organizations Manage What They Know*. Boston: Harvard Business School Press.
- DeLong, D. W. and L. Fahey. 2000. "Diagnosing cultural barriers to knowledge management". *The Academy of management executive*, 14 (4): 113-127.
- Denison, D. R. and A. K. Mishra. 1995. "Toward a theory of organizational culture and effectiveness". *Organization science*, 6 (2): 204-223.

- Deshpandé, R., J. U. Farley and Jr. F. E. Webster. 1993. "Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis". *The journal of Marketing* 57 (1): 23-37.
- DeTienne, K. B., G. Dyer, C. Hoopes and S. Harris. 2004. "Toward a model of effective knowledge management and directions for future research: Culture, leadership, and CKOs". *Journal of Leadership & Organizational Studies*, 10 (4), 26-43.
- Dierickx, I. and K. Cool. 1989. "Asset stock accumulation and sustainability of competitive advantage". *Management science* 35 (12): 1504-1511.
- Dyer, J. H. and K. Nobeoka. 2000. "Creating and managing a high performance knowledge-sharing network: the Toyota case". *Strategic Management Journal*, 21 (3): 345–367.
- Easterby-Smith, M., M. A. Lyles and E. W. Tsang. 2008. "Inter-organizational knowledge transfer: Current themes and future prospects". *Journal of management studies* 45 (4): 677-690.
- Eisenhardt, K. M. and F. M. Santos. 2002. "Knowledge-based view: A new theory of strategy". In *Handbook of strategy and management*, edited by A. Pettigrew, H. Thomas, and R. Whittington , 139-164. Sage Publications.
- Foss, N. J. and T. Pedersen. 2004. "Organizing knowledge processes in the multinational corporation: an introduction". *Journal of International Business Studies*, 35 (5): 340-349.
- Goh, S. C. 2002. "Managing effective knowledge transfer: an integrative framework and some practice implications". *Journal of knowledge management* 6 (1): 23-30.
- Gold, A. H., A. Malhotra and A. H. Segars. 2001. "Knowledge Management: An Organizational Capabilities Perspective". *Journal of Management Information Systems* 18 (1): 185-214.
- Ghoshal, S. and C. A. Bartlett. 1988. "Creation, adoption, and diffusion of innovations by subsidiaries of multinational corporations". *Journal of International Business Studies* 19 (3): 365-388.

- Grant, R. M. 1996. "Toward a knowledge-based theory of the firm". *Strategic management journal* 17: 109-122.
- Gupta, A. K. and V. Govindarajan. 2000, a. "Knowledge flows within multinational corporations". *Strategic management journal* 21 (4): 473-496.
- Gupta, A. K. and V. Govindarajan. 2000, b. "Knowledge management's social dimension: lessons from Nucor Steel". *Sloan Management Review* 42 (1): 71-80.
- Hansen, M. T. 1999. "The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits". *Administrative science quarterly* 44 (1): 82-111.
- Ipe, M. 2003. "Knowledge sharing in organizations: a conceptual framework". *Human Resource Development Review* 2 (4): 337-359.
- Janssens, W., K. Wijnen, P. De Pelsmacker and P. Van Kenhove. *Marketing research with SPSS*. Harlow Essex: FT Prentice Hall.
- Jing, F. F. and G. C. Avery. 2008. "Missing links in understanding the relationship between leadership and organizational performance". *International Business & Economics Research Journal* 7 (5): 67-78.
- Jonsson, A. and U. Elg. 2006. "Knowledge and knowledge sharing in retail internationalization: IKEAs entry into Russia". *The International Review of Retail, Distribution and Consumer research* 16 (2): 239-256.
- Kim, K., J. H. Park, J. H. and J. E Prescott. 2003. "The global integration of business functions: a study of multinational businesses in integrated global industries". *Journal of International Business Studies*, 34 (4): 327-344.
- Kline, R. B. 1998. *Principles and Practice of Structural Equation Modeling*. New York: The Guilford Press.
- Kogut, B. and U. Zander 1992. "Knowledge of the firm, combinative capabilities, and the replication of technology". *Organization science* 3 (3): 383-397.

- Kutner, M. H., C. Nachtsheim and J. Neter. 2004. *Applied linear regression models*. McGraw-Hill/Irwin.
- Lawson, B., K. J. Petersen, P. D. Cousins and R. B. Handfield. 2009. “Knowledge sharing in interorganizational product development teams: The effect of formal and informal socialization mechanisms”. *Journal of Product Innovation Management* 26 (2): 156-172.
- Lee, H. and B. Choi. 2003. “Knowledge management enablers, processes, and organizational performance: an integrative view and empirical examination”. *Journal of management information systems* 20 (1): 179-228.
- Levin, D. Z. and R. Cross. 2004. “The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer”. *Management science* 50 (11): 1477-1490.
- Lok, P., R. Westwood and J. Crawford 2005. “Perceptions of organizational subculture and their significance for organisational commitment”. *Applied Psychology* 54 (4): 490-514.
- McEvily, S. K. and B. Chakravarthy. 2002. “The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge”. *Strategic Management Journal* 23 (4): 285-305.
- Minbaeva, D. B. 2008. “HRM practices affecting extrinsic and intrinsic motivation of knowledge receivers and their effect on intra-MNC knowledge transfer”. *International Business Review* 17 (6): 703-713.
- Minbaeva, D. B. 2007. “Knowledge transfer in multinational corporations”. *Management International Review* 47 (4): 567-593.
- Minbaeva, D. B. and S. Michailova. 2004. “Knowledge transfer and expatriation in multinational corporations: the role of disseminative capacity”. *Employee relations* 26 (6): 663-679.

