

Knowledge Sharing and Communication in Obesity Department in Novo Nordisk

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Executive Summary

The competitive advantage of a multinational corporation (MNC) is allegedly based on its ability to transfer knowledge effectively and efficiently through and between its departments. This thesis will analyze factors preventing and facilitating knowledge sharing in a MNC. Specifically, studying the Obesity department, which consists of Obesity Pharmaco and Obesity Biology – a relatively new established department in the Danish pharma firm Novo Nordisk. Based on the initial interviews in which it was addressed that knowledge sharing and communication between the two departments is not working as well as it should, different factors will be analyzed in order to find a solution to the problem. The factors that will be analyzed are whether there is an understanding of what constitutes knowledge, motivation to share knowledge, national cultures, and language and communication aspects. On the basis of a total of eight interviews with both national and international employees, three vital aspects were found to prevent knowledge sharing and communication in the department. First, lack of a leader, second, lack of organizational culture about knowledge sharing, and third, lack of organizational memory.

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1.0 Introduction

1.1 Background

Communication and knowledge transfer in multinational companies constitutes a major factor of a successful business. The reason why it constitutes a major factor of a successful business is because communication skills help you understand others, not just their words, but also their tone of voice, their nonverbal gestures, or the format of their written documents. It can provide you with clues about who they are and what their values and priorities may be. What is more, oral and written communication proficiencies are consistently ranked in the top ten desirable skills by employer surveys year after year. According to the National Association of Colleges and Employers, high-powered business executives sometimes hire consultants to coach them in sharpening their communication skills (McLean).

However, when hearing about successful companies, we do not always hear about how the company creates and shares knowledge. One can assume that knowledge sharing is key for a firm's competitive advantage because knowledge sharing facilitates knowledge creation. The questions that then come to mind are: how is knowledge sharing facilitated and increased? Why is knowledge sharing important and relevant in a multinational company? Furthermore, due to globalization and internationalization, cultures and different languages are tangibles that perhaps play a role in the knowledge sharing process in multinational companies, and are therefore interesting aspects that should be highlighted and analyzed. Strengthening communication and knowledge sharing amongst employees and departments, will lead to a better understanding of what the mission and vision of the company is, and will further strengthen the competitive advantage of a company in a world that is becoming more competitive.

Accordingly, this thesis will analyze factors preventing and facilitating knowledge sharing in a MNC. Specifically, studying Obesity Pharmaco and Obesity Biology – a relatively new established department in the Danish pharma firm Novo Nordisk – the thesis will look at how is communication handled in terms of what aids are being used etc., and also, what role does culture play when it comes to communication and knowledge sharing?

The reason for choosing the above mentioned is because according to both head of departments, Gita Kampen and Marcus Latta, knowledge sharing and communication can be improved in between the two departments. *“There’s a lack of constructive support amongst employees, and perhaps a lack of interest in knowledge sharing”*(Marcus Latta initial meeting). Knowledge sharing is important in the Obesity department, and the transfer of knowledge is even more so. Working together on several project on a daily basis, the employees must make sure that work is not being replicated somewhere else in the department, as time management is important in a research facility. Despite working on the same projects, a lack of effective communication can cause working overtime and prolonging of the projects. Some of the questions that come up are these; do national cultures have an influence on the knowledge sharing process; how is knowledge communicated and transferred; what motivates the employees to share knowledge? Marcus however denies there being a national culture or language barrier issue when it comes to knowledge sharing and communicating. Perhaps it is a question of personal characteristic as scientific training amongst the employees makes communication and knowledge sharing difficult: *“Remember, in our two department we have a lot of scientist, and from an early age they are trained to be “egoistic”. They create hypothesis, test them, re-test them, write a paper about it, test it again, and then publish the final outcome. They have once again proved to themselves and their peers that they have found the solution to a problem, and will not be questioned further about their work. The results are evident. There’s no need to share that knowledge or communicate it to others. It’s already out there”* (Marcus Latta initial meeting).

1.2 Research question

The purpose of this thesis is to answer the following research question:

“How is knowledge shared and communicated, and what effects do national cultures, languages, and motivational aspects have on the knowledge sharing and communication aspect? ”

To answer thoroughly my question, I will investigate the following issues: how can employees ensure that the right communication tools are used when it comes to general communication? Add in knowledge sharing and different national cultures? Many of those aspects are perhaps acknowledged in advance, but not much is done when it comes to handling them. If these two departments wish to become successful, knowledge sharing, communication, and understanding of the employees' cultures is a must. How can the two departments sustain the competitive advantage, and how is it done when the departments are still relatively new?

1.3 Delimitation

The aim of this thesis is not to make an analysis of reverse transfer of knowledge. The knowledge flow from foreign subsidiaries to parent companies (i.e., reverse knowledge transfer) is one important process in the intra-MNE knowledge transfer phenomenon.

That has recently received attention (Rabbiosi 97) despite it there being justification for why that work should be looked into as the Obesity department is working closely with their subsidiary in China, and a newly open subsidiary in Seattle, Washington.

Furthermore, this thesis will not focus on the vertical knowledge sharing and communication aspects from the Obesity department to upper level management, as the opportunities to do research in that area is limited due to the ongoing expansion of Novo Nordisk and any disturbance this may cause.

1.4 Problem statement

A major part of a company's success lies in knowledge transfer. As was mentioned earlier, understanding how to effectively communicate and engage in knowledge transfer can be a difficult part for any organization, but even more so in new parts of the overall company. The Obesity Pharmaco and Obesity Biology is a relatively new department that was established in September 2014. These two departments work as two separate entities, yet, they are interconnected and work on many cross-team projects. This being the case, after having conducted primary interviews with head departments of Obesity Biology and Obesity Pharmaco, knowledge transfer and communication is a problem for the departments, and it is something that the departments wish to improve upon. Time is seen as

being one of the attributes that leads to the lack of knowledge sharing and communication, and personal preferences on what is important to share, are two of the biggest issues when it comes to knowledge sharing and communication. I assume that a multinational workforce and different academic backgrounds of the employees make it difficult when it comes to knowledge transfer and communication. Hence this thesis will look at how to improve and give recommendations to the knowledge transfer and communication aspects between the two Obesity departments.

1.5 Description of the department and their work

The two departments that will serve as the ground for this thesis are Obesity Pharmacology (*In Vivo*), and Obesity Biology (*In Vitro*).

Obesity is a disease that requires long-term management. It is associated with serious health consequences and with decreased life expectancy. Obesity-related comorbidities include type 2 diabetes, heart disease, obstructive sleep apnoea (OSA) and certain types of cancer. It is a complex and multi-factorial disease that is influenced by genetic, physiological, environmental and psychological factors (Novo Nordisk 37).

The *In Vivo obesity* department is made up by six employees whose nationalities differ greatly, in that there are Danes, Americans, Canadians, a German, and can therefore from a national perspective be seen as the “more” international department. Their daily work, consists of *In Vivo* work (Latin for “within the living”), and refers to experimentation using a whole, living organism as opposed to a partial or dead organism. Animal studies and clinical trials are two forms of *In Vivo* research. *In Vivo* testing is often employed over *In Vitro* because it is better suited for observing the overall effects of an experiment on a living subject.

The *In Vitro obesity* department is made up by six employees whose nationalities differ less, as there are Danes and one Swede represented. Opposed to *In Vivo*, their daily work consists of *In Vitro* work (Latin for within the glass), and refers to the technique of performing a given procedure in a controlled environment outside of a living organism. Many experiments in cellular biology are conducted outside of organisms or cells. One of the abiding weaknesses of *In Vitro* experiments is that they fail to replicate the precise

cellular conditions of an organism, particularly a microbe (Autoimmune Research Institute).

Together, the two departments are working on finding a drug that will eventually help cure obesity. *“With the planned launch of Saxenda®, a new option to treat obesity will become available, but Novo Nordisk doesn’t plan to stop there. We’re continuing to investigate the potential of Saxenda®, and we have other drug candidates in our research and development pipeline which could possibly become stand-alone antiobesity treatments or be used in combination with Saxenda®. We’re using our knowledge of protein chemistry, understanding of hormones and disease insight to break new ground. Our research is taking up into a new era of possibilities, and I believe we’re only at the beginning of the innovation curve”* says Mads Krogsaard Thomsen, Chief Science Officer at Novo Nordisk. However, the treatment challenge for obesity is great. Even when Saxenda® has been approved by regulators in a country, a number of hurdles must still be overcome to ensure access to this treatment. *“The current commercial market for antiobesity treatment is very small. Furthermore, this is a new era for us. Even though obesity is now recognized as a disease, national healthcare systems generally aren’t yet willing to pay for treatment. We hope that, by targeting Saxenda® for the treatment of a subset of people who unquestionably need treatment, we can ultimately change this. Until then, we will initially be focusing on private insurers to ensure reimbursement for Saxenda®. A further challenge is that only a small number of physicians currently prescribe antiobesity medications. Our focus will therefore be to work with these physicians while our ultimate goal is obviously to expand this group”* says Jakob Riis, Executive vice president of Marketing, Medical Affairs and Stakeholder Engagement at Novo Nordisk.

2.0 Theoretical framework

The theoretical framework presented next, will allow me to help answer my research question, and allow me to either confirm or not confirm Marcus Latta's statement about national cultures and languages not being the barriers and the sources of the lack of knowledge sharing and communication in the two departments. It will further highlight how communication and knowledge sharing can be improved in order to maintain a strong position in the obesity departments.

Knowledge sharing in a multinational setting is a complex phenomenon. Individuals' national cultures and languages and communications tools are only few of the numerous characteristics of the knowledge sharing processes that play a role. This chapter aims at disentangling and highlighting such different characteristics.

Knowledge has received in recent years more and more attention from executives, consultants and management theorists who all proclaim that knowledge now constitutes the major source of competitive advantage for organizations. "Knowledge (sometimes referred to as 'intellectual capital'), rather than traditional resources such as fixed assets and capital, is said to be 'the critical resource in the determination of competitive advantage'" (Zorn & Taylor 96). This means that managing, creating and leveraging knowledge is crucial for the success of the organization, however organizations experience several barriers and issues when dealing with knowledge management, with culture being one of the more significant obstacles. One of the keys of a successful multinational company is the company's ability to share and transfer knowledge efficiently and effectively through its intra-organization networks (Peltokorpi 49). "Language is considered one of the most – if not the most important aspect when it comes to knowledge transfer" (Peltokorpi 49) and must therefore, as mentioned earlier, be highly incorporated within the organization. That is not to say that the employees do not play a role, as they have to be motivated to share and engage in knowledge sharing on a regular basis. Findings suggest that individual-level perceptions of organizational commitment to knowledge sharing, and extrinsic motivation, directly influence the extent to which employees engage in firm-internal knowledge exchange (Minbaeva et al. 387). Questions and areas that are

worth exploring when it comes to knowledge sharing include Nonaka's concept of Ba, the flow of knowledge, what constitutes knowledge, and what are the most effective ways to share and use that particular knowledge? In order to answer the research question, a working definition of knowledge must be established, and the definitions of tacit and explicit knowledge are necessary to define as well. Once those definitions have been established, it will be easier to compare what literature suggests as being knowledge to what the employees see knowledge as.

One thing is looking at the organizational culture and how that can have an influence on the knowledge sharing and communication process, but in this case, how much do national cultures play a role when it comes to knowledge sharing and communication?

“Knowledge management gurus are quick to explain that a full-scale knowledge management initiative means not only utilizing ICTs (information and communication technologies), but also changing the organizational culture to one that encourages sharing – rather than hoarding – knowledge” (Zorn & Taylor 98). Culture and language are key sources of friction in the MNC (Barner-Rasmussen et al. 887).

What is more, there might be a motivational aspect that needs to be looked at, as that may have an influence on the knowledge sharing. Why are employees not engaged in the knowledge sharing practice? One could assume that motivation is the problem, and issues relating to motivation will also be analyzed. Also, how is communication done? What remedies are used in order to communicate- mail, intranet, face to face?

2.1 Knowledge sharing

2.1.1 What is knowledge and knowledge sharing?

Knowledge sharing is relevant because it is critical, and because it can contribute to knowledge application, innovation, and ultimately an organizations competitive advantage. What now determines ‘competitive advantage’ is the know-how (practical knowledge) and know-what (formal or cognitive knowledge) of the people who develop and use knowledge in organizations: part specialized training, part hard-won job savvy. (Zorn & Taylor 96).

One of the central issues in this thesis is to determine what knowledge is. Traditional information processing perspectives distinguish between data (raw numbers and facts),

information (processed or analyzed data that takes on relevance), and knowledge (applied information endowed by experience) (Zorn & Taylor 102). For this thesis' purpose, knowledge is defined as: "information processed by individuals, including ideas, facts, expertise, and judgments relevant for individual, team, and organizational performance" (Bartol & Srivastava 421).

Knowledge sharing involves providing other employees with explicit knowledge that can be articulated in writing or symbols (such as formulas, processes, and routines) as well as tacit knowledge (sharing experiences and know-how) to help others accomplish goals, collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Wang et al. 979). However, knowledge analysis always consists of both, the tacit and the explicit dimension. Knowing is a process, which can be thought of an act of integrating tacit and explicit knowledge in light of a particular action (Rentz, Matzler, and Mader 2) Knowledge sharing can occur through face-to-face or technology-enhanced interactions with others through knowledge management systems (Wang et al. 979)

As it was just indicated, there are different ways to share knowledge, either face-to-face, or technology-enhanced interactions. What is important to know is that the most important characteristic of knowledge is that it is created by human beings through their interaction and that, therefore, knowledge is subjective, process relational, aesthetic, and created in practice (Nonaka, Hirata, and Toyama 14).

2.1.2 The notion of knowledge sharing and knowledge creation

Knowledge sharing is a complex phenomenon, but there are ways that facilitate knowledge sharing. In literature, what facilitates knowledge sharing, according to Nonaka, is the knowledge creating process known as the SECI model. Nonaka argues that new knowledge is created from the continuous interaction of tacit and explicit knowledge. The SECI model consists of four modes of knowledge conversion: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit), and internalization (explicit to tacit). The tacit knowledge possessed by individuals is externalized and thereby transformed into explicit knowledge so it can be shared with

others and enriched by their individual viewpoints to become new knowledge (Nonaka, Hirata, and Toyama 19). Furthermore, Nonaka and Takeuchi argued that tacit knowledge “is deeply rooted in an individual’s action and experience; when it is codified and externalized, it becomes explicit knowledge (i.e., written, drawn or programmed) and only at that point does it become useful to the organization as a whole” (Nonaka, Hirata, and Toyama 19).

2.2 Factors preventing knowledge sharing

What could potentially prevent knowledge sharing? This thesis will look at four aspects that could prevent or facilitate knowledge sharing and knowledge creation:

1) Motivation to share, 2) the role of culture, 3) the role of language, 4) and the role of language channels.

2.2.1 Motivation- internal and external, and collaboration

The reason perhaps there is a lack of knowledge sharing or transfer is due to two reasons: motivation- both internally and externally amongst the employees, and a “collaboration” problem. In his book called “*Collaboration*”, professor Morten T. Hansen mentions four barriers to why there is a lack of collaboration amongst employees. Collaboration, seen from my perspective goes hand in hand with knowledge sharing and knowledge transfer, and Hansen’s four barriers may perhaps be the issues that prevent collaboration and knowledge sharing. The four barriers are:

1. *Not Invented Here Barrier* – most likely stems from motivational limitations when people are not willing to reach out to each other. Hansen points out that communication typically stays within the group and people protect self-interest. Pride may get in the way, or sometimes fear of losing face.
2. *The Hoarding Barrier* – people are holding back due to several reasons. Competitive relationships may occur, and, losing power to the other employees
3. *The Search Barrier* – when the employees cannot find the information they are looking for that will help them. This could potentially be due to lack of sufficient networks to connect people.

4. *The Transfer Barrier* – this occurs when people do not know how to work together. For example, volumes of knowledge on bookshelves or in computer code, often referred to as tacit knowledge, or even product or service "know-how" that takes experience to master can be difficult to pass on to others.
(Hansen 45)

However, in other words, research suggests that engagement in knowledge exchange is dependent upon the extent to which the individual believes that his/her immediate group and the organization as a whole generally agree that it a valued activity (Minbaeva 391). Previous literature has suggested that there is relationship between extrinsic motivation and knowledge-sharing behavior (Minbaeva 391). It is argued by Cabrera and Cabrera that the process related decisions about whether or not to engage in knowledge sharing bears resemblance to cost-benefit analysis: “when individuals perceive a link between knowledge sharing behaviors... and organizational rewards... they will be more inclined to participate in knowledge sharing activities” (Minbaeva 391).

The intrinsic motivation is an important aspect when it comes to the motivation of knowledge sharing. Individuals are said to be intrinsically motivated when they undertake an activity for its own sake because it satisfies the internal needs of the employee, rather than the external reward.

Social interaction is also argued to be one of the reasons why employees are or are not engaged in knowledge sharing practices. Developing the trust and cooperation amongst employees can be time consuming, however, when socialization mechanisms that develop those aspects are present in the company, they have been found to positively affect knowledge transfer (Minbaeva 392). In a similar vein, research has indicated that the level of interaction between members of different groups or units has a significant positive effect on the level of knowledge exchange. Frequent interactions were associated with a higher level of knowledge sharing. What is more, without intergroup interaction, organizational knowledge may be trapped in individual minds and knowledge management systems, and thus be underleveraged (Hansen 34).

2.2.2 Different cultures

When talking about multinational corporations, we must acknowledge the fact that there might be more than just one national culture. Multinational corporations are characterized by geographical, cultural, and linguistic fragmentation (Barner-Rasmussen et al. 886) and a deeper understanding of the different national cultures serve as a source of significant advantage when it comes to communication and knowledge transfer. To what extent are these national cultures visible?

Gert Hofstede's model of "Cultural Dimensions" has laid the foundation for what is now widely perceived as one of the largest contributors to cultural understanding. The theory only comprised of four dimensions when Hofstede originally executed his massive in-house survey at IBM and as such it was initially accused of being too narrow, because it only consisted of the four dimensions. Others claim his research is insufficient to support the major generalizations posed by his cultural framework, because the IBM data is not adequately diverse to represent entire national cultures (McSweeney 88). Hofstede has since the introduction of the initial four categories expanded his framework with two additional dimensions, which supposedly assist in providing a more accurate description of cultural traits. The six dimensions developed by Hofstede are:

- 1) Power distance = the degree to which people accept and expect that power is distributed unevenly within a group or a society
- 2) Individualism = the degree to which taking responsibility for yourself is more valued rather than belonging to a group
- 3) Masculinity = the degree to which people value performance and status deriving from it rather than quality of life and caring for others
- 4) Uncertainty avoidance = the degree to which people develop mechanism to avoid uncertainty
- 5) Long term orientation = the degree to which people value long-term goals and have a pragmatic approach, rather than being normative and short-term oriented
- 6) Indulgence vs. restraint = Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun.

Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms (Wurstein et al. 3).

The model can be applied to international business communication as it is commonly agreed that communication is one of the primary concerns for business (Peltokorpi 53). So, for professionals who work internationally; people who interact daily with other people from different countries within their company or with other companies abroad; Hofstede's model gives insights into other cultures. In fact cross-cultural communication requires being aware of cultural differences because what may be considered perfectly acceptable and natural in one country, can be confusing or even offensive in another. Cultural dimensions affect all the levels in communication: verbal (words and language itself), non-verbal (body language, gestures) and etiquettes do's and don'ts (clothing, gift-giving, dining, customs and protocol)

De Long and Fahey's article entitled 'Diagnosing Cultural Barriers to Knowledge Management', has identified four ways in which culture influences behavior central to knowledge creation, sharing, and use (De Long, Fahey 113), however, this thesis will only look at two of the ways:

- Culture mediates the relationships between levels of knowledge

This is most evident when management tries to convince individuals to share the human knowledge they have so it can be beneficial for all members of the organization, and so that it can be converted into more structured knowledge. What is considered to be important to one employee may not necessarily be important to the other employee, and perhaps the national culture may play a role in what constitutes what is important to an employee. North Americans may see a type of information as being important, whilst the Scandinavian counterparts may view the same information as being unimportant so to say. What the international employees constitute as being important may vary, and that may be a reason to why knowledge sharing in the Obesity department is not as good as it should be.

- Culture creates a context for social interaction

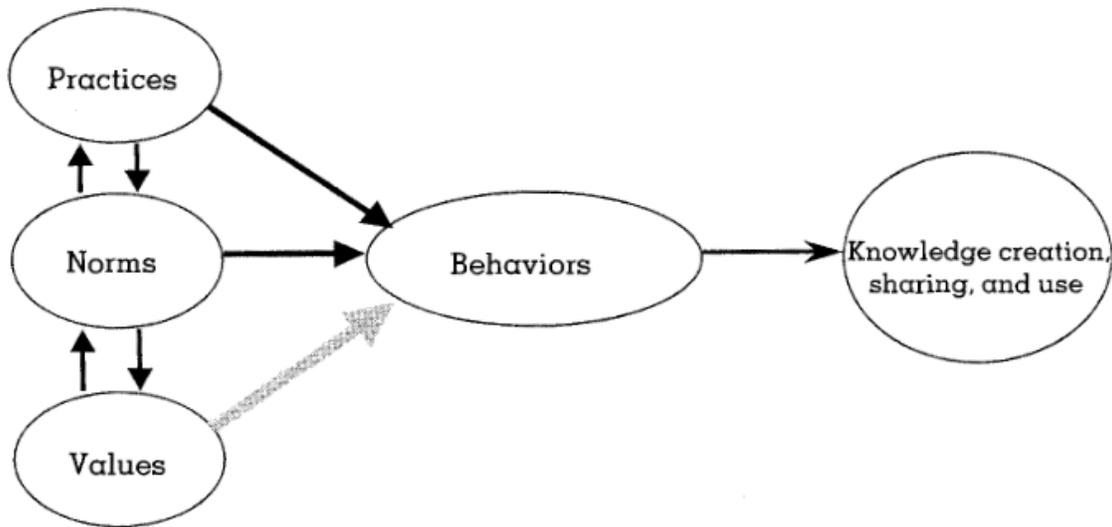
What is the culture on social interaction in the departments? National culture may represent the rules for the social interaction, as communication channels may be different in different countries. In some countries, challenging the superior is considered to be respected, and employees are encouraged to do so, however, in other countries, challenging the superior may be seen as being disrespectful, and the outcome may not necessarily be positive for either parts involved. The impact of culture on the context for interaction can be assessed through three dimensions: vertical interactions, horizontal interactions, and special behaviors that promote knowledge sharing and use.

Organizational culture is widely held to be the major barrier to creating and leveraging knowledge assets (De Long and Fahey 113). The concept of culture can be hard to define and is often used loosely by executives and consultants, without any real attempt to define what it means in practice. Culture is not only intangible and illusive, but it can be observed at multiple levels in an organization. Culture can be seen in values, norms, and practices. Values are often difficult to put into words, and at times even more difficult to change. Values that inspire individuals to regard employees as partners are more likely to motivate behavior that creates useful knowledge about employees. Norms are generally derived from values, but they are more observable and easier for employees to identify. Practices are the most visible symbols and manifestations of a culture. They are a way of understanding any widely understood set of repetitive behaviors, such as how people act in specific situations, when they answer a phone call, meet face to face with colleagues, act in weekly status meetings etc (De Long and Fahey 115). Practices provide the most direct leverage to change behaviors needed to support knowledge creation, sharing and use. This means that culture determines what knowledge remains with the individuals and what knowledge belongs to the organization. The cultural ground rules shape how people interact and they have a major impact on knowledge sharing, creation and use. How the employees interact both horizontally and vertically plays a vital role in the knowledge being shared and used.

Looking at the two different ways in which culture influences knowledge sharing will give a deeper understanding of the issues currently taking place, and why it is crucial to acknowledge the cultural differences between the departments if knowledge sharing is to be successful.

Figure 1:

Elements of culture:



From De Long and Fahey: Culture Elements Influence Behaviours

2.2.3 Language

Many companies nowadays compete in an international market, so their need to communicate effectively and efficiently with other companies or representatives has to be flawless and streamlined. Instead of using the language of the country where the head-quarter is located, companies now have started using English as communication internally, as well as externally. However, in order to incorporate English as the common corporate language, it means that the company is obligated to incorporate it in a way that makes it a smooth transition for the employees. Additionally, the company must prepare

the employees for the language change, and if necessary, send employees to training courses to provide them with tools to actually make the shift from the mother language to a foreign language.

In their academic paper called “Cultural and language skills are resources for boundary spanning within the MNC” by Barner-Rasmussen, Ehnrooth, Koveshnikov, and Makela, their combined qualitative and quantitative analysis shows that cultural and language skills influence the extent to which individual boundary spanners perform four functions: exchanging, linking, facilitating, and intervening. These functions may play a role on the sharing of tacit and explicit knowledge, and are therefore an important aspect that must be looked into.

As it was indicated before, knowledge sharing is created from the continuous interaction of tacit and explicit knowledge, and one could assume that language skills and cultural understandings play a role in those aspects. Hence, language may play a role in the knowledge sharing process.

Bicultural individuals, in contrast, have distinct sets of knowledge structures for each of the cultures, and bicultural-bilinguals have internalized two cultures and can speak the languages associated with each of those cultures (Barner-Rasmussen et al. 891).

2.2.4 Communication tools and channels

Communicating knowledge may not necessarily be easy, and it therefore raises the question: what is the company’s strategy to communicate and share knowledge?

Some of the things that are worth looking into are what tools the departments are using to communicate, the richness of those communications media, and how can we make sure that miscommunication does not occur?

When talking about sharing and communicating knowledge, it needs to be looked at how things are communicated. Granted, that language is an essential, if not the most important part of knowledge transfer (Peltokorpi 49), but *how* exactly is communication done? In order to answer that question, Daft and Lengel’s Communication Richness Media Theory

is a framework that describes a communications medium by its ability to reproduce the information that is sent over it. It is used to rank and evaluate the richness of certain communication mediums, such as phone calls, video conferencing, email, etc. Phone calls for example cannot reproduce cues such as gestures, and is therefore seen as a less rich communication medium than for example video conferencing, which allows users to communicate gestures to some extent. The theory suggests that the more ambiguous and uncertain tasks are, the richer the format is required and necessary in order to make sure that the proper and right information is communicated (Daft & Lengel 559). Furthermore, based on contingency theory, and information processing theory, it explains that richer, and more personal communication means are more effective for communication of equivocal issues than leaner, less rich media (Daft & Lengel 560). The theory furthermore assumes two main assumptions: employees seek to overcome task equivocality (ambiguity, the existence of multiple and conflicting interpretations about an organizational situation) and uncertainty, (the difference between the amount of information required to perform a task, and the amount of information already possessed by the organization.) (Daft & Lengel 558). Task equivocality exists when there are multiple and possibly conflicting interpretations for the information or the framework with which to interpret it. Task uncertainty is associated with lack of information. The theory presents a media richness hierarchy with four criteria, arranged from high to low degrees of richness, to demonstrate the capacity of different media types to process information. The four criteria are (1) the availability of instant feedback; (2) the capacity of the medium to transmit multiple cues, such as body language, voice tone, and inflection; (3) the use of natural language; and (4) the personal focus of the medium.

According to the theory, messages should be communicated on channels with sufficient and appropriate media richness capacities. Messages communicated on channels that are inappropriate to the equivocality of a situation and the richness of the information sought to be transmitted, may be misinterpreted by recipients or may be otherwise ineffective with regard to their intended purpose (Zmud & Carlson 153). In addition to engendering a risk of misinterpretation, medium-message mismatches can require communication participants to engage in compensating activities to clarify message content, leading to possible communication inefficiencies (Zmud & Carlson 154). As a result, managers who

are more skilled at selecting appropriate communication channels have been rated as being more effective in carrying out their managerial roles (Zmud & Carlson 155).

Another important aspect when communicating and sharing knowledge, is to look at how it is done in terms of communications strategy. There are two different ways communication can be stored and shared: through the codification strategy and through the personalization strategy. The former strategy is used when knowledge is carefully codified and stored in databases, where it can be accessed and used easily by anyone in the company (Hansen et al. 107). The other way, personalization, is done when knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts (Hansen et al. 107).

Knowledge is codified using a people-to-documents approach. That means that knowledge is extracted from the person who developed it, made independent from the person, and re-used it for various purposes. This method or approach allows many people to search for and retrieve codified knowledge without having to contact the person who originally developed the knowledge. That strategy opens up the possibility of achieving scale in knowledge reuse and thus growing the business (Hansen et al. 108).

By contrast, using the personalization strategy approach, knowledge is derived from dialogues between individuals, not knowledge objects in a database. Knowledge that has not been codified and probably could not have been, is transferred in brainstorming sessions and one-on-one conversations. Building good and strong networks are important when it comes to sharing knowledge through the personalization strategy, and the expertise must be high amongst people who use this type of knowledge sharing strategy.

How can the above-mentioned theories be applied in order to answer the research question? When it comes to the aspect of knowledge and the definition of what knowledge is in this thesis, Nonaka's flow of knowledge will look at how knowledge is created and used. Moreover, what type of knowledge are the employees sharing? What Nonaka has defined both tacit and explicit knowledge to be, and equally what the employees define knowledge to be, will be compared in the analysis.

When it comes to the motivational aspect, and what motivates the employees to engage in knowledge sharing, analyzing whether or not one or more of the barriers suggested by

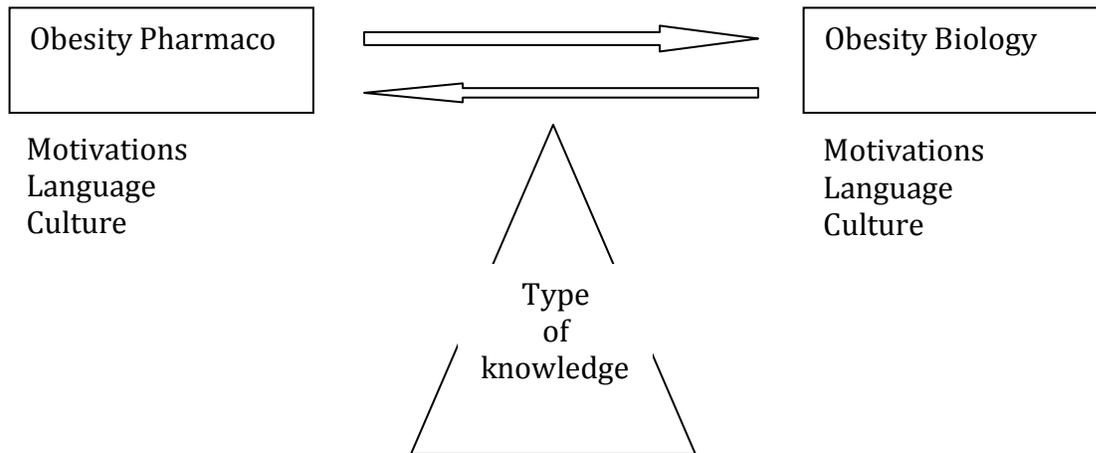
Morten T. Hansen are evident in the obesity department, can perhaps explain if there is a collaboration problem between the departments. Moreover, the lack or collaboration may or may not have a direct influence on the motivation to share knowledge between the departments. Looking at the specific intrinsic and extrinsic motivators is important as they perhaps suggest what sides need to be strengthened or looked at. This theory can therefore be beneficial as to answering the question whether or not employees are motivated to share knowledge. Perhaps the lack of collaboration, extrinsic and intrinsic motivation, not knowing what each other is working on, and, lacking an understanding of what the other employees are capable off leads to weakened knowledge sharing and communication.

In culture, analyzing the five dimensions mentioned by Hofstede, will give a better understanding whether the different cultural dimensions actively have an influence on knowledge sharing and communication, and guide me in the analysis and in valuating whether or not there are issues regarding national cultures that has not been taken into consideration. This being the case, the expectation for this study is that national culture will be visible due to the diverse representation of different nationalities in the obesity department, despite the opposite being stated earlier. Furthermore, will the representation of national cultures create a culture in which there might occur problems when it comes to communication and knowledge sharing? Therefore De Long and Fahey's theory will point out and analyze what constitutes what is important knowledge, and what role socialization has when it comes to sharing knowledge.

When it comes to languages and communication, according to Daft and Lengel's theory, knowing that the more complex and ambiguous a problem is, the richer medium is required in order to communicate it. The theory will provide an answer to *how* things are communicated between the two departments, and whether the problem of the departments' lack of knowledge sharing and communication is rooted in the richness or less rich medium of communication. Furthermore, do different languages have an influence on the knowledge sharing process?

There are different ways in which companies can save and use knowledge, which can be seen in two different strategies- codification and personalization. To what extent are the two strategies being used, and what strategy is preferred the most amongst the employees? What strategy the employees prefer might differ greatly from what the company does currently when it comes to communicating and sharing knowledge, and it should therefore be analyzed as it will eventually give a better understanding of how knowledge is worked with, and how it is communicated the best way for the employees.

Figure 2: Theoretical framework



The figure above puts forth a visual illustration of what the aim of this thesis is. As it was indicated in the research question and through the problem statement, the aim of this paper is to look at ‘how is knowledge shared and communicated, and what effects do national cultures, languages, and motivational aspects have on the knowledge sharing and communication aspect between Obesity Pharmaco *In Vivo* and Obesity Biology *In Vitro*. The aspects that perhaps facilitate or prevent knowledge sharing and communication will as previously mentioned be, knowledge, motivation, language and culture, and will all be looked into.