- Minbaeva, D., T. Pedersen, I. Björkman, C. F. Fey and H. J. Park. 2003. “MNC knowledge transfer, subsidiary absorptive capacity, and HRM”. *Journal of international business studies*, 34 (6): 586-599.
- Nonaka, I. 1994. “A dynamic theory of organizational knowledge creation”. *Organization science*, 5 (1): 14-37.
- Nonaka, I. and G. Von Krogh. 2009. “Perspective-tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory”. *Organization science*, 20 (3), 635-652.
- O'Dell, C., and C. J. Grayson. 1998. “If only we knew what we know: Identification and transfer of internal best practices”. *California management review* 40 (3): 154-174
- Ogbonna, E. and L. C. Harris. 2000. “Leadership style, organizational culture and performance: empirical evidence from UK companies”. *International Journal of Human Resource Management*, 11 (4): 766-788.
- Osterloh, M. and B. S. Frey. 2000. “Motivation, knowledge transfer, and organizational forms”. *Organization science*, 11 (5), 538-550.
- Paulin, D. and K. Suneson. 2012. “Knowledge Transfer, Knowledge Sharing and Knowledge Barriers-Three Blurry Terms in KM”. *Electronic Journal of Knowledge Management*, 10 (1): 81-91.
- Parry, K. W. and S. B. Proctor-Thomson. 2001. “Testing the validity and reliability of the organizational description questionnaire (ODQ)”. *International Journal of Organisational Behaviour* 4 (3): 111-124.
- Pedersen, T., B. Petersen and D. Sharma. 2003. “Knowledge transfer performance of multinational companies”. In *Governing Knowledge-Processes*, edited by V. Mahnke and T. Pedersen, 69-90. Gabler Verlag.
- Persson, M. 2006. “The impact of operational structure, lateral integrative mechanisms and control mechanisms on intra-MNE knowledge transfer”. *International Business Review*, 15 (5): 547-569.

- Podsakoff, P. M., S. B. MacKenzie, J. Y. Lee and N. P. Podsakoff. 2003. "Common method biases in behavioral research: a critical review of the literature and recommended remedies". *Journal of applied psychology* 88 (5): 879-903.
- Polanyi, M. 1967. *The tacit dimension*. New York: Garden City
- Politis, J. D. 2001. "The relationship of various leadership styles to knowledge management". *Leadership & Organization Development Journal* 22 (8): 354-364.
- Politis, J. D. 2002. "Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequences for performance". *Leadership & Organization Development Journal* 23 (4): 186-197.
- Reagans, R.. and B. McEvily. 2003. "Network structure and knowledge transfer: The effects of cohesion and range". *Administrative science quarterly* 48 (2): 240-267.
- Reed, R.. and R. J. DeFillippi. 1990. "Causal ambiguity, barriers to imitation, and sustainable competitive advantage". *Academy of management review* 15 (1): 88-102.
- Schein, Edgar H. (2004). *Organizational Culture and Leadership*. Third edition. San Francisco, CA: Jossey-Bass.
- Schein, Edgar H. (2010). *Organizational Culture and Leadership*. Fourth edition. San Francisco, CA: Jossey-Bass.
- Singh, S. K. 2008. "Role of leadership in knowledge management: a study". *Journal of Knowledge Management* 12 (4): 3-15.
- Szulanski, G. 1996. "Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic management journal* 17 (S2): 27-43.
- Szulanski, G. 2003. *Sticky knowledge: barriers to knowing in the firm*. London: Sage Publications.

- Tsai, W. 2001. “Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance”. *Academy of management journal* 44 (5): 996-1004.
- Tsai, W. and S. Ghoshal. 1998. “Social capital and value creation: The role of intrafirm networks”. *Academy of management Journal* 41 (4): 464-476.
- Van Voorhis, C. R. W. and B. L. Morgan. 2007. “Understanding power and rules of thumb for determining sample sizes”. *Tutorials in Quantitative Methods for Psychology* 3 (2): 43-50.
- Van Wijk, R., J. J. Jansen and M. A. Lyles. 2008. “Inter-and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of its Antecedents and Consequences”. *Journal of Management Studies* 45 (4): 830-853.
- Von Nordenflycht, A. 2010. “What is a professional service firm? Towards a theory and taxonomy of knowledge intensive firms.” *Academy of Management Review*, 35 (1): 155-174.
- Zander, U. and B. Kogut. 1995. “Knowledge and the speed of the transfer and imitation of organizational capabilities: An empirical test”. *Organization science* 6 (1): 76-92.
- Zheng, W., B. Yang, B. and G. N. McLean. 2010. “Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management”. *Journal of Business Research* 63 (7): 763-771.