3.0 Methodology

This section provides information as to how the research was conducted, and how the overall project was created.

Literature survey – secondary data was reviewed initially through the university library using a range of information sources such as notes and books from prior classes attended, Internet search engines, academic journal articles, and newspapers regarding the topic of knowledge transfer in multinational corporations.

The data collection consisted of empirical primary data that was obtained through two initial meetings with the heads of Obesity Biology and Obesity Pharmacology, and six interviews with a diverse sample of both national and international employees from the Obesity department. The interviews collected qualitative data that were later used for comparison and analysis with what is suggested by theory. Prior to the interviews, an interview guide was created in order to serve as guidance when conducting the interviews. The questions in the interview guide were descriptive and structural which gave the employees the opportunity to fully answer and explain the different questions that were asked.

The interview guide entailed questions that were divided into six different categories – personal, knowledge, motivation, culture, language, and communication questions.

The interviews were recorded using a Dictaphone in order for the researcher to listen to the replies when needed, and in order to conduct a transcription of the interviews. The transcripts can be found in the appendix. Primary data collection took place from May 2015 to June 2015.

The reason for choosing the methods mentioned, is due to the limited amount of people in the Obesity department, and it gave the basis for more personal interviews and the obtaining of data.

* In order to protect the employees of the Obesity department, the employee names will not figure in the interview or throughout the project. Instead, employees have been given a numerical value as a reference

4.0 Analysis

4.1 Knowledge and knowledge sharing

Knowledge is a phenomenon that has many working definitions, and let me therefore refer back to the working definition that was introduced in the theoretical framework for knowledge as “information processed by individuals, including ideas, facts, expertise, and judgments relevant for individual, team, and organizational performance” (Bartol & Srivastava). However, traditional information processing perspectives distinguish between data (raw numbers and facts), information (processed or analyzed data that takes on relevance), and knowledge (applied information endowed by experience). (Zorn & Taylor 102). Knowing this, it is important to find out what the employees’ perception of knowledge is, because knowledge is a subjective matter, and different definitions may occur when it comes to answering that question. The reason for asking what the employees’ definition of what knowledge is, it will help answer and solve the research question that was set forth earlier in the thesis. Getting a better understanding of what knowledge is to the employees it allows to anticipate to what extent knowledge is perceived as tacit or codifiable and therefore the perceived cost of transferring knowledge.

Sharing knowledge can be done in several ways, and as McFadyen et al., explain, knowledge sharing can occur through face-to-face or technology-enhanced interactions with others through knowledge management systems. Sharing knowledge is about involving and providing other employees with explicit knowledge (such as formulas, processes, and routines) as well as tacit knowledge (sharing experiences and know-how) to help others accomplish goals, collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Wang et. al. 979). It is important in this thesis to ask how knowledge is shared amongst the employees because sharing knowledge can happen in many different ways, and done correctly, it could potentially solve the issue at hand. However, as the analysis later will indicate, sharing knowledge could be improved amongst the employees. In order to find the best way possible to share knowledge for the employees of the obesity department, it is important to look at the current status, and from then, make the necessary recommendations or improvements.

The questions that were asked about knowledge and the theme of knowledge are shown in the interview guide available under appendix A.

The questions asked in the interview guide regarding the theme of knowledge range from asking about how the employees define knowledge to their understanding of the knowledge sharing process within the Obesity department. All together, the analysis of the answers to the questions should provide information about key aspects like the different ways through which knowledge is shared, and what makes it difficult to share knowledge.

Overall, the respondents shared similar views regarding the topic under study. Tables 1-4 report a number of quotes illustrating the main results identified from the overall scrutiny of the complete answers from the interviews. For those interested, the transcripts of the interviews can be found in the appendix B.

In table 1, Knowledge Definition, answers to some of the questions can be found, and reasons for displaying those is to illustrate the fact that there is a broad similarity amongst the employees as to what their definition of knowledge is, which goes well with what the theory suggests what knowledge can be defined as

In table 2, How Do You Share Knowledge, looks at what different ways knowledge is shared, which can then be compared to the different knowledge sharing ways suggested by Nonaka's concept of Ba, and the SECI model

In table 3, What Type of Knowledge Is Shared, explores what types of knowledge are being shared; tacit, explicit, codified or non-codified knowledge?

In table 4, Is It Difficult to Share Knowledge, looks at what makes it difficult to share knowledge, and how that plays a role when it comes to making the knowledge sharing process better

	1	2	3	4	5
What is knowledge?	“Information within diseases, and guidelines on how to do an experiment”	“Data based, often experience, something that’s reproducible, that’s understood...” “Knowledge is power”	“From a working perspective knowledge is how to perform”	“Knowing your stuff, your methods, but also knowing what’s going on in the projects and have a general knowledge about what is going in the firm...” “Knowledge is power”	“Research, basic knowledge of why we are here.” “Knowledge is power” “Something that’s challengeable”

Table 1 “What Is Knowledge and Knowledge Definition”

As one can see in table 1, which asked what knowledge is to the employees, all gave answers that reflect the theoretical definition of knowledge. Specifically, there was large consensus in seeing knowledge as a combination of information, data and know-how. Their definition of knowledge however varies from person to person: Knowledge is seen as an array of things, including information, guidelines, data, experience, power, published research, and research.

According to Zorn and Taylor, data is turned into information, information to knowledge, and knowledge into wisdom. That is a good way of seeing things, and many of the examples that are presented by the employees are similar to what Zorn and Taylor talk about. Data is mentioned by one of the employees, often based on experience, which can be seen as raw numbers and facts according to the traditional information processing perspectives. Information is then derived from data as it becomes processed and analyzed, and as one of the employees says, information then serves as a guideline on how to do an experiment. That information later becomes knowledge as it is applied by experience. Here one can argue that the conversion from tacit to explicit takes place, as knowledge becomes explicit because it has been used and processed earlier. According to another employee, reproduction of data is an important and vital part of what constitutes knowledge, because it can later on be used as a competitive advantage. Being able to reproduce data is a clear indication of data that is going from tacit to explicit, and being able to process that is a major advantage for the firm.

One of the things that seems to emerge from the review of the results is that there is consensus about the component of knowledge, but the scientists interviewed, have a slightly different understanding of the process through which data, information, experience, etc. interact to generate new knowledge.

	1	2	3	4	6
What type of knowledge are you sharing?	“We share experience on how projects were made, cutoffs, and inspiration. We have a commitment to share information if it can benefit others.”	“Lots, especially since I’m in research” “I use a lot of explicit knowledge, e.g. handling animals, designing formulas, projects, and reports”	“I share everything. Data, ideas, stories, everything! Also for sparring purposes!”	“Research. Data of projects, progress, fall backs. The political knowledge that isn’t shared is more other stuff. More rumors, personal stuff	“Data, literature, experience,”

Table A3 “What Type of Knowledge Is Shared”

Understanding how employees define and perceive knowledge makes it possible to evaluate which component of knowledge that they are sharing. Getting a better understanding and idea of what is being shared, one can pin point what needs to be shared more or less. As it was mentioned earlier, the employees have different viewpoints of what is important to share, and making it known what they actually do share, helps give a better understanding of the overall knowledge sharing.

Looking into the answers, one will find that what the theoretical framework suggests knowledge to be, goes well in hand with what is actually being shared by the employees. Raw information as numbers and facts, data, experience, and inspiration are all being shared on a daily basis. However, one employee who has a working background in both *In Vivo* and *In Vitro*, makes sure that a lot of what is shared is explicit knowledge. The explicit knowledge in this case is understood as handling animals, designing formulas, projects, and reports. When further asked about why explicit knowledge was shared by the employee, the answer was interesting. According to this employee, there is a vocabulary gap between *In Vivo* and *In Vitro*, and finds that people in *In Vitro* do not have the knowledge and understanding for why they do things the way they do in *In Vivo*. Sharing knowledge and information is also seen as a good way to do sparring, and perhaps that is necessary when it comes to building trust and minimizing the gap between the two departments.

A group of the respondents also highlighted that experience is an important aspect that is being shared, because sharing experience helps the other employees to perform better and create better projects. Sharing experience on how to do projects, cutoffs, and inspiration may be beneficial for all of the employees. If something is working, it needs to be shared, and not kept a secret. Keeping things from other employees creates a power issue, and knowledge then becomes power and may be misused. As it was mentioned earlier, sharing knowledge is about involving and providing other employees with explicit knowledge (such as formulas, processes, and routines) as well as tacit knowledge (sharing experiences and know-how) to help others accomplish goals, collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Wang et. al. 979).

Being able to use knowledge comes from understanding the information that is at hand. And as one of the employees mentions, knowledge is about knowing your stuff, your methods, but also knowing what is going on in the projects and having a general knowledge about what is going on in the firm. That goes well in hand with information becoming knowledge, and later wisdom.

However, sharing knowledge is not just sharing data, information and facts, but to some of the respondents, it is also curiosity. In general, according to an employee, the employee should have a broad understanding of the field that employee is working in, but would not be able to know everything. Having the experience and curiosity to find knowledge is important, as it will further develop the employee's knowledge base.

Combining the answers that have been provided by the employees, the working definition of knowledge, and what is being shared, goes well in hand in this thesis with what suggested and defined as knowledge; as information processed by individuals, including ideas, facts, expertise, and judgments relevant for individual, team, and organizational performance (Bartol & Srivastava 421), and sharing knowledge is about involving and providing other employees with explicit knowledge (such as formulas, processes, and routines) as well as tacit knowledge (sharing experiences and know-how) to help others accomplish goals, collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Wang et. al. 979). However, the analysis also highlighted that different coding norms and routines could prevent the communication between scientists belonging to the same department but with different backgrounds.

It is important to know what knowledge and knowledge sharing is, however, what needs to be looked further into, is how knowledge is shared, and where it is done. It is important to ask that question because sharing knowledge can according to Nonaka be done through several distinguished ways, which can be seen in the SECI model. The SECI model consists of four modes of knowledge conversion: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit), and internalization (explicit to tacit). The tacit knowledge possessed by individuals is externalized and thereby transformed into explicit knowledge so it can be shared with others and enriched by their individual

viewpoints to become new knowledge (Nonaka and Hirat 19). Knowing this, it is vital to look into how things are shared between the two departments, because that will also help understand and improve the knowledge sharing and communication amongst the employees internally, but also between the two departments. Asking where knowledge sharing takes place pinpoints not only the location, but also in what setting knowledge sharing takes place.

Table 2 “How Do You Share Knowledge?”

	1	2	3	4	5
How do you share knowledge?	“Mostly we share our knowledge in our academic meetings once a week, and once a month in our monthly meetings. Mostly however we share our knowledge in the offices.”	“Lots, especially since I’m in research. Meetings, projects, teams.”	“Academic meetings, meetings, and through cross projects”	“Meeting culture in Novo. We always present the latest data in our projects to our project group. Inform the project manager. Also a scientific vice president.”	“Mostly meetings and one to one or through the lunch breaks. KS is also being able to invite the right people and who you think might find it relevant.” “That’s in the projects. There you have all the opportunities”

Table A2 “How Do You Share Knowledge?”

Looking at the answers closely, there is a large consensus amongst the respondents that knowledge sharing takes place through the weekly academic meetings (those who have the academic background), through the departmental meetings which take place every fortnight (everybody from a department meets up every two weeks to discuss matters), and through the employees' cross team projects (when employees from Obesity Biology and Obesity Pharmaco work on a project together) The Japanese concept of "Ba" which translated into English, roughly means "place", is a theory suggested by Nonaka, that talks about knowledge creating relationships. Ba is the foundation for knowledge creating activity. It is the place where one engages in dialectical dialogue and practice to implement the vision and driving objectives of the firm (Nonaka, Hirata, and Toyama 34). According to theory, knowledge is embedded in Ba (shared spaces or places), where it is then acquired through one's own experience or reflections on the experiences of others. If knowledge is separated from the Ba, it turns into information, which can then be communicated independently from Ba. Information is a concept that is tangible, while knowledge is something that is intangible, and only lives in the Ba (Nonaka, Hirata, and Toyama 25) As the analysis will show, the concept of Ba is present throughout the Obesity department.

According to an employee, Novo Nordisk has a strong meeting culture, and in the Obesity department it is evident and perhaps the reason why knowledge sharing is done through meetings. *"Meeting culture in Novo. We always present the latest data in our projects to our project group. Inform the project manager. Also a scientific vice president."* (Appendix B, interview 4).

Putting the answers next to the SECI model, firstly, one could argue that meetings can be seen as an externalization process as you are discussing things that you experience first hand and sharing that experience with others. In other words, you are sharing the tacit knowledge that you have gained through socialization (tacit to tacit), and passing it on through the externalization process (tacit to explicit) because you are articulating your knowledge through dialogue and reflection. However, secondly, one could also argue that one could be using the combination (explicit to explicit) through the cross team projects. According to several employees, this is where most knowledge sharing happens and takes place, or where the "good stuff" happens.

The analysis also shows that a lot of knowledge sharing also takes place in the offices though, and one could argue that it once again happens through the socialization medium, as a lot of the communication takes place here.

A question that can be raised when talking about how knowledge and information is communicated and shared, one should look into what strategy the company uses to managing knowledge. That question will be looked into later in the analysis under the communication tools and channels chapter.

In continuation of this analysis, an important question that needs to be asked is whether it is difficult to share knowledge or not. Granted that there are once again subjective ideas of what defines difficulties, but knowing what issues there are when it comes to knowledge sharing, it will serve as a basis for what steps needs to be taken in order to decrease the difficulties at hand. The more complex the knowledge sharing process gets, the less knowledge sharing will actually take place, and nobody gains from this. Therefore, asking if it is difficult to share knowledge and why that is, it can gives basis for change, and an improvement of that aspect can be done.

As the analysis shows, according to the employees, there are problems that need to be looked into.

	1	2	3	4	5
Is it difficult to share knowledge, and how is it in between departments?	<p>“It’s very personal. For me it’s easy to share, others might think it’s difficult. It depends on if they are extroverts or introverts.”</p> <p>“Most of the knowledge sharing isn’t structured, you mostly share with your mates in the office.”</p>	<p>“It’s difficult because people are busy It’s all about priorities. What are people working on? That’s their primary purpose and focus. Person to person it’s ok, but departemtn to department it’s difficult because we are involved in different projects. Hard to find the time.”</p> <p>“Good communication between people, but not good at department to department.”</p>	<p>“We have to get better at sharing knowledge with Gita and InVitro.”</p>	<p>“Novo is a big org and it’s important to have contacts around. A lot of ideas and KS happens one to one. I know this person over there, so I’ll go talk to him. But in between departments it’s a little more... We had some official joint meetings with Marcus department, but it kind of died out.”</p>	<p>“We have problems with knowledge sharing. InVivo are not so good at publishing their work and uploading their work.”</p>

Table A4, “Is It Difficult To Share Knowledge”

Looking at the answers that the employees provided in the interviews, it becomes evident that knowledge sharing and communication is difficult at times, and at times it can become frustrating and annoying.

An issue that comes up when looking deeper into things is the issue of uploading work so that everybody can find it. Uploading work is not always done, and when an employee is looking for specific data, it then becomes difficult to find it. Obtaining data is an issue that is mentioned some times in the interviews, and it raises the question of whether there is a policy that clearly states that all work must be uploaded.

The biggest problem according to the employee is the lack of time. The employees are involved in many different projects, and therefore finding the time to share knowledge becomes less important. The employees focus is primarily on their work, but according to the employees, there is a mutual understanding that knowledge sharing is beneficial to everybody.

An employee mentions that sharing knowledge is a question about whether an employee is an introvert or an extrovert. That might very well be the case, but could there perhaps be an underlying issue behind that? In order to answer that question, one will have to look at the intrinsic and extrinsic motivation to share knowledge, and that part will be analyzed later in this thesis.

The communication and knowledge sharing process is according to several of the employees better internally in the department, but lacks the same quality when it comes to communicating and sharing knowledge between the departments. One can therefore draw the conclusion that there is consensus that communication between and amongst the employees must get better.

Another source to the problem is that knowledge sharing is not structured. Most sharing happens with you co-workers across your table, but there is no structured time for it. The employees acknowledge that there needs to be something done with the communication and knowledge sharing aspect, and the problem may well be a priority issue. However, finding the reasons why people should engage in knowledge sharing and communication

there are many. That part will be analyzed in the next part of the analysis – the motivation to share knowledge.

4.1.1 Summary of knowledge and knowledge sharing

Summarizing the findings of the knowledge and knowledge sharing chapter, one can conclude that there is a broad consensus amongst the employees as to what knowledge is, what type of knowledge is being shared, and in what setting knowledge sharing takes place (concept of Ba). When it comes to the difficulties of knowledge sharing, however, there is consensus that there are difficulties when it comes to knowledge sharing, and that that is an aspect that needs to be improved. The issues that make it difficult to share knowledge are; time management, communication between the departments must become better, having a clear and structured way of sharing knowledge, and making sure that knowledge sharing is prioritized on a daily basis.

4.2 Motivation to share knowledge

The first part of the analysis showed that there are some issues when it comes to knowledge sharing in the Obesity Department – namely that knowledge sharing from department to department is not optimal and that communication must be improved. An aspect that was therefore looked into was the motivation to share knowledge, or the lack of motivation to share knowledge. Literature has shown that there is a lack of knowledge sharing due to two reasons: motivation – both internally and externally amongst the employees, and a collaboration problem. In his book called “*Collaboration*”, professor Morten T. Hansen mentions four barriers that prevents collaboration amongst employees:

1. *Not Invented Here Barrier* – most likely stems from motivational limitations when people are not willing to reach out to each other. Hansen points out that communication typically stays within the group and people protect self-interest. Pride may get in the way, or sometimes fear of losing face.
2. *The Hoarding Barrier* – people are holding back due to several reasons. Competitive relationships may occur, and, losing power to the other employees

3. *The Search Barrier* – when the employees cannot find the information they are looking for that will help them. This could potentially be due to lack of sufficient networks to connect with people.
4. *The Transfer Barrier* – this occurs when people do not know how to work together. For example, volumes of knowledge on bookshelves or in computer code, often referred to as tacit knowledge, or even product or service "know-how" that takes experience to master can be difficult to pass on to others.

(Hansen 45)

Another aspect of the motivation to share knowledge may be the lack of motivation to share knowledge. Literature suggests that there is relationship between extrinsic motivation and knowledge-sharing behavior (Rabbiosa 391). It is argued by Cabrera and Cabrera that the process related decisions about whether or not to engage in knowledge sharing bears resemblance to cost-benefit analysis: “when individuals perceive a link between knowledge sharing behaviors... and organizational rewards... they will be more inclined to participate in knowledge sharing activities (Minbaeva 391).

The questions that were asked about the employees’ motivation to share knowledge are shown in the interview guide available under appendix A.

The questions asked in the interview guide regarding the theme of motivation to share knowledge range from asking about why the employees should share knowledge, what makes the knowledge sharing difficult, whether or not the employees have motivation to share the knowledge they have and if there is a lack of understanding what the other employees are working on within the Obesity department. All together, the analysis of the answers to the questions should provide information about key aspects like the different ways through why knowledge sharing is difficult, the lack of motivation and thereof, and if there is an understanding of what the two departments are working on.

Overall, the respondents shared mixed views regarding the topic under study. Tables 5-8 report a number of quotes illustrating the main results identified from the overall scrutiny of the complete answers from the interviews. For those interested, the transcripts of the interviews can be found in the appendix B.

In table 5, Why Should You Share Knowledge, asks the general question of why the employees should share knowledge, and what benefits there are by sharing knowledge

In table 6, What Makes Knowledge Sharing Difficult, the employees were asked what makes the knowledge sharing aspect difficult

In table 7, Is There Motivation To Share The Knowledge You Have, the employees were asked whether or not they personally have the motivation to share the knowledge they possess

In table 8, Is There A Lack of Understanding What The Other Department Is Working On, the employees were asked if they knew what the other department was working on, and what their competencies were

	2	4	3	5	6
Why should you share knowledge?	<p>1230 Because if you don't, that will hurt the team as a whole and it will make things go back.</p> <p>2048 Everybody gains from it</p>	<p>1635 It's extremely important! Because without KS you won't get anywhere. If you sit on an idea and you can't communicate it or share it, you won't get anywhere because we are highly specialized people in the org.</p> <p>1745 KS is everything! The more you share, the more you create!</p>	<p>2213 We grow so much, so it's important we get a good KS culture.</p>	<p>423 Because I think it's stupid that there are projects that are making the same mistakes, or if someone says, I've worked on that, you can just get my data etc. KS is also working together on the same project and goals</p>	<p>It increases common understanding of each other, and it increases the understanding of the research that is taking place. You can prove if people are right or wrong</p>

Table 5 "Why Should You Share Knowledge?"

Knowledge sharing is an important aspect of a successful company. According to literature, knowledge sharing can be beneficial. *“Knowledge sharing is critical, as it can contribute to knowledge application, innovation, and ultimately an organization’s competitive advantage”* (Wang et al. 979). Moreover, *“One of the keys of a successful multinational company is the company’s ability to share and transfer knowledge efficiently and effectively through its intra-organization networks”* (Peltokorpi 49).

Analyzing the responses from the employees, there is a broad consensus about why employees should engage in knowledge sharing. The benefits according to the employees are many: it is beneficial for others, we grow internally, it creates a competitive advantage, without knowledge sharing you will not get anywhere, and it increases the understanding of what others are working on. The benefits fit with what literature suggest, and one could therefore argue that good arguments for why people should engage in knowledge sharing are present. Furthermore, according to one employee, it makes the process of working together easier, because it increases the understanding of each other as skilled employees, but also it creates a higher understanding for the projects that are taking place. It seems that the employees are aware of the benefits of knowledge sharing, and they have an open mind to knowledge sharing. However, knowing this, how come it does not happen more frequently amongst the employees and between the departments?

	1	2
What makes KS difficult?	1223 There's no motivation internally to strengthen the collaboration because we are two different departments. Only if we work as a team on a project, but not daily.	2003 Interaction between departments take time, and we are squeezed for time. We have to set it up, have it a requirement

Table 6, "What Makes Knowledge Sharing Difficult?"

* Due to missing responses from the employees, only two responses were recorded

Social interaction is argued to be one of the reasons why employees are or are not engaged in knowledge sharing practices. Developing the trust and cooperation amongst employees can be time consuming, but however, when socialization mechanisms that develop those aspects are present in the company, they have been found to positively affect knowledge transfer (Minbaeva 392). In a similar vein, research has indicated that the level of interaction between members of different groups or units has a significant positive effect on the level of knowledge exchange. Frequent interactions were associated with a higher level of knowledge sharing. What is more, without intergroup interaction, organizational knowledge may be trapped in individual minds and knowledge management systems, and thus be underleveraged (Hansen 34).

According to the employees, there is a lack of motivation internally to strengthen the collaboration and knowledge sharing because they are two different departments. If they collectively work as a team on a project, things look differently. One could argue that this is an example from literature that suggests such a scenario from Morten T. Hansen's "Collaboration" book. One could argue that there perhaps is a 'not invented here barrier', as they are two separate departments working on different things, and therefore the employees do not have the motivation to share and engage in collaboration because they do not feel like reaching out to each other. It is argued by Cabrera and Cabrera that the process related decisions about whether or not to engage in knowledge sharing bears resemblance to cost-benefit analysis: "when individuals perceive a link between knowledge sharing behaviors... and organizational rewards... they will be more inclined to participate in knowledge sharing activities (Minbaeva 391).

A reason why that perhaps occurs is due to the other problem what was mentioned by one of the employees. It is the problem of time. Everybody is focused on different projects, and combined they are all together time consuming. Knowledge sharing then takes a lower priority, and hence the lack of it. Throughout the interviews, there have been comments that interaction amongst the employees is lacking due to the lack of interaction on a daily basis. This goes well with what theory suggests about social interaction. Social interaction is argued to be an important aspect in knowledge sharing and communication. As is also mentioned by another employee: "*Sometimes it's hard to motivate because there's a lack of communication between Invivio and Invitro, and that's no optimal.*"

(Appendix B, interview 1) When communication and social interaction is at a minimum, knowledge sharing then becomes more difficult, and creating a culture that shares becomes more difficult to create.

Knowing this, it then became clear that it had to be asked whether or not the employees personally had a motivation to share the knowledge they possessed. In literature, it is distinguished between the intrinsic motivation and extrinsic motivation. Individuals are extrinsically motivated when their needs are satisfied indirectly, primarily through financial compensation but also through gaining power or recognition (Osterloh et al. 64). Individuals are said to be intrinsically motivated when they undertake an activity for its own sake, because it satisfies internal needs rather than gives external rewards (Osterloh et al.64).

	1	2	4	5	6
Is there motivation to share the knowledge you have?	“As a project leader it’s important to share between InVitro and InVivo because we are working on specific projects and we need the expertise from both sides in order to get the right answer”	“Depends on the circumstances and person. Sometimes it takes long time in InVivo because you want to make sure about the results, and sometimes people then find it that you don’t share it because it takes a long time. Your studies might take a day”	“Not sharing is due to political reasons. Sometimes in Novo small groups are shared, small informal groups that have more knowledge, and they aren’t good at sharing it.”	“You can’t do anything on your own, you are dependent on someone else. Things go by much faster when you share knowledge. That’s the advantage by being in place that’s as big as this. There’s a lot of knowledge, but it’s also a disadvantage because you don’t know where to find it.”	“It gives you the freedom to think outside the box, and it’ll help you tremendously.”

Table 7, “Is There Motivation To Share The Knowledge You Have?”

Looking at the results, they show us that the employees have mixed feelings when it comes to their motivation to share the knowledge they have. To some employees, sharing knowledge is a must, simply due to their job position, but for others, it is a little more personal. As it was mentioned in the previous chapter (Knowledge and knowledge sharing), an employee mentioned that sharing knowledge is a question about whether an employee is an introvert or an extrovert. One could argue and assume that an employee whose job description requires to share knowledge, he or she will be more extroverted as a person, as the success of the project depends on that person being able to pass on important information. I would though argue that that has nothing to do with the motivational aspect however. Working as a project leader, that person has the responsibility to share important information and knowledge, and that is therefore a compelling argument for why as to those employees are forced to be a little more extroverted in terms of character. The question that arises is where do those employees find motivation? One could argue that project leaders find motivation to share knowledge from within because they make it their responsibility to make sure that the projects go well, and that the right information is passed on to the right people. As an employee from *In Vivo* says: “*As a project leader it’s important to share between In Vitro and In Vivo because we are working on specific projects and we need the expertise from both sides in order to get the right answer*” (Appendix B, interview 1). This goes well with what theory suggests about people being motivated internally- because they undertake an activity for its own sake, because it satisfies internal needs rather than gives external rewards. When that same employee was asked why that employee engages in knowledge sharing, the answer was: “*It’s easy for me*” (Appendix B, interview 1). Hence, one could make the argument that the internal motivation is present.

On the contrary though, an employee from *In Vitro* is extrinsically motivated to share knowledge, “*You can’t do anything on your own, you are dependent on someone else.*” (Appendix B, interview 5). Being dependent on someone else can be argued as being an external motivation because you get your needs satisfied indirectly.

Sharing the knowledge they employees have is a personal thing, and it may vary from time to time, or project to project. One could argue that Morten T. Hansen’s ‘hoarding

barrier' becomes an option when an employee says that sharing knowledge or not sharing knowledge is due to political reasons. Whatever those political reasons may be are hard to find out, but one cannot help but think about the personal interest that might be involved in this. One could however also argue that this is due to external motivation as one is trying to seek recognition and reward through power and acknowledgement, and goes well with what the theory suggests about external motivation forces. It automatically creates a link to what the employees have said about what knowledge is, namely power, and that might be the case when they mention the political reasons. If sharing knowledge has so many benefits as the employees state themselves, why does it not happen more often then? Granted that sometimes sharing knowledge and sharing research might take time due to patenting reasons, ongoing research, and validation reasons, however that does not serve as a valid argument as to not engage in knowledge sharing.

It was stated earlier in the analysis what the positive aspects of knowledge sharing are, and one employee further elaborates on why sharing knowledge is good for the company: *"You can't do anything on your own, you are dependent on someone else. Things go by much faster when you share knowledge. That's the advantage by being in place that's as big as this"* (Appendix B, interview 5).

However, there are also down sides to sharing knowledge according to an employee and perhaps that is the reason for the lack of motivation: *"There's a lot of knowledge, but it's also a disadvantage because you don't know where to find it."* (Appendix B, interview 5). The latter statement can be a compelling argument for another barrier that Morten T. Hansen proposes – 'the search barrier'. Due to the size of the company and the amount of knowledge that potentially is available, makes it difficult to find what is necessary.

Looking at the answers more thoroughly, one gets a feeling that the employees do have the working understanding of why knowledge sharing is important and should be done on a daily basis, however one can question the commitment level. In this case, the saying 'action speaks louder than words' is not present. Words are being spoken, but not much action is taken. The employees are in line with the benefits, however, the actions that need to be taken are missing.

	1	2	3	4	5
Is there a lack of understanding what the other dpt is working on?	<p>“In order to collaborate we need to know what the other employees bring to the table. If you know what you want, it’s easier to collaborate and what you want”.</p> <p>“We need more information about the other department in order to strengthen the relationship with them.”</p>	<p>“From person to person I understand a little bit, but within the department I don’t know where they are and don’t understand why things take so long”</p>	<p>“I don’t know. I’m not sure. I think it’s a missing understanding and priority what KS actually does. It’s about priority. Unfortunately I also think it’s because of hierarchy. So many researchers and leaders and layers.”</p>	<p>“Sometimes there’s too much information, and it becomes needy and greedy. If a chemist is presenting, he should make sure the audience understands it. Sometimes its too hard core information.”</p>	<p>“I think invivo is having bigger issues understanding what invitro is working on rather than the other way around. Maybe I’m biased because I myself have an invivo background, but I think invitro is more nerdy stuff, and invivo is more I give an animal a drug and I see what happens next. It’s more intuitive.”</p>

Table 8 “Is There A Lack of Understanding What The Other Dpt. Is Working On?”

Asking about whether or not the employees have understandings of the other employees' work, the answers vary greatly. One would assume that when two departments are working side by side, or hand in hand, there would be an understanding of the other department is working on, because a lot of knowledge sharing happens through the cross department projects, and is according to the employees, that that is the place where a lot happens. However, that is not the case, and a better understanding of each other is necessary.

An employee acknowledges that there needs to be a better collaboration between the departments, and that can only be done if they get to know about the others. Strengthening the relationship is done through more information about the other department and that is an aspect that needs to be worked on. In other words, this could be a valid reason as to why social interaction amongst the employees is looked for. As it was mentioned earlier in the analysis, the employees acknowledge that on a personal level, the understanding of each other is greater than between the departments, and one should naturally ask why that is. An employee mentions that the lack of understanding perhaps stems from not fully knowing how to engage in knowledge sharing because it is not prioritized. If it were prioritized more, the understanding of each other will increase, and it would benefit all the parties involved. An employee mentions that there perhaps is too much information and knowledge that is being shared, but that the information is too hard-core. One could argue that this is an example of the fourth barrier that Morten T. Hansen talks about, the 'transfer barrier'. This occurs when people do not know how to work together because there's a lot of tacit knowledge that needs to be transferred and it takes a lot of experience and mastery to transfer that type of knowledge. Moreover, another employee unconsciously acknowledges that, and perhaps blames the knowledge sharing process difficulties to one department. According to this employee, Invivo is having bigger issues when it comes to understanding what Invitro is working on, rather than the other way around. Invitro is more nerdy stuff, and Invivo is more, "*I give an animal a drug and see what happens next. It's more intuitive*" (Appendix B, interview 2).

The analysis shows that the employees' motivation to share knowledge is broad, and the reason why knowledge sharing is being prevented is perhaps due to the large variety of

ways employees are motivated because there is no common ground. There is an understanding in broad terms what the other department is working on, however, nothing is done to improve the overall communication and knowledge sharing aspect.

4.2.1 Summary of motivating to share knowledge

Summarizing the motivation to share knowledge chapter, there was a broad consensus as to why knowledge sharing should be done and what positive aspects there are by sharing knowledge. According to some of the employees, what makes knowledge sharing difficult is due to the lack of motivation to strengthen the collaboration and relationship between the departments. One could in other words argue that there is a missing social interaction aspect. The different collaboration barriers as Morten T. Hansen presents them, have all been identified through different examples from the daily life in the Obesity department. The extrinsic and intrinsic motivations as to why to share knowledge and not to share knowledge are broadly represented amongst the employees. Some are more intrinsically motivated because it is easy for them to share knowledge, however some are extrinsically motivated because they are motivated not to share due to political reasons as they are seeking power and recognition through that, and others are extrinsically motivated to share because it is not possible to do anything on your own because you rely on others and do not want to let them down.

4.3 Culture

One thing is looking at the organizational culture and how that can have an influence on the knowledge sharing and communication process, but in this case, how much do national cultures play a role when it comes to knowledge sharing and communicating in a multinational corporation?

Multinational corporations are characterized by geographical, cultural, and linguistic fragmentation (Barner-Rasmussen et al.), and a deeper understanding of the different national cultures serve as a source of significant advantage when it comes to communication and knowledge transfer.

Working in a multinational company with employees from several different countries, one can assume that different national cultures might play a role when it comes to knowledge sharing and communication. As was mentioned earlier, the employees in the two Obesity departments represent multiple nationalities, and perhaps that is evident in their daily working life.