Appendix 1: Measurements of variables

The ODQ: Transformational and transactional culture

Transactional leadership culture	1. We bargain with each other for resources.	Likert 1 - 7
	2. Decisions are often based on precedents.	Likert 1 - 7
	3. Rules and procedures limit discretionary behavior.	Likert 1 - 7
	4. You get what you earn – no more, no less.	Likert 1 - 7
	5. There is strong resistance to changing the old ways of doing things.	Likert 1 - 7
	6. It's hard to find key people when you need them most.	Likert 1 - 7
	7. Bypassing channels is not permitted.	Likert 1 - 7
	8. One or two mistakes can harm your career.	Likert 1 - 7
	9. Decisions often require several levels of authorization before action can be taken.	Likert 1 - 7
	10. Agreements are specified and then fulfilled.	Likert 1 - 7
	11. People are hesitant to say what they really think.	Likert 1 - 7
	12. Units have to compete with each other to acquire resources.	Likert 1 - 7
	13. Deviating from standard operating procedures without authorization can get you into trouble.	Likert 1 - 7
	14. People often try to avoid responsibility for their actions.	Likert 1 - 7

Transformational leadership culture	15. People go out of their way for the good of the institution.	Likert 1 – 7
	16. There is continual search for ways to improve operations.	Likert 1 – 7
	17. Mistakes are treated as learning opportunities.	Likert 1 – 7
	18. When you are unsure of what to do, you can get a lot of help from others.	Likert 1 – 7
	19. We trust each other to do what's right.	Likert 1 – 7
	20. We are encouraged to consider tomorrow's possibilities.	Likert 1 – 7
	21. New ideas are greeted with enthusiasm.	Likert 1 – 7
	22. Individual initiative is encouraged.	Likert 1 – 7
	23. We strive to be the best in whatever we do.	Likert 1 – 7
	24. Stories are told of the challenges we have overcome.	Likert 1 – 7
	25. The unwritten rule is to admit mistakes, learn from them, and move on.	Likert 1 – 7
	26. You advance depending on your initiative and ability.	Likert 1 – 7
	27. We share the common goal of working towards the organization's success.	Likert 1 – 7
	28. We encourage a strong feeling of belonging.	Likert 1 – 7

Knowledge transfer

Adoption of technology	1. We adopt technology from other organizational units.	Likert 1 – 7 (very seldom – very frequent)
	2. We adopt technology from the head quarter.	Likert 1 – 7)
Adoption of documents and reports	3. We adopt documents and reports containing new knowledge about services/products or production processes produced by other organizational units.	Likert 1 – 7
Adoption of best practices	4. We adopt organizational practices and routines developed in other organizational units.	Likert 1 – 7

Unit performance

Performance	1. How satisfied are you with your market share?	Likert 1 - 7
	2. How satisfied are you with your profitability?	Likert 1 - 7
	3. How satisfied are you with your access to the market?	Likert 1 - 7
	4. How satisfied are you with the over all customers' satisfaction?	Likert 1 – 7

Formal Integration

<p>Integration mechanisms - people</p>	<ol style="list-style-type: none"> 1. We have liaison personnel to integrate activities internationally. 2. We have meetings where managers from different international locations meet. 3. Committee meets regularly to plan and integrate activities internationally. 	<p>Likert 1 - 7</p>

Employees' ability

<ol style="list-style-type: none"> 1. How do you assess the quality of your unit's employees compared to your competitors? <ol style="list-style-type: none"> 1. Overall ability 2. Job-related skills 3. Educational level 	<p>Likert 1 – 7 (far below average - far above average)</p>

BI Norwegian Business School

-Preliminary Thesis Report-

Hand in date:

15 January 2014

Thesis supervisor

Paulina Junni

Campus:

BI Oslo

Examination code and name:

GRA 19003 – Preliminary Master Thesis

Program:

Master of Science in Business and Economics

Strategy

Table of content

1. Introduction.....	1
1.1 Background.....	1
1.2. Purpose.....	2
1.3. Research question.....	5
2. Literature review.....	6
2.1 Knowledge transfer.....	6
2.2 Leadership style.....	7
2.2.1 Transformational leadership	7
2.2.2 Transactional leadership	8
3. Working Hypotheses	10
4. Research Methodology	10
4.1 Research Strategy	10
4.2 Research Design.....	11
4.3 Research Method.....	12
5. Time Line	14
6. References	15

1. Introduction

1.1 Background

Interest in the field of knowledge management has increased rapidly among scholars since the beginning of the 1990's (Hoskisson et. al., 1999; Bell De Tienne et. al. 2004), where knowledge management activities has been identified as one of the major tasks of leaders in modern day organizations. As several industries are becoming more specialized and the business environment changes more rapidly, organizations constantly have to strive to have the best knowledge available at all times in order to survive and prosper. Several authors within the knowledge based perspective have argued that knowledge is one of the most valuable assets an organization can possess (Grant 1996; Sewell 2005; McEvily and Chakravarthy 2002). Further on, it has been argued that if knowledge is managed and applied properly it could very well become a source to a firm's competitive advantage (Bryant 2003; Nonaka and Takeuchi 1995). Some aspects of managing knowledge include the organization's processes and ability to create, renew, share, adopt, transfer, retain, exploit and apply relevant knowledge in a way that improves the overall organizational performance (Argote, McEvily and Reagans 2003; Bryant 2003; Analoui, Doloriert and Sambrook 2013).

Leaders play a central role in the process of managing knowledge and some leadership styles are claimed to be better suited to this task of than others (Singh 2008). Transformational and transactional leadership are two styles that have been suggested by scholars and professionals to have an impact on the knowledge management processes. Some studies suggest that transformational is more important for managing knowledge than transactional, others that the two styles have different characteristics that are best suited to different processes/activities of knowledge management, and finally some claim that they are equally important for managing knowledge in organizations (Analoui, Doloriert and Sambrook 2013; García-Morales, Lloréns-Montes and Verdú-Jover 2008; Grant 2003; Singh 2008). All in all it is relatively widespread agreement that leadership plays an important role in ensuring effective knowledge management.

Further on, it is claimed that both the transformational and transactional leadership styles are required in order to manage knowledge effectively (Conger 1999), and that leaders in fact possess and exhibit traits and characteristics from both types, but tends to emphasize one over the other (Bass 1985).