Using Gert Hofstede's Model of Cultural Dimensions, which has been used as a framework in answering the question about the role of national cultures in explaining knowledge sharing in MNCs, the model can be applied to international business communication as it is commonly agreed that communication is one of the primary concerns for business (Peltokorpi 49). So, for professionals who work internationally; people who interact daily with other people from different countries within their company or with other companies abroad; Hofstede's model gives insights into other cultures. In fact cross-cultural communication requires being aware of cultural differences because what may be considered perfectly acceptable and natural in one country, can be confusing or even offensive in another. Cultural dimensions affect all the levels in communication: verbal (words and language itself), non-verbal (body language, gestures) and etiquettes do's and don'ts (clothing, gift-giving, dining, customs and protocol).

Further, De Long and Fahey's article entitled 'Diagnosing Cultural Barriers to Knowledge Management', has identified four ways in which culture influences behavior central to knowledge creation, sharing, and use (De Long, Fahey 113), however, this thesis will only look at two of the ways: Culture creates a context for social interaction, and Culture mediates the relationships between levels of knowledge.

The questions that were asked about culture and national culture are shown in the interview guide available under appendix A.

The questions asked in the interview guide regarding the theme of culture range from asking about if national cultures are evident on a daily basis, what the culture is like, and what the differences are in cultures and national cultures. All together, the analysis of the answers to the questions should provide information about key aspects like the different

ways through which national culture and cultures play a role in the knowledge sharing process and communication.

Overall, the respondents shared similar views regarding the topic under study, however variations occurred in some aspects. Tables 9-11 report a number of quotes illustrating the main results identified from the overall scrutiny of the complete answers from the interviews. For those interested, the transcripts of the interviews can be found in the appendix B.

Table 9, Are National Cultures Evident, looks at whether the different national cultures can be seen on a daily basis and in the interaction amongst the employees

Table 10, What's The Culture Like, asks the employees about their perception of what the culture is like in the Obesity department

Table 11, What Are The Differences, looks at the differences in the different cultures and what effect that has on the daily life

	1	2	3	4	5
Are the national cultures evident on a daily basis?	“I don’t know, I don’t think about it. I’m used to it because I’ve lived abroad. Maybe there are some small things”	“Yes! You can’t stereotype though. Americans are fast paced, Americans take faster decisions compared to Danes, hierarchies are different. Humor is different, energy. Danes speak Danish all the time, and I feel left out in the conversation.”	“I feel it in our language. We have two Americans and one Indian in my dept.”	“Yes, when we are collaborating with the Chinese. That’s cultural journey. They are very different from us when it comes to KS, and admitting errors.”	“When you go to China yes, but not here in Måløv. When they first arrive, maybe a little, but not much. It’s not something that you pay attention to, and it’s not going to affect you. Event though you might say that Swedes and Danes are the same, they really aren’t because there are small things that differentiate themselves, but it doesn’t have an effect on things.”

Table 9 “Are National Cultures Evident on A Daily Basis”

	1	2	3	5
What are the differences?	“The boss is more boss here in DK. It’s a bit more hierarchical in Denmark”	“Decisions are made more conservatively compared to US companies. In the US it’s sometimes too fast. Denmark is more stable, but slower at moving forward. The risk taking culture is much lower here.”	“The difference doesn’t lie in national cultures, but more if you come from a pharma company or/and a university. Not so much DK-USA-GER-SWE. On China there’s a difference though.”	“Here (Novo) you work towards a product creation, but at a university you work on small detail that could be academically interesting. And that’s nice if you work at a uni, but that’s not what you should spend your time on here in Novo. When working here, you have to make sure you keep in mind that we are working with drugs that potentially cure illnesses and they can be a massive business, so you need to have that in the back of your mind when you work. At uni level, you don’t have to think about that kind of process, because you don’t focus on those things. And that’s a huge difference!”

Table 11 “What Are The Differences”

There is a consensus amongst the employees that there are national differences in their daily lives, however the number of national differences are not as vast as one could assume. Looking deeper into the responses, one will find that the differences are not as big amongst the employees of the two departments, but attribute the biggest difference nationally to their Chinese colleagues. Several of the employees mention that when doing business with the Chinese, one has to be prepared in a different way, and the process of getting things done is very different compared to what it is like in Denmark. However, the biggest difference is not a national culture issue, but more where you as an employee come from. Combining tables 9 and 11 are relevant in this case, because as the analysis proves, the national differences are not as great as one might expect, but highlights what the employees believes are the differences.

Note: When looking into Gert Hofstedes model and comparing the answers that are provided by the employees, it needs to be noted that since Novo Nordisk is Danish company, and the Obesity headquarter is located in Måløv - Denmark, the Danish scores in his model will serve as a base for comparison of the cultural dimensions.

According to Gert Hofstede's model and theory, Danes are low in the uncertainty avoidance score, which means that Danes are accepting change of plans, not being so certain about the future outcome of events, and change is a natural part of their work life. However, what is being mentioned next, contradicts the theoretical part according to some of the employees. Two employees mention that the language between the native Danish-speaking employees and the native English-speaking employees is visible in their daily lives. The Danes are not always so good at speaking English on a daily basis, and sometimes the foreign employees feel left out some, despite the corporate language being English. When asked about why that is the case, the employees mentioned that it was due to the familiarity of the language, and it makes things easier. Knowing this, and looking into Gert Hofstede's model, one could make the argument that this is a sign of uncertainty avoidance, as the employees are limiting uncertainty.

One of the employees mentions the big difference on pace when it comes to decision-making and general work. Making fast paced decisions can be attributed to the masculinity/femininity aspect of Hofstede's model. According to Hofstede, Denmark is a feminine country, because Danes are fans of long conversations and making sure that consensus is reached amongst people before making a decision. *"Decisions are made more conservatively compared to US companies. In the US it's sometimes too fast. Denmark is more stable, but slower at moving forward"* (Appendix B, interview 2). Another employee however has a different attitude when it comes to that matter. The employee believes that consensus is not always reached, because it is often seen that when at meetings, employees leave the meeting even before a decision has been made. That would never happen in the employees' native country, and finds that disturbing and disrespectful. What is perhaps the underlying issue here is there might not be a thoroughly talked through consensus on many issues, and that can perhaps create trust issues and perhaps that is part of the reason why knowledge sharing and communication isn't the best. Making sure that consensus is reached from all sides might be beneficial for the parties involved.

Another difference according to an employee is *"The risk taking culture is much lower here."* (Appendix B, interview 2). Since Americans are making faster decisions, and perhaps not always reach a consensus before a decision is made, are attributes that can be argued to go well with theory that America is a more masculine country. The assumption that Denmark has a lower risk culture goes against what is suggested by literature. In her paper called 'Effects of Culture on Firm Risk-Taking: A Cross-Country and Cross-Industry Analysis', author Roxanna Mihet argues that corporate risk taking culture is higher in societies with low uncertainty avoidance, low tolerance for hierarchical relationships, and which value individualism over collectivism. To further strengthen the notion that Denmark is an individualistic country, a study done at University of Aarhus in Denmark which looks at different scenarios pertaining to the different scenarios presented by Gert Hofstede, confirms that Denmark is an individualistic country, and Gert Hofstede's model corresponds with those findings.

Another difference that is mentioned by an employee is the hierarchy. The boss is more boss in Denmark, and that is different from the employee's native country, but it does not have a major effect on the daily work life.

The biggest difference according to most of the employees is not national culture, however, it is attributed to the background and education of the employees. *“The difference doesn't lie in national cultures, but more if you come from a pharma company or/and a university. Not so much DK-USA-GER-SWE.”* (Appendix B, interview 3). The difference is described well by one of the employees: *“Here (Novo) you work towards a product creation, but at a university you work on small detail that could be academically interesting. And that's nice if you work at a University, but that's not what you should spend your time on here in Novo. When working here, you have to make sure you keep in mind that we are working with drugs that potentially cure illnesses and they can be a massive business, so you need to have that in the back of your mind when you work. At uni level, you don't have to think about that kind of process, because you don't focus on those things. And that's a huge difference!”*(Appendix B, interview 5). The academic nationality is the difference amongst the employees. It is sometimes forgotten by the new employees that the company is driven by the company's goals. There is therefore not time for anything else, and people from the university settings think that it is strange that the employees do not go into depth with everything. People who are used to working in pharmaceutical setting, have a different take on things, and that is according to the employees the biggest difference.

When asked about what the culture is like at the Obesity department, interesting answers were presented.

	1	2	3	5
What's the culture like?	“There's too much of a silo culture, and that's why we don't collaborate enough”	“Here things are in silo. The culture is very much like that. People are either dedicated invivo or invitro, and the reason for that is that you are required to have a high amount of specificity in your work.”	“We need to change the KS culture. Reward people to share. We need a better KS culture.”	“Here (Novo) you work towards a product creation, but at a university you work on small detail that could be academically interesting. And that's nice if you work at a uni, but that's not what you should spend your time on here in Novo. When working here, you have to make sure you keep in mind that we are working with drugs that potentially cure illnesses and they can be a massive business, so you need to have that in the back of your mind when you work. At uni level, you don't have to think about that kind of process, because you don't focus on those things. And that's a huge difference!”

Table 10 “What's The Culture Like”

There is a large consensus amongst the employees that there is a silo culture in the Obesity department. A silo culture or mentality as defined by the Business Dictionary is a mindset present when certain departments or sectors do not wish to share information with others in the same company. This type of mentality will reduce efficiency in the overall operation, reduce morale, and may contribute to the demise of a productive company culture (Forbes) As one employee says, employees are either dedicated *In vivo* or *In vitro* and mentions that it is due to employees are required to have a high degree of specificity in their work. Another employee mentions the silo culture being the reason why collaboration is at a minimum.

According to Brent Gleeson, Master's degree holder from University of San Diego in real estate finance, an entrepreneur, and the Co-founder and Chief Marketing Officer at Internet Marketing Inc. (IMI), finds that the reason for a silo culture more often than not lies in the result of a conflicted leadership team. It is up to the leadership team to make sure that they set goals and a unified vision, and that must be communicated throughout the company. When such actions are not taken, silo culture has room for growth, and that can create problems. An employee talks about that: *"The organization changes quiet a lot, so the department manager who initiates something, is all of a sudden no longer the department manager, so a lot of communication is then lost, simply due to them keep moving around in the organization."*

An employee mentions that the knowledge sharing culture is not good. Employees need to get better at sharing, and a way employees can be motivated to share more is if they are rewarded. Overall, the knowledge sharing culture must be improved, as it comes with great benefits – as they were discussed in the previous chapter under the reasons why employees should engage in knowledge sharing.

One could assume that the frequent changes in the organization has a bigger impact on the Obesity department than perhaps expected, and that may well be one of the reasons why knowledge sharing and communication is not working well. There is a lack of consistency and perhaps the employees do not feel confident in what needs to be done on a daily basis. As it was also mentioned in the introduction, the Obesity department has not existed more than a year, and perhaps there is still a lack of rhythm and understanding of

each other, hence the creation of the silo culture. An assumption is also that there is not yet created homogeneity in the department, and therefore the mixed responses when it comes to the motivation to share knowledge, and the organizational culture.

4.3.1 Summary of culture findings

In summary, the findings in the culture chapter suggest that there is a large consensus on the differences that are in the obesity department when it comes to culture. National cultures are visible in the daily life, however they are not as vast as one would assume. There are differences in Hofstede's uncertainty avoidance cluster, and whether an employee is from a masculine or feminine country. However, the greatest cultural difference is not national, but academically. There is a difference on an employee's background, whether he or she comes from a university setting or a pharmacological setting. Employees from a university setting approach work differently compared to employees who come from a pharmacology setting.

In general, the culture was described as being a silo culture, and that can be attributed to the changes in leadership and management, and a high specialization amongst the employees in their respective fields. A better knowledge sharing culture is what some of the employees are searching, and perhaps employees would engage more in knowledge sharing if they got rewarded for it.

4.4 Language, communication, and communication channels

The previous parts of the analysis have presented arguments that show that knowledge sharing and communication is not at its best, and it is therefore important to look at how languages, communication, and communication channels all influence the communication and knowledge sharing process as well.

When talking about sharing and communicating knowledge, we need to take a look at how things are communicated. Granted, that language is an essential, if not the most important part of knowledge transfer (Peltokorpi 49), but *how* exactly is communication done? In order to answer that question, Daft and Lengel's Communication Richness Media Theory is a framework that describes a communications medium by its ability to re-

produce the information that is send over it. The communication channels will be analyzed by applying the model and will look at what remedies are used to communicate. Another important aspect when communicating and sharing knowledge, is to look at how it is done in terms of communications strategy. There are two different ways communication can be stored and shared: through the codification strategy and through the personalization strategy. The former strategy is used when knowledge is carefully codified and stored in databases, where it can be accessed and used easily by anyone in the company (Hansen et al. 107). The other way, personalization, is done when knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts (Hansen et al. 107).

The questions asked about the theme language, communication and communication channels are shown in the interview guide under the appendix A.

The questions asked in the interview guide regarding the theme of language, communication and communication channels range from asking about how employees communicate on a daily basis, what languages they use, if there are any problems understanding each other, and what the most biggest problem is when it comes to communicating within the Obesity department. All together, the analysis of the answers to the questions should provide information about key aspects like the different ways through which communication takes place, and what makes it difficult to communicate.

Overall, the respondents shared similar views regarding the topic under study. Tables 12-16 report a number of quotes illustrating the main results identified from the overall scrutiny of the complete answers from the interviews. For those interested, the transcripts of the interviews can be found in the appendix B.

In table 12, What Langue Do You Use, highlights the different languages that are being used on a daily basis

In table 13, Are There Any Problems Understanding Each Other, looks at what problems there might be when communicating with each other

In table 14, What Technological Remedies Are Being Used, explores what types of technological remedies are being when engaging in communication

In table 15, How Are Complex Communication Issues Solved, looks at how complexity is dealt with

In table 16, The Biggest Problem When Communicating and Sharing Knowledge, looks at the overall in communication and knowledge sharing highlighted by the employees

	1	2	3	4	6
What language do you use on a daily basis?	<p>Danish and English</p> <p>“Everything in English, but we go to Danish very often because Danish is our mother tongue, and it makes it easier. Sometimes when we switch to Danish it actually makes things easier”</p>	Danish and English	Danish and English	Danish and English	Danish and English

Table 12, “What Language Do You Use on A Daily Basis”

	1	2	5
Are there any problems understanding each other?	<p>“Not really, but when we do have things in writing we understand each other more, and in meetings we see some people talk more.”</p>	<p>“It is difficult to share knowledge sometimes with the technicians. They are having some difficulties. Old are afraid of English. Not the young. It’s a hindrance. They are insecure, but good at what they do”</p>	<p>“With China there are problems. A little more top down, it’s challenging sometimes. As a woman is challenging to get the respect from a 50 year old man if you aren’t a professor in your field. Danish women aren’t used to that. I’ve found out that I have to communicate through the university because that way I’ll get the message across easier and faster. It’s much more hierarchical there”</p>

Table 13, “Are There Problems Understanding Each Other”

As the answers show, all of the employees answered that they are using English and Danish on a daily basis. To some, English is native, and to others, Danish is native.

Since the corporate language is set to be English, and having both foreign and domestic employees, I was curious to see if there are any issues understanding each other for two reasons:

1. Communicating in a language that might not be native can cause insecurities
2. Where do miscommunication issues arise

The answers provided are all mixed answers. According to one employee, the older employees in the company are afraid of English and will therefore try to avoid that if possible in order to decrease likelihood of misunderstanding, because their English is not the best, and that is a hindrance sometimes. They can be difficult to engage in knowledge sharing with. However, the employee recognizes their talents as technicians.

Another employee says that the problems occur with the Chinese, as communication is a little more top down in China. It is therefore easier to communicate through the university in China because that way it will get the message across easier and faster.

A third employee says that there are no problems understanding each other, however, when employees communicate in writing, it is easier to understand each other more. It would suggest that that will decrease the likelihood of misunderstanding and communication, and that goes well with what is the more favorite remedy to use when communicating amongst the employees, but also what is suggested by Daft and Lengel in terms of task equivocality (exists when there are multiple and possibly conflicting interpretations for the information or the framework with which to interpret it). Analyzing employees' preferences in communication is therefore an obvious choice.

	1	2	3	4	5	6
What remedies are you using to communicate and share knowledge with?	“Verbal at meetings, email, telephone. The easiest is F2F, but sometimes you need to have things in writing. That way you decrease the chance of misunderstandings and you’ll have something to fall back to.”	“Email, phone, text, F2F, meetings. I prefer small meetings. That way people are productive.”	“In between departments we use academic meetings, cross projects and general projects.”	“Power point, email, skype, F2F, phone. Personal contacts is the best though.”	“Power point haha and written reports. That’s not always so cool. Phone, email, F2F, text etc. Very simple stuff.”	“Mail, meetings, academic meetings”

Table 14 “What Remedies Do You Use To Communicate?”

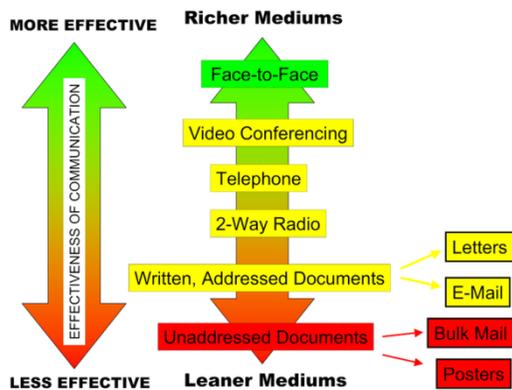
	1	2	4
How do you solve complex communication issues?	“Personal issues I’ll go F2F, if not then the phone and email. We also use Globeshare, however, it’s difficult to navigate through and finding things.”	“When it’s complex, I’ll use visual effects, but when it is P2P I’ll use F2F”	“F2F is best, and easiest. Emails are always in English in order to decrease miscommunication and misunderstandings” “Writing is good, but when I’m upset I think it can backfire when having it in writing because you can trace it.”

Table 15 “How Do You Solve Complex Communication Issues?”

* Note: There are only three direct employee answers, in that the other employees answered that question indirectly when answering another question

It is evident that communication happens through a large variety of remedies: verbal, email, face to face, text, Power Point, Skype, phone, text, and meetings. However, there are preferences in communication remedies when it comes to solving complex communication issues. Personal face to face is considered the most preferable when dealing with complex issues. However, email and written communication is also amongst the top replies as that can be used as evidence or backup in case there are further misunderstandings. In addition, having things in writing helps decrease the likelihood of misunderstandings and miscommunications. That goes well with what theory suggests, as the more ambiguous and uncertain tasks are, the richer the format is required and necessary in order make sure that the proper and right information is communicated. Furthermore, based on contingency theory, and information processing theory, it explains that richer, and more personal communication means are more effective for communication of equivocal issues than leaner, less rich media.

Figure 2 – Daft and Lengel’s Media Richness Overview



As Figure 2 illustrates, face-to-face is suggested by Daft and Lengel to be the most effective way and most rich way to communicate. The remedies that are used by the employees to communicate are all represented on the illustration.

As it was addressed earlier in this chapter, written communication is often used to decrease the chance of misunderstandings according to an employee, however, on the media richness chart it is categorized as a less effective way communication. One could wonder

if written communication is the connection between the two departments, and the most successful way of engaging in knowledge sharing?

If understanding each other more when things are in writing, should that not then be an indication that things should be codified more, despite it being a leaner medium in terms of task equivocality and uncertainty?

A way of managing knowledge and information in terms of where to find it and how to communicate it, theory suggests strategies for managing knowledge and communication. There are two different ways knowledge and communication can be stored and shared: through the codification strategy and through the personalization strategy. The former strategy is used when knowledge is carefully codified and stored in databases, where it can be accessed and used easily by anyone in the company (Hansen et al. 107). The other way, personalization, is done when knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts (Hansen et al. 107). Through the analysis it became evident that knowledge sharing happens through meetings and cross team projects, so one could argue that the primary knowledge exchange happens through the personalization strategy, however, when looking for information in databases, a codification strategy is needed.

In terms of what the employees prefer, one can make an argument that codification strategies should be taken into use because having things in writing seems to work better. An argument for the codification strategy can be made as an employee mentions that knowledge is something that is reproducible, and in order to be able to reproduce, data must be available, and it must be found easily. Having data or information that is codified makes the communication and knowledge sharing process easier. It is however worth mentioning that both strategies are being used on a frequent basis. The personalization strategy is used on a daily basis when engaging in conversation with your colleagues, for example either during lunch breaks or when sitting across from each other in the offices. The codification strategy is also used on daily basis when data and information is looked for in Globeshare, which is the Novo Nordisk intranet, or at the shared drives that contain all information that one department has (just data though). However, as it was mentioned earlier by an employee, finding information in general is difficult, and a lot of

knowledge is lost because it is not shared and stored the right way. That is another compelling argument for having a codified strategy of knowledge management strategy.

	1	2	3	4	5	6
Biggest problem when communicating and sharing knowledge?	“National and international is no difference. The biggest challenge in communication is cultural changes, time zones, equipment and such.”	“Good communication between people, but not good at department to department. I’d like to know what the others are working on”	“People forget to talk about things. They keep it to themselves, and that creates small closed groups. That’s our weakness in Novo. Communication and KS in general.”	“The hardest is the time. Technologically it’s easy to communicate and share knowledge with people, but logistically it’s hard” “Time and availability. It’s a matrix organization.”	“Time makes it difficult. There’s not enough time sometimes”	“Time, and the lack of structure in the organization makes it difficult. Communicating vertically takes a long time, but horizontally it takes less time.”

Table 16 “The Biggest Obstacle In Communication and Knowledge Sharing”

When asked about what the biggest obstacles are when it comes to communication and knowledge sharing, the answers are familiar with what has been said throughout the previous chapters about knowledge, culture, motivation, and communication and language. The problems that arise are as mentioned before, a lack of time (both national and international times zones), bad communication department to department, people forgetting to share knowledge, which in result creates small closed groups, and a generally bad knowledge sharing culture.

The mentioned problems have been touched upon and analyzed throughout the four chapters in the analysis, but a further discussion of the interpretations and findings will be highlighted in the discussion part.

4.4.1 Summary of language, communication, and communication channels

Summarizing the language, communication channels, and communication chapter, one can conclude that the employees are using both the English and Danish language on a daily basis. Moreover, the analysis suggests that there is a good understanding of each other on a personal level in the departments, however there are greater misunderstandings when communicating with their Chinese colleagues. Misunderstandings also occur when communicating with the technicians, as the English language is a hindrance at some points. The study also finds an array of communicative tools are being used, such as phone, email, verbal, face to face, Skype and more, which makes communication easier from a technological point of view. The study also finds that some employees prefer having information and knowledge in writing (codified) as it decreases the chance of misunderstandings and miscommunications. Furthermore, when dealing with complex communication issues, a face-to-face approach was the more favorable amongst the employees, and that goes well with what literature suggests about dealing with complex communication issues.

5.0 Discussion

The findings in the knowledge chapters suggest that there is large consensus amongst the employees as to what is defined as knowledge, and how knowledge is shared. The employees' definition of what constitutes knowledge goes well with what literature suggests

and how it was defined for this thesis' purpose. There was a large understanding and acknowledgement as to why employees should engage in knowledge sharing, however, the analysis later showed that different coding norms and routines would prevent communication and knowledge sharing taking place due to the different backgrounds of the employees, despite working in the same department. The employees agreed that sharing knowledge is a vital aspect of having a successful business, however there were several problems regarding the knowledge sharing and knowledge creation. Most of the problems though can be attributed to one major aspect – lack of structure.

Lack of structure was mentioned during the interviews and it became evident from the overall overview of the results that lack of structure is at the basis of the poor communication and knowledge sharing performance between the two departments. The results showed that lack of structure can be seen as composed by the following formal and informal conditions: lack of a leader, lack of organizational culture about knowledge sharing, and lack of organizational memory.

Seeing at things from an overall perspective, one could make the assumption and argument that the lack of structure is the biggest reason as to why knowledge sharing and communication is not functioning as well as it should because the lack of structure has a direct influence on many of the problems mentioned in the analysis.

When talking about lack of structure, it needs to be understood what structure means. Organizational structure can be identified as the basis for organizing, to include hierarchical levels and spans of responsibility, roles and positions, and mechanisms for integration and problem solving (Tran and Tian 230).

In this case, a lack of structure refers to the lack of a leader whose role is to be the primus motor for knowledge sharing and who sets the agenda as to how to engage in the knowledge sharing aspect. The study shows that such leader does not exist, and hence it creates a knowledge sharing structure/culture that is not beneficial for the employees. As there is no assigned post that deals with knowledge sharing and creation, the knowledge sharing and creation that does take place gets lost, and hence is seen as being unstructured.

I would therefore argue that the missing leader or leadership acts as a catalyst for some of the problems that have been found through the analysis.

First, the lack of a leader leads to a knowledge sharing that has a low priority in the department, and a lower motivation amongst the employees to engage in knowledge sharing.

Knowledge sharing is not prioritized enough. The question that comes up is – why is it not prioritized enough? Due to the reason that there is no leader who makes knowledge sharing a priority despite the benefits of it. Knowledge sharing should be prioritized higher as it became evident through the analysis that the benefits are high for the departments, and because it is critical in terms of its success. In relation to theory “*One of the keys of a successful multinational company is the company’s ability to share and transfer knowledge efficiently and effectively through its intra-organization networks*” (Peltokorpi 49). The missing of a knowledge sharing leader, who is supposed to make sure knowledge sharing takes place throughout the departments, is also an important aspects in terms of motivation to share knowledge. As the analysis shows, there was a clear understanding as to why employees should engage in knowledge sharing practices, and the reasons are well in line with what theory suggests: “*Knowledge sharing is critical, as it can contribute to knowledge application, innovation, and ultimately an organization’s competitive advantage*” (Wang et al. 979). The basis for knowledge sharing is present within the employees, however the primus motor or motivator that makes sure knowledge sharing takes place and motivates the employees is not present.

In the thesis, intrinsic and extrinsic motivation was mentioned as to being part of why knowledge sharing is not at its best. With more than 50 years of experience from the professional sports world, Nick Bolletieri – founder of the highly respected Bolletieri Tennis Academy says, “*Regardless if an athlete is motivated internally or externally, there needs to be someone who motivates the athlete to compete*”. There is a similarity to this in the Obesity department. People should be motivated to knowledge sharing, however, the leader who ignites the spark or light, is not present. A good leader is also a good motivator. The leader, who would be present, would make knowledge sharing a priority and motivate employees to knowledge sharing. If the opposite is the case, and there is no mo-

tivation to share knowledge, the valuable information that the employees have, will not be shared, hence it diminishes knowledge sharing.

Second, a silo culture nourishes the lacking knowledge sharing culture amongst the employees.

Organizational culture is widely held to be the major barrier to creating and leveraging knowledge assets (De Long and Fahey 113), and as the analysis shows, the organizational knowledge sharing culture must be improved upon. In the research question it was stated that national cultures would be looked upon in order to see if they have an influence on the knowledge sharing culture, however, as the analysis suggests, national cultures have no major influence on the knowledge sharing process and communication. Despite their perhaps not being a national culture barrier, there is a different cultural barrier that has an effect on the knowledge sharing culture. Organizational culture can be defined as the totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought (Tharp). Recalling what an employee said about the organizational culture in the Obesity department – the culture being very busy and hectic as employees are expected to deliver only the best – knowledge sharing then perhaps becomes less of a priority and therefore not sought enough because time is used on projects. Only the best is expected from the employees in the two departments, and therefore a high specialization in the employees is then required. Having employees that are highly specialized and skilled in their respective fields can perhaps foster the growth of a silo culture. A silo culture or mentality occurs when employees become isolated in their own little part of their academic neighborhood and consequently experience minimal interaction with colleagues (Linton). This type of mentality will reduce efficiency in the overall operation, reduce morale, and may contribute to the demise of a productive company culture. Having a silo culture is not good for the company, as employees become highly devoted employees of either *In Vivo* or *In Vitro*, which will ultimately lead to a lack of strengthening the collaboration between the departments. Referring back to the analysis, employees mentioned that collaboration between the departments could be better, and arguably this could be attributed as an effect of the silo culture.

I would argue that the reason why there is a silo culture is because, as people become highly devoted employees of either *In Vivo* or *In Vitro*, and there is a minimal interaction between the two departments (as it was mentioned by several employees in the study), knowledge then remains in the same departments. As knowledge then remains in the departments, a larger spread and understanding of what each department is working on becomes present. This will eventually lead to the creation of smaller groups in the organization. Creating a knowledge sharing culture then becomes more difficult. Literature and knowledge management gurus are quick to explain that a full-scale knowledge management initiative means not only utilizing ICTs (information and communication technologies), but also changing the organizational culture to one that encourages sharing – rather than hoarding – knowledge (Zorn & Taylor 98).

How can the department then improve upon the knowledge sharing culture? In order to improve the knowledge sharing culture in the Obesity department, previous research has proven that social interaction arguably is a solution as how to improve knowledge sharing. *“Social interaction is also argued to be one of the reasons why employees are or are not engaged in knowledge sharing practices. Developing the trust and cooperation amongst employees can be time consuming, but, however, when socialization mechanisms that develop those aspects are present in the company, they have been found to positively affect knowledge transfer”* (Minbaeva 392). When social interaction is increased amongst the employees, the knowledge sharing will increase. That will eventually also lead to a demise of the silo culture that is present today.

In addition to the missing leader and the lower knowledge sharing culture, the two aspects combined create the basis for the lack of collaboration between the departments. According to some of the employees, what makes knowledge sharing difficult is due to the lack of motivation to strengthen the collaboration and relationship between the departments. The reasons behind the lack of collaboration could well be related to the lack of leadership, as there’s a missing link between the two.

Third, despite there being a concept of Ba, there is no storage of knowledge.

When it comes to the concept of Ba, and the flow of knowledge, there is consensus as to

where the employees can engage in knowledge sharing exchange. The knowledge sharing happens through different type of meetings. As the analysis showed (Knowledge chapter), one could argue that there is a concept of Ba, however, the expected positive outcomes of Ba gets diminished because once information is shared, exchanged and created, and the employees do not need the information shared instantly, the information gets lost, and it is difficult to find it again. In other words, the information that was shared, exchanged and created is not readily available, because it has not been codified. Employees mentioned that finding information can sometimes be difficult, and that is part of the reason why knowledge sharing does not take place. Granted that codification of information might be a costly affair, however, when stored in a database, it becomes readily available for the employees in a fast and convenient manner. The employees mentioned that they like having information in written form as it decreases the chance of misunderstandings and miscommunications. That further serves as a valid argument as to why information and knowledge should be codified.

In this case, it would be the knowledge sharing leaders responsibility to make sure that the knowledge that was created in the Ba, gets codified and stored in the right way. This would solve the problem of employees having issues finding information and knowledge, as it would be readily available from a database.

When looking at the language aspect when it comes to communication in the knowledge sharing process, the analysis suggests that language barriers are not as problematic as one would assume. Granted that there might be some minor issues when it comes to communication with the technicians, but in the overall spectrum of things, communication in different languages has not proved to be a problem. This goes against what is suggested by theory and literature, as it is argued that cross-cultural communication requires being aware of cultural differences because what may be considered perfectly acceptable and natural in one country, can be confusing or even offensive in another. However, as it became evident through the analysis, the employees who are native Danish speakers have a tendency to switch to Danish despite corporate language being English. From a different point of view, one could argue that there is a missing acknowledgement of English being the corporate language; two, employees do not feel comfortable

enough with the English language and therefore try to avoid uncertainty, and third; it is easier to communicate in Danish compared to English.

6.0 Conclusion

The purpose of this thesis is to look at and analyze how communication and knowledge sharing practice takes place in the Obesity department at Novo Nordisk. In order to answer the research question that is presented in the introduction of this thesis, *“How is knowledge shared and communicated, and what effects do national cultures, languages, and motivational aspects have on the knowledge sharing and communication aspect?”* a thorough analysis of the different effects that might have an influence on knowledge sharing practices and communication in the Obesity department has been presented. The analysis suggests that there is a broad consensus amongst the employees regarding their definition of knowledge and knowledge sharing activities. The findings are well in line with what is suggested by literature and theory, and therefore a solid foundation was present. The concept of Ba – a place where knowledge sharing takes place – is present within the Obesity department as it became evident that knowledge sharing takes place in many different setting and ways.

The analysis suggests, that the influence of national cultures is present, but only in a few instances, and those instances however do not have a direct influence on knowledge sharing practices and communication. On the contrary, what does seem to have an influence on the knowledge sharing and communication practices is the organizational silo culture that is present. Furthermore, a cultural difference was also found in the employees' background – whether an employee has a university background or a pharmacology background. The difference lies in the way research is being done, but there does not seem to be any evidence that that has a direct influence on the knowledge sharing and communication practices.

What the analysis does suggest is that there is a lack of structure (leadership in knowledge sharing), which results in a decreased motivation to share knowledge, collaboration and communication within the two departments. The employees of the Obesity department have a thorough understanding of why they should engage in knowledge

sharing, collaboration, and communication practices that all go well in line of what is suggested by literature. However, due to the lack of leadership and a silo culture in the department, knowledge sharing, collaboration and communication is not the best.

As is the case with any work, this study has its limitations that could potentially open avenues for future research. An issue that could have been analyzed more thoroughly was the influence of the national cultures. Due to a relative low number of foreign respondents in the interviews, the data that was provided in terms of quantity was a bit low, and perhaps if there were more data, examples of national differences would have been greater. The answers and data to this study cannot be used to draw conclusions as to how the knowledge sharing and communication practices are within the entirety of the company, as it only gives a view into two departments. It should only serve as guidance as to how to conduct a study of this kind, and modifications to a full-scale study of the organization must be taken.