On the other hand, there are also several other factors than leadership that influences the processes of knowledge management, where the knowledge based perspective has contributed a lot to our understanding of the characteristics, attributes and mechanisms of knowledge and the knowledge management process. The existing theories on many of these aspects are relatively well studied with several both qualitative and quantitative studies available. However, the link between knowledge management and leadership styles is a field that has been understudied both from a leadership and knowledge perspective. Several authors points to the importance of leadership in order to succeed with knowledge management activities, but despite of this, the field of exploring and analyzing the link between leadership style and the knowledge management processes is still relatively underdeveloped (Byrant 2003; Bell DeTienne et. al. 2004; Lakshman 2007; García-Morales, Lloréns-Montes and Verdú-Jover 2008; Analoui, Doloriert and Sambrook 2013).

1.2. Purpose

Understanding which of the two leadership styles that are most appropriate for the knowledge management processes is an interesting field of inquiry, where there is a large gap in the literature, especially when it comes to empirical investigations (Byrant 2003; García-Morales, Lloréns-Montes and Verdú-Jover 2008; Bass 1999). Several constructs and links have been suggested by Bryant (2003) when it comes to the role of leadership in creating, exploiting and sharing organizational knowledge. Bryant's article claims that the transformational leadership style is most relevant when it comes to creating and sharing knowledge, while the transactional style is best suited to exploiting knowledge. The purpose of Analoui, Doloriert and Sambrooks (2013) article is to empirically investigate which leadership style, transformational, transactional or passive-avoidance, that is most relevant for managing knowledge. The key finding of that article is that when leaders adopt either transformational or transactional leadership there is a significant increase in knowledge management activities. At the end of the article

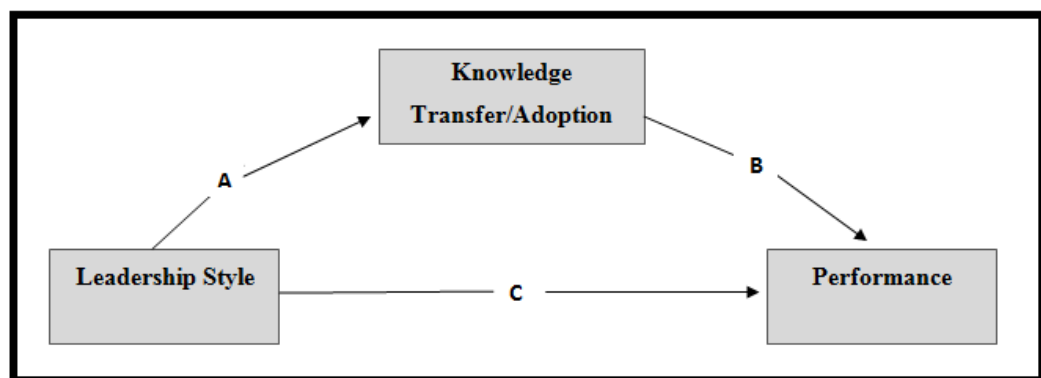
they suggest that: “Further research may also wish to examine how critical leadership is for knowledge management activity, and how the leadership styles adopted by leaders on the front lines of organisations can influence the knowledge management activity of followers.” (Analoui, Doloriert and Sambrook 2013, 15).

Based on the fact that several authors have argued that the literature that examines the link between leadership style and knowledge management processes is lacking and underdeveloped, this paper want to address this issue by supplementing the existing gap in the literature. This paper will conduct an empirical analysis that investigates if there is a statistically significant relationship between transformational and transactional leadership and performance through the influence of the mediating variable of the knowledge management processes.

The contextual setting of the investigation will be with regards to the large Norwegian multinational corporation Det Norske Veritas (DNV) that operates subsidiaries in locations all over the world. DNV can be characterized as a knowledge intensive firm (KIF) that has a highly professional workforce that consists of experts and highly knowledgeable individuals. Effective knowledge management thus becomes a very important task for DNV in order to gain/maintain a strong competitive position in the market, where knowledge management could be argued as the most important process for achieving a competitive advantage. This context provides a fruitful and relevant setting for the investigation for primarily two reasons. First, that DNV is a knowledge intensive firm that is dependent on effective knowledge management in order to succeed with their business. Second, that DNV is a large MNC with several subsidiaries, where effective and efficient knowledge transfer and adoption between subsidiaries is one of the primary reasons for the existence of MNC's. Gupta and Govindarajan (2000) has argued that MNC's exist because this type of organizing has a much better ability to effectively engage in knowledge transfer and adoption through more efficiently developed procedures and routines compared to markets. Based on these arguments it becomes evident that the knowledge management process becomes highly relevant for MNC's and KIF's in order to improve their performance. The knowledge management process has been defined in numerous ways by several authors, but some of the activities that are frequently mentioned is knowledge creation, retention/exploitation and transfer/sharing (Bryant 2003;

Argote, McEvily and Reagans 2003; Bell DeTienne et. al. 2004; Gupta and Govindarajan 2000). Given the primary reason for the existence of MNC's and that KIF's are highly dependent on leveraging superior knowledge in order to achieve a competitive advantage, it can plausibly be argued that knowledge transfer and adoption are some of the most important and relevant aspects to investigate when it come to the knowledge management process. Given the importance of this process, this paper will investigate the degree of knowledge transfer/adoption between the different subsidiaries of DNV.

The figure below illustrates which constructs and effects the analysis will seek to investigate and provide empirical support/evidence to.



Based on the above discussion, the main purpose of this paper is to examine the relationships suggested in the figure. First we are primarily interested in analyzing how the leadership styles, transformational and transactional, influence knowledge transfer/adoption (Construct A).

Second, how knowledge transfer/adoption influence performance (Construct B). Existing evidence suggest that knowledge transfer have a positive influence on organizational performance (Argote and Ingram 2000; Van Wijk, Jansen and Lyles 2008), and that this part of the knowledge management process is especially relevant when investigating a MNC's subsidiary performance (Lin et. al. 2013). Chang, Gong and Peng (2012) argue that knowledge transfer is one of the key determinants for explaining differences in subsidiary performance. They also suggest that future research should focus on further examining this link and provide more empirical support to their findings. By investigating the link between knowledge transfer/adoption and subsidiary performance, this paper could contribute to the existing literature by providing another empirical investigation that further examines this relationship and the effect.

Third, how the leadership styles, transformational and transactional, influence performance (Construct C). Several reasons indicate that leadership style has an effect on organizational performance. The leaders of an organizations plays a pivotal role in helping employees reaching their goals and coordinating them so that the collective effort is as best as possible, and effective leadership is seen as a source of sustained competitive advantage for organizational performance (Avolio, 1999). Previous studies have shown that leadership has direct effects on performance measures like: customer and staff satisfaction and financial performance. Jing and Avery (2008) studied “missing links” in understanding the relationship between leadership and organizational performance, however they found that many of the existing findings in the literature are inconclusive and difficult to interpret. Some scholars argue that leadership has positive effects on performance, while others do not. Therefore, this study will contribute to the literature by empirically testing the effect and if there is a difference between the two leadership styles, transformational and transactional, on subsidiary performance.

1.3. Research question

Evidence from the above arguments suggests that the literature is underdeveloped when it comes to studying the link between leadership styles and the knowledge management process. Further, we have argued that knowledge transfer/adoption is highlighted as particular relevant for explaining differences in subsidiaries' performance in a knowledge intensive MNC. Thus, the research question relevant for the analysis in this paper is:

How does the transformational and transactional leadership style influence performance through the mediating variable knowledge transfer/adoption?

Answering this research question will contribute to the literature of both the leadership and knowledge based perspective, by providing empirical evidence and enhancing our understanding of the constructs suggested in the model above.

2. Literature review

2.1 Knowledge transfer

As mentioned earlier the knowledge based perspective of the firm has received considerable attention among strategic management scholars during the last decades. The knowledge based perspective is a broad concept that captures a large variety of sub-categories of research within this field, for example knowledge as a process, object, capability, resource etc. (Alavi and Leidner 2001). This paper takes a process view on knowledge and defines knowledge management in a similar vein as several other authors within this field of inquiry, namely as; the process of creating, transferring and retaining knowledge at different levels between different units (Argote, McEvily and Reagans 2003; Alavi and Leidner 2001). Earlier in the paper it has been stated that given the purpose and research context of this investigation, both the transfer and adoption part of the knowledge management process will be the primary focus of this study. Organizational knowledge transfer has been found to have a positive effect on financial performance (Lyles & Salk 1996), and it has been suggested that transfer and adoption of new knowledge between organizational units is one of the most important contributors to achieve a competitive advantage (Kogut and Zander 1992; Gupta and Govindarajan 2000), this is especially important for a knowledge intensive firm. Knowledge transfer is one of the key processes of knowledge management and it has been defined as the inflows and outflows of either tacit or explicit knowledge (Gupta and Govindarajan 2000). It is common to distinguish between explicit and tacit knowledge, where tacit knowledge is related with “knowing how”, and explicit knowledge is related with “knowing about” (Grant 1996). This distinction matters for the ease of the knowledge transfer, where tacit often is more difficult to transfer, replicate and reproduce than explicit knowledge.

Knowledge transfer occurs when knowledge is exchanged between two different actors, transferred by the sending subsidiary and adopted/received by another, knowledge transfer therefore occurs in a relationship between a source and a target unit (Persson 2006). Similar to Gupta and Govindarajan (2000), this paper takes a “nodal” level of analysis that examines whether the individual subsidiary transfer or adopts knowledge from other subsidiaries or head quarters. This leads

to four different knowledge flows; 1. Inbound subsidiary knowledge, 2. Inbound HQ knowledge, 3. Outbound subsidiary knowledge, 4. Outbound HQ knowledge.

2.2 Leadership style

Leadership style has been highlighted as a strategic factor that influences innovation and knowledge (Nonaka and Takeuchi 1995). From our research question we have chosen to investigate two different leadership styles; transformational and transactional leadership, and how they impact the management of knowledge and unit performance.

2.2.1 Transformational leadership

Bernard M. Bass (1985) extended the work of James M. Burns (1978), who distinguished between “transactional” and “transforming leaders”. Bass (1985) introduced the term “transformational” instead of “transforming” and explained how transformational leadership could be measured, as well as how it impacts workers’ motivation and performance. Continuing on Bass’ work, Avolio, Waldman and Yammarino (1991) introduced the “4 Is of transformational leadership” that characterizes the transformational leader. These four I’s include idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. Whether a leader’s style is transformational or not, is measured in terms of his or hers influence on the employees (Bass 1985).