Another issue that was worth looking into was how the vertical communication takes place, in terms of how much the Obesity department is included in the overall program, and how knowledge sharing and communication practices are in the overall organization. However, this would be a study that perhaps would require more than one researcher, and a longer time reference.

During the work, I realized that other theoretical frameworks could have been applied. In this case, Schein's model of culture could have been used in order to analyze the values and motives in the department, and that could potentially have given a more thorough understanding of the motivational aspect of knowledge sharing. Moreover, Hofstede's model of culture did not serve to be as beneficial as expected, due to the low foreign respondents and the low impact of national cultural differences.

Moreover, Daft and Lengel's theory could have been used in a more effective way, and did in this theory not serve its purpose as well as it could.

The next steps that need to be done for the Obesity department is to create a more structured knowledge sharing and communication platform, and that data gets codified so it can be used for future research. In order to get that done, I would recommend to create

a knowledge-sharing department that handles and takes of the knowledge sharing and communication activities. Since time was mentioned as being one of the problems as to why knowledge sharing activities are not taking place, a third person could serve as the leader in that aspect. By implementing a third person or entity, it would be their responsibility to make sure that data gets codified and stored in the right places. That way it would take the pressure of the already established employees, and a more structured knowledge sharing practice would be established.

In terms of improving the communication process amongst the employees, team building exercises would strengthen the collaboration amongst the employees, as greater understanding and communication would take place. Moreover, in order to improve upon the motivation to engage in strengthening the collaboration between the two departments, social interaction events are recommended as previous research has shown that social mechanisms have positive influence on knowledge sharing practices (Minbaeva 392).

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8.0 Appendices

APPENDIX A – Interview Guide

An Interview guide for interviews in Novo Nordisk

Personal info:

Name:

Age:

Nationality:

Department:

Job function:

How long have you been in Novo Nordisk?

What languages do you speak? Fluency?

What language do you speak on a daily basis?

Knowledge:

What is knowledge?

* 2) Does the use of different languages make it difficult to share and understand knowledge?

* 1) Do you have any common sharing sites where you communicate and share knowledge?

What type of opportunities are there to share knowledge?

Describe how knowledge can be shared between departments?

What kind of knowledge are you sharing in your department?

What drives knowledge sharing?

What happens when valuable knowledge isn't shared?

Is there a need for a third party who understand both culture and language to act as a mediator when it comes to sharing knowledge and understanding what is being transferred?

Motivation:

Do you know what the other department is working on?

Do you know what their competencies are?

Why should you share knowledge with them?

What motivates you to share knowledge?

Culture:

Describe the culture in Novo Nordisk:

Are there any subcultures?

What role does culture play?

Is there a prevalent culture in the firm/department?

Do you adapt to the local culture or do you bring in your own?

Are there examples where culture was an issue when communicating?

Language:

What languages do you speak?

What languages do you use?

* 2) Does the use of different languages make it difficult to share and understand knowledge?

Communication:

What technologies do you use in order to communicate?

Which technologies do you prefer and why?

* 1) Do you have any common sharing sites where you communicate and share knowledge?

How is knowledge communicated?

What's the greatest obstacle in communication in a multinational corporation?

APPENDIX B – Transcripts of interviews

Transcription of interview 1

Personal info

O: Please tell me about yourself. What's your name, how old are you, how long have you worked for in Novo, what is your education, and what languages do you speak?

I: My name is (1), I'm 43 years old, and I work in Obesity Pharmacology (In Vivo). I'm a project leader here at Novo, and I'm doing research in diabetes. I've worked here for 5 ½ years now. I have an education in Biology, a Master's Degree, and a PhD. I speak both Danish and English on a daily basis, so I would say it's 50/50. Meetings are in English though.

O: Excellent, well that was the first part, that was just the easy part. Something to get us started with. Let me go ahead and ask you some questions about the knowledge portion of this interview.

Knowledge

What is knowledge?

I: Hm.. Knowledge is information within diseases, and guidelines on how to do an experiment. In other words, we are dealing with a lot of explicit knowledge. Knowledge for us is also models.

O: How do you share that knowledge?

1: Mostly we share our knowledge in our academic meetings once a week, and once a month in our monthly meetings. Mostly however we share our knowledge in the offices.

O: What type of knowledge are you sharing?

1: We share experience on how projects were made, cutoffs, and inspiration. We have a commitment to share information if it can benefit others. I would never keep anything for myself. Spread the word if it's working. A lot of this usually happens in our status reports.

O: Is it difficult to share?

1: It's very personal. For me it's easy, others might think it's difficult. It depends on if they are extroverts or introverts. The challenge is the time, but sometimes also other projects make it difficult to share. Also, a lot of knowledge sharing isn't structured, you mostly share with your mates in the office.

Motivation

O: Great! Now let me ask you some questions about the motivation to share knowledge. Is there a motivation to share the knowledge you have?

1: As a project leader it's important to share between InVivo and InVitro because we are working on specific projects and we need the expertise from both sides in order to get the right answer.

As a leader it's evident for me because I'll get the best results, that's obvious, but if we look at 2 researchers, I don't think there's the same motivation. Again, it's personal chemistry between pharmacology and invitro people.

O: What makes knowledge sharing difficult?

1: Sometimes it's hard to motivate because there's a lack of communication between InVivo and InVitro, and that's not optimal.

O: Why's that you think?

1: There's no motivation to internally to strengthen the collaboration because we are two different departments. Only if we work as a team on a project, but not daily.

O: Hypothetical question. Is there a lack of knowledge sharing because employees don't know each other that well?

1: In order to collaborate we need to know what the other employees bring to the table. If you know what you, it's easier to collaborate and what you want. There's too much of a SILO culture, and that's why we don't collaborate enough.

O: What do you think can be done about that?

1: I suggest we make shared projects for In Vivo and In Vitro. We are missing that. There's too much either animals or cells. Much more collaboration is needed.

O: How do you know the employees?

1: The reason why I know the others personally is because I'm a project leader. Otherwise I wouldn't know anything about the others.

O: What motivates you to share?

1: It's easy for me.

O: Very interesting. Let me go ahead and talk about the third cluster, culture.

Do national cultures shine through?

1: I don't know. I don't think about it. I'm used to it because I've lived abroad. Maybe the small things, but don't know.

Culture

O: Tell me, what's the general culture like here in the Obesity department?

1: Very busy! But as a project leader, I set the pace. There's an expectation to deliver only the best. No need to rest, but we do however tolerate the difference that may occur, and that can be seen in their pay and bonuses. But always high expectations.

Also, the communication channel from research scientist to management is long. Despite the cryptical messages, I'm surprised not much gets lost, but of course it does happen. There are sometimes hierarchial evidence that some info get shut down due to management thinks it's not important. I mean, I sometimes get things a little easier and faster because I'm a project leader, but that's not always the case. Yes, if you have more stars on your shoulders, you have a better chance of getting a message across.

Language

O: You are using English as corporate language, correct? How does that work?

1: Yes, everything is in English, but we go to Danish very often.

O: How's that?

1: Because Danish is our mother tongue and it's easier. Sometimes when we switch to Danish it actually makes things easier because we eliminate miscommunication by a lot, and we then enhance the quality of the projects and works. If two people talk in their 2nd language, that opens up doors for miscommunication.

O: Are there any problems with people not understanding?

1: Not really, when we do have things in writing, we understand each other more, and when have meetings, we see some new people talk more. If people aren't used to English or haven't lived abroad, they tend to talk less- despite being very competent.

O: How can we then make sure we get their knowledge our?

1: The best you can do is to reinforce the English corporate language. No course will help. In the end it's all about experience. Don't expect me to talk English to other Danes. That won't happen.

Communication

O: How do you communicate?

1: Verbal at meetings, email to make sure we have a reference, telephone...

O: What' easiest?

1: Face to face, but sometimes you need to have things in writing. That way you decrease the chance of misunderstandings and you'll have something to refer back to.

O: Are there any complex issues, and if so, how do you solve them from a communication stand point?

1: Personal I'll go face to face, if not, then phone and mail.

O: Do you use an Intranet?

1: Globeshare yes. It's used to inform employees from Novo. It's very general stuff though. However, it can sometimes be difficult to navigate through and find into it. We also use the ELN = which is really data sharing and primary conclusions.

O: Who keeps the Globeshare?

1: I don't know, maybe the library

O: What's the biggest problem when communicating with the other department and others?

1: National + international is no difference. The biggest challenge in communication are in the cultural challenges, time zones, equipment when communicating internationally. China makes it difficult. There's no hardware that eases the communicative aspect. Of course the communication is different in China due to where they are, because you can't always just go up to them. Culture isn't the biggest problem in this case. Time zones, geography and no face to face.

There are no problems when talking to the other employees. It's easy, I can always schedule a meeting. With management it's more complex because they are so high. Of course, had I had some more stars on my shoulders it would be much easier, but I wouldn't say it's hierarchical. Then I wouldn't need 6 months to get things done haha...

Transcription of interview 2

Personal

My name is (2), I come from India, but I moved to the U.S. at age 7 to Philadelphia. I work in Type 2 diabetes = In Vivo pharmacologist, and I am a scientist who gives feedback on projects seen from the perspective on In Vivo Pharmacology. I worked in Beijing for 3 years in Novo's research, and I'm Denmark my first year. It's easier to acclimatize to the Danish life compared to Chinese going from the U.S. It's easier to learn Chinese than Danish. I speak a southern Indian language called Malayalam, I'm proficient in French, and a bit in Chinese. Plus, I speak English on a daily basis and a little bit of Danish hahah...

Knowledge

O: What is knowledge to you?

2: Learning something new everyday, discovering, for work it's reading literature and design studies.

O: Have you heard of tacit and explicit knowledge and do you work with any of those?

2: Explicit knowledge becomes tacit after you use it. Earlier I used a lot of explicit knowledge, eg. Handling animals, designing formulas, projects and reports. It then became routine and tacit. Intuition. Sensing is also a type of knowledge. For someone new, it might be difficult, but once you learn you don't think about it, you just do it. You know what's wrong and right.

O: Have you ever made it go from tacit to explicit?

2: I've learned it when I had to break bad habits. When I was in china, I had to train a lot of people. So I had to train them according to Novo standards in things that are unfamiliar to them. Be there hands on. And explain why works that way.

O: What are the opportunities to share knowledge?

2: Lots, since I'm in research. Meetings, project teams. I've very essential for a researcher to share knowledge and communicate to different audiences. In our department we have our own processes and audiences. We know when it's right and wrong. However, when you are in a team, you kind of have to dumb it out and explain it so that people who don't have the tacit knowledge that you have will understand it. You have to explain.

Knowledge sharing

O: Are people motivated to share knowledge, or do people hold back?

2: Depends on the circumstances and person. Sometimes it takes long time in Invivo because you want to make sure about the results, and sometimes people find it that you don't share because it takes long. Perception. Your study might take days, and people think that you then don't want to share. Generally people are open. In terms of data, they are good. But they will put preliminary on it so that people are aware.

O: What happens if you don't share?

2: That will hurt the team as a whole and it will make things go back.

O: How can knowledge be shared between the two departments?

2: It's difficult because people are busy. It's all about priorities. What are people working on? That's the primary purpose and focus. Person to person it's ok, but department to department is difficult because sometimes we are involved in different projects. Hard to find the time.

Here things are in silo. People are either dedicated In Vivo or In Vitro, and the reason for that is you are required to have a high amount of specialty for some of the processes.

I come from both background, and I find a lot of In Vitro people don't have the knowledge for why we do things the way we do at In Vivo. There's no vocabulary

Motivation:

O: Do people have problems sharing because they don't understand the others? Is there a lack of understanding amongst people?

2: From person to person I understand a little bit, but within the department I don't know what they do there, and don't understand why things take so long... Process wise we don't know what are their qualities and ways of doing things and capabilities. Knowledge wise we don't understand them sometimes.

O: Do you know what the others are working on?

2: From a personal level I sometimes do because I've worked with them prior. I know what those people are working on. However, it's only on a personal level... The interaction between the departments take time and we are squeezed for time... We have to set it up, have a requirement...

O: Why should you share knowledge?

2: Everybody grows from it! Beneficial for both parts!! Plus, both have to be engaged..

O: What motivates you to share knowledge?

2: You want to tell when you do good 😊 It'll help others. Good effort...

Culture

O: Do national cultures play a role on a daily basis?

2: Yes! You can't stereotype though. Americans are fast paced. Americans take faster decisions compared to Danes, hierarchies are different, and the humor as well. Different energy. Danes speak Danish all the time, and I feel left out of the conversation and isolation sometimes happens. Danes are also more direct, but in a different way. We talk faster hahah

Danes are conservative sometimes, especially when it comes to decision making. They make decision in a stable way, but much slower. U.S. companies are fast paced and sometimes too fast. The risk taking culture is different.

O: Is it difficult to share knowledge when having more languages?

2: With the technicians yes. They are having difficulties. Old are afraid of English. Not the young. It's a hindrance. They are insecure (old) but good at what they do.

Communication

O: What technological remedies are you using when communicating?

2: Email, phone, text, face to face, meetings. I prefer however small meetings. That way people are productive. But not too big.

O: How do you deal with complex communication issues?

2: When it's complex projects I'll use visual aids, and when it's a personal problem I'll go face to face.

O: How do you communicate knowledge?

2: Find the person who can most transmit that knowledge. Get feedback, who's responsible for that area that you are working on.

O: What's the greatest obstacle in communicating intradepartmental?

2: Good communication between people, but not good at department to department. Want to know what the others are working on.

Transcript of interview 3

Personal

O: Please tell me about yourself and describe what you do for work

3: My name is (3), I'm 54 years old, and I'm from Southern Jutland in Denmark. I've worked at Novo for 22 years, and I'm educated veterinarian. Hence me working in In Vitro. I design animal test to test hypothesis. I'm the scientific coordinator between research and development (from animals to people).

Developing drugs is a long process – 10 years at least, and sometimes the process gets lost. I'm the coordinator from Måløv to Smørum, the humanistic aspect. I do some re-

search in obesity. Obesity research is a relatively new area for Novo and we don't have a lot of experience in that.

I speak Danish, English and German, but I never use German. Danish and English is on a daily basis.

Knowledge

O: What is knowledge to you, and what does it mean?

3: Data based, often experience, something that's reproducible – that understood, - it needs to be high quality.

O: When you say reproducible, is it something you write down? Where does it come from?

3: In research, our raw materials are publications, data, and it's a monumental problem that there's only so much of it that's valid. I don't think I exaggerate when I say that 80 % of all publications, even in high ranking journals, we can't reproduce that.

O: What's the reason for that?

3: I think it's because public research which isn't driven by companies is depending on grants. And it's so much easier to get big grants when you have positive data than negative. I just think that. And I'm afraid that that's what's driving research nowadays. But if you found something fantastic, money rolls in. I think people do a lot of research, but they then manipulate the results, and we therefore don't have true and correct research. There's a huge variation of everything. It needs to be valid. If I can't test the samples that are described in a test and reproduce them within the same results, then that knowledge is useless and most likely wrong. That's what I mean by reproducible.

That's the luxury you have by working in a company, there's no pressure on us, there's nothing wrong or right. We don't have to deliver perfect projects all the time that are expensive, but don't work because we've manipulated with the data. That has major consequences. We can deliver correct solutions. On the other hand, we keep a lot of our data secret due to patents etc. We aren't as public as the university.

O: When you've found a cure etc. how do you share that knowledge then? How do you get it out?

3: We keep it a secret for some time due to patents, but we actually have a pleasure in sharing the knowledge with the scientific community, because it's important.

You get challenged on your knowledge. The sparring you can get is something that really pushes you forward. But there's a balance, we can't just go out and announce everything. Everybody knows that we are working on Saxenda, and it's a project that's been going on for years, so we have an interest in sharing that and to get the discussion and partners.

Open innovation will help a lot. However, you can't go full open innovation because you can't protect your ideas. It's the business side of it. For universities, they can't protect themselves. I don't know how to solve it.

For the sake of world community, open innovation is great, and we would get really far. It's business. Who pays for it? By grants.

I've seen it work in nature, a company asks why this and that, and all of a sudden there are thousands of solutions. Then they get 5,000\$ for it, but who actually owns it? Who is going to pay for it, if it's not protected?

O: The more knowledge you share, the more you get?

3: Yes, absolutely! No doubt! We can't always share knowledge externally, but we have to do it internally! You don't want two departments working on the same problem. We have to get better and sharing knowledge with Gita and In Vivo. Because you might sit with the knowledge someone is looking for, because you have the experience, but the other didn't know that because you don't share enough.

O: Do you think you share less because you don't know what the other departments are working on?