If the employees trust, admire, respect and are loyal to the leader, the employees can be motivated and stimulated to put more effort into their work than what is formally required and stimulates them to take greater responsibility and ownership of their own work. Transformational leaders takes more personal responsibility for the development of their employees (Bass and Avolio 1993), and the leader creates and offers them a shared vision and identity that all the employees feels a part of, which again stimulates greater excitement and identification with the organization. Because of this, transformational leaders can foster a prosperous culture of learning and growth (Analoui, Doloriert and Sambrook 2013).

When it comes to the effect of transformational leadership on knowledge management, several authors have found that there is a positive and significant effect from transformational leadership on an organization’s knowledge management activities (Analoui, Doloriert and Sambrook 2013). The leader

provides the employees with more autonomy instead of strict rules, formalized routines and boundaries, the employees get more freedom to create new ideas, test their new knowledge and share it with others (Sosik 1997). When the leader encourages intellectual development and pays attention to each worker, it can motivate them to create and share knowledge which again can stimulate too and generate higher levels of innovation from the organization's workers (Bryant 2003; Gupta and Govindarajan 2000).

As mentioned earlier, knowledge is a valuable resource, and Løwendahl (2005) explains that for knowledge intensive firms (KIFs), which has a high degree of "knowledge workers", it is important to exert "cat herding", which is a distinct way of managing the particular characteristics of knowledge workers. Van Nordenflycht (2010) further explains that one problem related to managing highly knowledge intensive workers is that it can be difficult to direct them through strict and formalized rules and procedures, given their need for individual autonomy in their work situation. Intellectually skilled and knowledgeable workers are the most valuable asset for a knowledge intensive organization and they are often in a strong bargaining position relative to the firm. Because of this and that they want a high degree of autonomy with low degree of supervision and control from leaders, they can be difficult to manage and direct for an organization. The best way to direct them is through guidance and collaboration instead of imposing strict rules and commands (Von Nordenflycht 2010). This is in line with the theory and the characteristics of transformational leadership which indicates that transformational leadership style fits well with the needs of knowledge intensive workers.

2.2.2 Transactional leadership

Bass (1985) contrasts transformational leaders with transactional leaders. While a transformational leader tries to inspire and motivate the employees to perform as best as possible through inspiration and providing them with autonomy, the most important aspect for the transactional leader is that the employees have a solid and consistent performance that reaches identified goals. Bass and Avolio (1993) argue that transactional leadership consists of two dimensions: Contingent Reward and Management-by-exception. Contingent reward emphasizes that the leader clarifies what they expect of their employees and what they can expect to

get in reward when they achieve their goals. By doing this, both individuals and groups should achieve the expected level of performance that has been set by the organization. Management-by-exception deals with how the leader sets the standards of compliance, what ineffective performance is, and can use punishment towards those employees who do not follow and comply with the standards, rules and procedures that has been set. This implies that the leader will engage in a high degree of controlling and monitoring the employees behavior and when they deviate from the standards or commits mistakes/errors the leader will take corrective actions. To motivate the employees to reach their goals, the leader can give rewards or punishment accordingly. When applying a transactional leadership style there is a close connection between goals and rewards, thus the relationship between the leader and employee is essentially an economic transaction (Bass 1985), and the employees will not be motivated to go out of their way to do more than what is formally required of them in their completion of the task.

Less is known in the literature when it comes to the relationship between the transactional leadership and the knowledge management process. According to Analoui, Doloriert and Sambrook (2013), several authors have found mixed results regarding the effect transactional leadership has on the knowledge management process. Politis (2002) found that contingent reward has a negative effect on some of the knowledge management processes since contingent rewards will have an impact on and reduce the employees' autonomy. When knowledge workers autonomy decreases it is likely to also decrease knowledge creation and transfer among employees (Sosik 1997). Thus, reducing employees' autonomy, especially for knowledge intensive workers, will most likely be non-beneficial and unproductive for a KIF (Ehin 2008). The same goes for management-by-exception, since control and monitoring can reduce the motivation of knowledge intensive workers (Von Nordenflycht 2010). Thus, transactional leadership may have a negative effect on knowledge management since this style can limit the employees' autonomy and increase control and monitoring of knowledge intensive workers. However, there is also evidence that "transactional leadership style is positively and significantly related to an organization's knowledge management activity" (Analoui, Doloriert and Sambrook 2013, 13). Contingent rewards could also be important for the motivation of knowledge intensive

workers. By balancing autonomy, control and rewards a manager can increase the knowledge activities (Eppler and Sukowski 2000), which supports that the transactional leadership style has a positive effect on knowledge management. Bryant (2003) also suggests that the transactional leadership style is positively related to exploiting and retaining knowledge.

3. Working Hypotheses

Based on the findings in the literature review, the following six hypotheses were developed;

Hypothesis 1A: *At least one element of transformational leadership influence positively toward performance.*

Hypothesis 1B: *At least one element of transactional leadership influence positively toward performance.*

Hypothesis 2A: *Transformational leadership will positively influence knowledge transfer.*

Hypothesis 2B: *Transactional leadership will positively influence knowledge transfer.*

Hypothesis 3: *Knowledge transfer has a positive effect on performance.*

Hypothesis 4: *Knowledge transfer has a mediating effect on the relationship between leadership styles (transformational and transactional) and performance.*

4. Research Methodology

4.1 Research Strategy

Quantitative research is a research strategy that emphasizes quantification in the collection and analysis of data, and it utilizes a deductive approach to assert the relationship between theory and research (Bryman and Bell 2011). Qualitative research has over the last decades gradually become more influential when conducting business research, but quantitative research has long traditions for being the dominant strategy when conducting business research. Since our aim is to empirically test several hypotheses that we have devised from existing

literature, our research is in line with a quantitative approach. Quantitative research emphasizes the testing of theories (Bryman and Bell 2011), and we want to test the effect of our independent variables (transformational and transactional leadership style) on the dependent variable (performance) through the mediating variable (knowledge transfer).

4.2 Research Design

The design of our research can be characterized as cross-sectional, which is a design that entails the collection of data from multiple cases at a single point in time to examine patterns of association between multiple variables (Bryman and Bell 2011). The most common form of a cross-sectional design is social survey research, which is exactly what has been utilized in this paper. Survey research is a great way of collecting original data for describing a population too large to observe directly (Babbie 2004), and provides an opportunity to access attitudes and opinions otherwise not possible to obtain. Understanding how employees' and leaders' perceive the leadership style present in an organization and measuring degree of knowledge transfer are two examples of how survey data can be utilized to understand various phenomena that could not otherwise be observed directly over a large population.

The context and level of analysis of this research paper will be on the organizational unit level of a large multinational organization. More specifically the study will be conducted to analyze patterns of behavior between different subsidiaries of DNV around the world. From DNV's webpage they have identified their core business as classification, certification, expertise, technical assurance and assistance within the maritime, oil and gas, and energy industries. They have operations in more than 100 countries with approximately 16000 professionals. The fact that DNV is a large multinational knowledge intensive firm provides a context that is beneficial for investigating the proposed research question. First, since the purpose of this paper is to investigate if leadership style has an effect on performance through the effect of the mediating variable knowledge transfer and adoption it makes sense to analyze how this differs from subsidiary to subsidiary. Second, the paper benefits from analyzing only one organization and its subsidiaries since they will tend to have, at least to some degree, the same basic routines and procedures for conducting business. Thereby

our study will be able to analyze more isolated the effects without including as many control variables as if one was to investigate different firms that might also be operating in different industries. However, it is most likely that several other factors might influence the effect and relationships under investigation, which will be identified further throughout this text. It could perhaps be influenced by for example different predispositions of national culture, size of the subsidiary etc.

4.3 Research Method

Our primary data is collected from a survey that was conducted by a team of researchers at BI Norwegian Business School Oslo in 2007. In order to gather the relevant data they contacted several employees and leaders from various subsidiaries of DNV and ask them to do a self-completion questionnaire. Such a self-completion questionnaire is one of the main instruments for gathering data using a social survey design (Bryman and Bell 2011). The questionnaire was distributed to 1586 employees and 184 leaders within DNV. The sample of the 1586 employees and 184 leaders were chosen to be a representative subset of the population of around 16 000 employees in DNV. The response rate of the employee questionnaire was approximately 57 % and 71% from the leaders, which is a relatively high response rate. The employee questionnaire focus on global knowledge management practices, leadership and global work practices, and the leaders' questionnaire focus on global knowledge management, organizational performance, strategic orientation and leadership. Given the research question of this paper, its focus will be on the data about the two different leadership styles, knowledge transfer, performance of the subsidiaries and possible control variables (alternative explanatory factors) that might be included later in the analysis.

To measure transformational leadership culture and transactional leadership cultures the Organizational Description Questionnaire (ODQ) was used, which was developed by Bass and Avolio (1993) and is a well established method of measuring the two leadership styles. ODQ is a questionnaire with twenty-eight questions that explores the relationship between the leadership style and the organizational culture. It is measured on how the employees perceive the culture in their unit, department or organization (in our case: unit) to be using transformational or transactional leadership styles. The perception of the

leadership style will then place the unit on a nine point scale, spanning cultures such as: Bureaucratic, Coasting and Highly Developed cultures.

Authors have claimed that there are several ways to measure if knowledge is transferred and this is often dependent on how you define the knowledge that is transferred (Van Wijk, Jansen and Lyels 2008; Alvi and Leidner 2001). Szulanski (1996) highlights transfer of best practice as one important measure of knowledge transfer and adoption, further on, Persson (2006) highlights transfer of technology, documents and reports as important measures that captures knowledge transfer. These three measures of knowledge transfer are adopted for the investigation of this paper.

The leaders were asked several questions related to the performance of their subsidiary, which is the dependent variable of this study. To measure subsidiary performance the leaders were asked questions related to their subjective opinion of how satisfied they are with regards to for example, market share, profitability and budget goal achievement. Other more objective measures of performance is also included, which are related to financial performance and is measured through exact numbers or percentage increase/decrease of profit and sales.

Most of the questions were answered and measured by the well known Likert scale, which is a common method to measure social survey research (Bryman and Bell 2011). In this survey a 7 point Likert scale was adopted.

5. Time Line

January

- January 15th: Deadline for handing in the Preliminary Master Thesis Report
- Continue with the literature review
- Clarify the research question and hypotheses

February

- Cleaning and matching of data
- Analysis

March

- Analysis

April

- Writing on the thesis

May

- Finish draft

June

- June 1st: Hand in draft

July

- Work on corrections
- Submit Final Theses

September

- September 1st: Deadline for submission of Final Thesis.

6. References

- Alavi, M., & Leidner, D. E. 2001. "Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues". *MIS quarterly*, 25 (1): 107-136.
- Analoui, B. D., Doloriert, C. H., & Sambrook, S. 2013. "Leadership and knowledge management in UK ICT organizations". *Journal of Management Development*, 32 (1): 4-17.
- Argote, L., & Ingram, P. 2000. "Knowledge transfer: A basis for competitive advantage in firms". *Organizational behavior and human decision processes*, 82 (1): 150-169.
- Argote, L., McEvily, B., & Reagans, R. 2003. "Managing knowledge in organizations: An integrative framework and review of emerging themes". *Management science*, 49 (4): 571-582.
- Avolio, B. J., Waldman, D. A., & Yammarino, F. J. 1991. "Leading in the 1990s: The four I's of transformational leadership". *Journal of European industrial training*, 15 (4): 9-16.
- Babbie, E.R., 2004. *The practice of social research* 10th ed., Belmont, Calif.: Thomson/Wadsworth.
- Bass, B.M. 1985. *Leadership and Performance Beyond Expectations*. New York, NY: Free Press.
- Bass, B. M. 1999. "Two decades of research and development in transformational leadership". *European Journal of Work and Organizational Psychology*, 8 (1): 9-32.
- Bass, B. M., & Avolio, B. J. 1993. "Transformational leadership and organizational culture". *Public administration quarterly*, 17 (1): 112-121.
- Bell De Tienne, K., Dyer, G., Hoopes, C. and Harris, S. 2004. "Toward a model of effective knowledge management and directions for future research: culture, leadership, and CKOs". *Journal of Leadership and Organizational Studies*, 10 (4): 26-43.

-
- Bryant, S. E. 2003. "The role of transformational and transactional leadership in creating, sharing and exploiting organizational knowledge". *Journal of Leadership & Organizational Studies*, 9 (4): 32-44.
- Bryman, A. and E. Bell. 2011. *Business Research Methods*. New York: Oxford University Press Inc.
- Burns, J. M. 1978. *Leadership*. New York: Harper & Row.
- Chang, Y. Y., Gong, Y., & Peng, M. W. 2012. "Expatriate knowledge transfer, subsidiary absorptive capacity, and subsidiary performance". *Academy of Management Journal*, 55 (4): 927-948.
- Conger, J. A. 1999. "Charismatic and transformational leadership in organizations: An insider's perspective on these developing streams of research". *The Leadership Quarterly*, 10 (2): 145-179.
- Ehin, C. 2008. "Un-managing knowledge workers". *Journal of Intellectual Capital*, 9 (3): 337-50.
- Eppler, M.J. and Sukowski, O. 2000. "Managing team knowledge: core processes, tools and enabling factor". *European Management Journal*, 18 (3): 334-41.
- García-Morales, V. J., Lloréns-Montes, F. J., & Verdú-Jover, A. J. 2008. "The Effects of Transformational Leadership on Organizational Performance through Knowledge and Innovation". *British Journal of Management*, 19 (4), 299-319.
- Grant, R. M. 1996. "Toward a knowledge-based theory of the firm". *Strategic management journal*, 17: 109-122.
- Gupta, A. K., & Govindarajan, V. 2000. "Knowledge flows within multinational corporations". *Strategic management journal*, 21 (4): 473-496.
- Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. 1999. "Theory and research in strategic management: Swings of a pendulum". *Journal of management*, 25 (3): 417-456.

- Jing, F. F., & Avery, G. C. 2008. "Missing links in understanding the relationship between leadership and organizational performance". *International Business & Economics Research Journal*, 7 (5): 67-78.
- Kogut, B., & Zander, U. 1992. "Knowledge of the firm, combinative capabilities, and thereplication of technology". *Organization science*, 3 (3): 383-397.
- Lakshman, C. 2007. "Organizational knowledge leadership: a grounded theory approach". *Leadership & Organization Development Journal*, 28 (1): 51-75.
- Lin, H. M., Lin, P. J., Yen, I. F., & Shih, Y. T. 2013. "Knowledge transfer among MNE's subsidiaries: A conceptual framework for knowledge management". *International Journal of Organizational Innovation*, 6 (1): 6-14.
- Lyles, M. A., & Salk, J. E. 1996. "Knowledge acquisition from foreign parents in international joint ventures: An empirical examination in the Hungarian context". *Journal of international business studies*, 27 (5): 877-903.
- Løwendahl, B. R. (2005). *Strategic management of professional service firms*. Copenhagen: CBS Press.
- McEvily, S. K., & Chakravarthy, B. 2002. "The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge". *Strategic Management Journal*, 23 (4): 285-305.
- Nonaka, I. H., & Takeuchi, H. 1995. *The knowledge-creating company*. New York: Oxford University Press.
- Persson, M. 2006. "The impact of operational structure, lateral integrative mechanisms and control mechanisms on intra-MNE knowledge transfer". *International Business Review*, 15 (5): 547-569.
- Politis, J.D. 2002. "Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequences for performance". *Leadership & Organization Development Journal*, 23 (4): 186-197.

-
- Sosik, J. J. 1997. "Effects of transformational leadership and anonymity on idea generation in computer-mediated groups". *Group and Organization Management*, 22 (4): 460-487.
- Sewell, G. 2005. "Nice work? Rethinking managerial control in an era of knowledge work". *Organization*, 12 (5): 685-704.
- Singh, S. K. 2008. "Role of leadership in knowledge management: a study". *Journal of Knowledge Management*, 12 (4): 3-15.
- Szulanski, G. 1996. "Exploring internal stickiness: Impediments to the transfer of best practice within the firm". *Strategic management journal*, 17: 27-43.
- Van Wijk, R., Jansen, J. J., & Lyles, M. A. 2008. "Inter-and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of its Antecedents and Consequences". *Journal of Management Studies*, 45 (4): 830-853.
- Von Nordenflycht, A. 2010. "What is a professional service firm? Towards a theory and taxonomy of knowledge intensive firms." *Academy of Management Review*, 35 (1): 155-174.