3: I don't know, I'm not sure. I think it's a missing understanding and priority what knowledge sharing actually does. It's about priority. Unfortunately I also think it's because of hierarchy. So many researchers and so many leaders and layers. You reach a point where knowledge is power so it's not all that are good at it. Sometimes they forget

it, but many times they keep the knowledge to themselves because it makes them strong mentally. A culture like that is absolutely killing. We are all the same company. We know so much, so it's important we get a good knowledge sharing culture. Drugs are created through teamwork. See a culture where knowledge sharing is good, and not use it as power is something I want to happen here. More focus on it and it'll only make it all better.

O: What type of knowledge are you sharing?

3: I share everything. Data, ideas, stories, everything! That's also for sparring purposes.

Culture

O: National cultures. Are there different national cultures?

3: I feel it in our language. We have two Americans and one Indian in my department.

O: What's the difference?

3: They don't stand out because of national cultures, but because they come from a university setting and they work differently.

In a company it's driven by "we have to get our goal", so we don't have time for anything else. University people think its strange that you don't go into depth with everything. Some things we do.

I've worked a lot with the Chinese. Never been there. Different research culture "lynkinnesere" they are effective and hard working, but the don't have the critical sense. Danes are critically raised. We are skeptical. Chinese aren't. They have a blind faith to what the system says. If you want to be a researcher you have to be curious and ask questions. Danes do it, Chinese not so much. That culture is important.

I like we are multinational. The difference doesn't lie in national cultures, but more if you come from a pharma company or/and a university. Not so much DK/USA/GER/SWE, but China and India yes.

When I worked with the Indians it was different. Had to give data to director who then translated things down. It took time and often the message was lost. All due to hierarchy. The communication channel was long. And came through the wrong way. My colleagues had no chance of knowing what was going on. It was lost.

Communication

O: What technological remedies do you use to communicate?

3: Mail, Novo internet, Globeshare. In the departments, info is on shared drivers. Department drivers. Everybody on my department can see the data that I'm working on, but Gita's department can't see that. And that's a problem, because we work so much better together. However, in Novo documents, it's difficult to find info and knowledge.

O: Is it difficult to find knowledge?

3: Yes, people forget to talk about things. They keep it to themselves. Small closed groups. That's our weak side in Novo. Communication and knowledge sharing in general.

O: How about internally department to department, Gita and you?

3: Gita and I are good. Personal level is great, but department to department is not good. I try to talk to them as soon as I can. Personally, knowledge sharing is bad when it comes from Gita's manager and me. The level above us is bad.

O: How is knowledge communicated between Pharmaco and Biology?

3: Academic meetings, meetings, cross projects.

However, we need to change the knowledge sharing culture. Reward people to share. How do we do it? We need to find a better culture. It's really important that we do it. All departments in Novo. We are constantly evolving.

Transcription of interview 4

Personal

O: Please tell me about yourself, what you are doing in Novo and how long you've been here and your educational background.

4: My name is (4), I'm 38 years and from Sweden. I've worked 6 years for Novo. My educational background – Medical Biology at Linkoping University, PhD in Cell Biology, Post Doc Fellowship in San Diego for 2 years. I wrote my Master's Thesis in Porto, Portugal, so I've seen many things and cultures.

I work in Obesity Biology.

O: What's your job function?

4: Research projects, deliver biological data to projects which is In Vitro data from cell work, and characterization of potential drug candidates. Another part is also pointing out potential drug candidates, which mean I work in a focus group – looking at potential candidates. Testing already existing projects.

I work with cells.

Also project manager on projects that are already accepted by top management.

Research agenda – mode of action studies

Reporting for regulatory purposes.

Knowledge

O: What is knowledge to you?

4: That's a hard question. Mmm... Many different things. From a working perspective knowledge is how to perform. Experience, curiosity.

I should have a broad understanding of the field I'm in, but wouldn't be able to know everything. Having the experience and curiosity to find knowledge, you can find it in literature, go to someone you know in the org – maybe someone senior.

Knowledge is also sharing. If you don't have the answer yourself, then you should be able to find it.

O: How do you share that knowledge?

4: Meeting culture in Novo. We always present the latest data in our projects to our project group. Inform the project manager. Also a scientific vice president. So I present my

knowledge to him, and then gives it to upper management. We can also publish data in scientific literature. Usually when a project is closed and progressed into humans. Maybe the knowledge sharing isn't as direct.

O: So it takes a long time to share knowledge because a lot of research needs to be done prior to publication etc?

4: Yes. We also need the IPR so can make sure we can protect ourselves from the community and invention. Patents will also be published.

O: How do you share the knowledge in between departments? Meetings, face to face, or how?

4: Novo is a big organization and it is important to have good contacts around. A lot of ideas and knowledge sharing happens one to one. I know this person out there, so I'll go talk to him. But in between departments it's a little more... (making a grimace) We've had some official joint meetings with Marcus' department, but it kind of died out.

O: Why did it die out? Lack of interest, motivation, time?

4: The organization changes quite a lot also, so the department manager who I had who initiated this is no longer my department manager, so a lot of communication is then lost because they keep moving around in the organization.

O: Is knowledge sharing important?

4: Yes, it's extremely important!

O: Why?

4: Because without knowledge sharing you won't get anywhere. If you sit on an idea and you can't communicate it or share it, you won't get anywhere because we are highly specialized people in the organization. I want to be able to run the show myself, so I'll have to persuade people to join you or join a group.

You need a common goal, and get a consensus on where you want to move.

Knowledge sharing is everything!

O: Would you say that by sharing knowledge you create more knowledge?

4: Yes, you gain if you give.

If you can engage people they will contribute more. But it also lies in motivating the people to knowledge sharing and give them the feeling that we doing this together.

O: Do you think it happens enough?

4: Within the department we have department meetings and academic meetings every week. So basically, that's where we share knowledge within the department. That's just set. We always have an agenda, but sometimes we just sit and talk into the blue. But if I have something I need to tell I'll do it there. Maybe get input. It's an open atmosphere and speak freely. Show weakness without being judged.

O: Why are people motivated to share knowledge or not motivated to share knowledge?

4: Not sharing is due to political reasons. Sometimes small groups are shared, small informal groups that have more knowledge, and they aren't good at sharing it. That causes frustrations sometimes.

O: Is knowledge then power?

4: Yes, but it also depends on what knowledge it is. Sometimes there are necessities to create those groups because of secrecies and agreements.

O: What type of knowledge are you sharing?

4: Research. Data of projects, progress, fallbacks. The political knowledge that isn't shared is more other stuff. More rumors, personal stuff etc.

O: Why do people engage in knowledge sharing?

4: Because people are researchers, it's the curiosity. The drive from being a researcher.

O: Do people share less because they are schooled to do research?

4: No, the culture is you are always allowed to question the data, present, to scrutinize, and suggest. At the end of the day we are doing drugs, so you want to make sure they are good and safe. There's no meaning in hiding info. It will always come up.

O: So there's a business side to it as well?

4: Yes, always. If we don't do a good enough job ourselves, someone else will do it.

Motivation

O: Do you think people share less because they don't know what the other department is working on or their competencies?

4: Difficult question....

I won't answer your question. I'll answer in another way.

Sometimes there's too much knowledge sharing. Because it can be too much needy greedy and presenting too much. If a hard core chemist presents, they should do it in a way the audience can understand. Sometimes it too hard core.

Sometimes they communicate too much what they will do, and not how. A lot of info I don't need.

Culture

O: Do national cultures play a role when it comes to knowledge sharing? Are they visible?

4: Yes. We are collaborating a lot with China which has been nice culture journey. They are very different from us when it comes to knowledge sharing, and admitting errors. You need to get to know them, then they open up and it's two way. At first, it was just me talking to them. Now it's better. But it took a while.

O: Do you feel different from the Danes?

4: No, Swedes and Danes are similar. The differences are, more consensus mentality in Sweden. Here, you can leave a meeting and everybody disagrees. That wouldn't happen in Sweden because people are not done with meeting until it's all sorted. That's happening in Novo I was shocked that people leave meetings even when it isn't over.

Birthdays are priority in Denmark. In Sweden it's personal hahah

O: But no big national differences?

4: Maybe the boss is more boss here in Denmark. More hierarchical.

Communication

O: What technological remedies are you using to communicate with?

4: Power point, email, Microsoft line (Skype), whispering, face to face.

With the technicians it's face to face. Personal contact is the best.

O: Which one is hardest?

4: I don't know.

Time is hardest. Technologically easy, logistically hard.

O: When communicating complex issues, what do you prefer and why?

4: Face to face is best and easiest. Emails always in English in order to decrease miscommunication and misunderstanding.

When it's dramatic, it's face to face.

O: How about writing?

4: That's good, but when I'm upset I think because it can backfire when having it in writing because you can trace it.

O: Greatest obstacle when communicating with the other department?

4: Time and availability. It's a matrix organization. I work towards projects and stakeholders of the organization. Everybody is moving around. Meeting rooms are a nightmare if you are more than four.

O: Should you then increase the communication by knowing the other?

4: Yes, morning coffee, unofficial though. Info flows there. That also increase knowledge sharing.

Most important decisions are made over coffee or in the canteen.

Communication with Marcus is good, but the others are difficult. Department to department you have to be sharp and crisp.

Transcription of interview 5

Personal

5: My name is (5), I'm 42 years old, and I'm Danish

O: How long have you been in Novo?

5: 15 years

O: What's your job function?

Scientist, project leader, in In Vitro Obesity

O: Tell me more about it please

5: In Vivo are animal tests, and In Vitro is in the lab, cells, biology, tubes etc. I've earlier worked in In Vivo but that's a long time ago

O: What's your academic background?

5: I'm human biologist, chemistry engineer,

O: What languages do you speak?

5: Danish and English, and I use them both on a daily basis, and French and German as a tourist

Knowledge

O: What is knowledge to you? What does it mean to you?

5: Knowing your stuff, your methods, but also knowing what's going on in the projects and have a general knowledge about what is going in the firm, why some projects are more important than others, and why are projects allocated the way they are.

Also, I'd like to know what knowledge is at the strategic level, so I'm interested in that

O: If you had to put words on the word knowledge, what would you say it is?

5: Knowledge is power!! Haha, It's hard to navigate if you don't have the necessary knowledge about what's going on. Especially if there's a similar project taking place right next-door, and they are having the same problems as you are. So you have to share that, and you have the power to do so. Knowledge is powerful!! It's also a massive help, and it's very important that we share the knowledge that we have.

O: Why is it important to share knowledge?

5: Because I think it's stupid that there are projects that are making the same mistakes, or if someone says, I've worked on that, you can just get my data etc. Knowledge sharing is also working together on the same project and goals

O: What opportunities do you have to share knowledge internally between In Vivo and In Vitro?

5: That's in the projects. There you have all the opportunities. But also as a project leader you have a better chance to share knowledge. You get more info as leader, and it's important you use that

O: How about on a daily basis between In Vivo and In Vitro?

5: Projects on a daily basis. I think I have close collaboration with the other department on a daily basis. We share knowledge through our projects.

O: How can you share the knowledge you have? Of course, through projects etc, but what else? Meetings?

5: Mostly meetings and one to one or through the lunch breaks. Knowledge sharing is also being able to invite the right people and who you think might find it relevant. In-

volve people, but only there where I am the project leader. Otherwise it's hard, and if I'm not the project leader, I sure hope the project leader gives me an opportunity to share knowledge.

But you also have to be honest, you have to be able to communicate with the right people. How open are you about the problems you have..

O: What type of knowledge do you share when you work on projects between In Vivo and In Vitro?

5: Mostly academic knowledge. And also small talk.

O: What is academic knowledge?

5: That could be when asking about previous projects and what the results were, or where can I find data etc.

O: So you have to be active yourself in order to find new knowledge out here?

5: Yes you have to. If you are lucky you can maybe find something in our ELN database, but it's not always you will find it there.

We have problems with knowledge sharing. In Vivo are not so good at publishing their work and uploading their work. They all have their own data, and that's really annoying.

O: Is it difficult to find knowledge?

5: Yes it is, you need to know your alliances and you need to know your people. It's not difficult to form alliances, but you can find info on your own. It's doo difficult.

O: So you are saying it would make your job easier as well if In Vivo uploaded their work?

5: Yes it would. Especially as a project leader if you are looking for something. You are constantly dependent on someone else to provide you with knowledge and info. It's quiet annoying actually.

O: What happens if you don't share knowledge, and what complications arise from it?

5: You make bad projects, and it's shit! Worse projects for sure. That's what we do. That's what we do here, we don't have products in our department, we only have knowledge. We sell our knowledge to our stakeholders, so if we don't share it, we are screwed.

O: What drives knowledge sharing? What makes people share knowledge?

5: You can't do anything on your own, you are dependent on someone else. Things go by much faster when you share knowledge. That's the advantage by being in place that's as big as this. There's a lot of knowledge, but it's also a disadvantage because you don't know where to find it.

You can really make some massive quantitative jumps by asking the right people. It's almost a copy paste

O: So it's beneficial for both parties involved?

5: It's massively important!!

O: And by sharing you gain more knowledge?

5: Absolutely!

Motivation

O: Do you think people are having issues sharing knowledge because you don't know what the other department is working on?

5: I think In Vivo is having bigger issues understanding what In Vitro is working on rather than the other way around. Maybe I'm biased because I myself have an In Vivo background, but I think In Vitro is more nerdy stuff, and In Vivo is more I give an animal a drug and I see what happens next. It's more intuitive.

But yes, I think sometimes In Vivo doesn't understand the issues we are working on. You don't want to overanalyze things.

O: So understanding what the other department is working on would make things easier?

5: Oh definitely! Overall we know, what they are working on, but more details would be good. On a personal level we know a bit more, but not departmental no.

O: Why do you think that is?

5: Because they probably think it's not important for them to share. Not because they don't want to, but because it's not important to them.

O: Can it be too much?

5: Yes. You have to have faith in the other department and understand that they are doing a good job.

O: Why do you have to share knowledge between In Vivo and In Vitro?

5: Because they go hand in hand. Ideally, In Vivo should be able to confirm what In Vitro is working on. And when that doesn't happen, In Vivo should be able to go back to In Vitro and tell them exactly what went wrong and so. It all goes hand in hand.

O: So there should be an incentive to share knowledge?

5: Without a doubt!

O: But because it doesn't happen is due to personal reasons?

5: Maybe sometimes yes, but I think we share what we think is important. But that also what makes it difficult, because we have our own perception of what is important.

O: Personally, what motivates you?

5: I'm a team player. I know what I'm good at, I know my shit, and I'm not afraid to get challenged. I feel best when I share. In the end, it all comes back and you create more knowledge. I'm more concerned about the projects, and not the personal reasons. If you don't share, it almost feels like you are trying to make yourself look better. In my eyes, you should get punished for not sharing, because you are holding back important knowledge and info. But also for the sake of the company. It'll be better if we shared more.

Culture

O: Are national cultures visible in the daily life? When someone is from another country?

5: When you go to China yes, but not here in Måløv. When they first arrive, maybe a little, but not much. It's not something that you pay attention to, and it's not going to affect you. Event though you might say that Swedes and Danes are the same, they really aren't because there are small things that differentiate themselves, but it doesn't have an effect on things.

O: Do you think that having a different nationality has an effect on knowledge sharing?

5: That could be the case yes. Well, honestly, I don't know if it is your nationality that makes the difference, but where you have been and visited, what company you've worked in previously and so, that might have an influence yes. I think more it's that. The academic nationality is a big difference here.

O: Whether you come from a university or a pharmaco company has an influence?

5: Yes, that is a huge difference!! That really shines through. It's a different mindset when you come from the university setting.

O: What's the biggest difference?

5: Here (Novo) you work towards a product creation, but at a university you work on small detail that could be academically interesting. And that's nice if you work at a university, but that's not what you should spend your time on here in Novo. When working here, you have to make sure you keep in mind that we are working with drugs that potentially cure illnesses and they can be a massive business, so you need to have that in the back of your mind when you work. At university level, you don't have to think about that kind of process, because you don't focus on those things.

And that's a huge difference!

And sometimes when people from academia, people need to learn that and that may take a lot of time, and that can sometimes be frustrating because they are so used to doing things another way.

O: Are there any projects where national cultures did play a role?

5: Yes, but that's with the Chinese people only. They live so far away, and they just have a different background and way of thinking and doing things. They promise a lot of good things, and then when we duplicate their tests and results, things not always add up. It's not because they lie, but because it's a cultural difference. In our eyes, it's just not good enough. I'm not saying they aren't a good enough job, they do a lot of great things, and some things they do better than us, but it's not always the case. I think they see themselves as being the little brother and that they have to show their best to the mother company. And parts of it is also in the communication process in how they communicate and how we communicate with them. As a Dane we are more direct, but you can't do and say that to a Chinese person. You might hurt them more then here.

O: So it's more between china and Denmark, and not between In Vivo and In Vitro then?

5: Exactly yes.

Communication

O: When you are communicating, what technologies do you use?

5: Power point haha and written reports. That's not always so cool. Phone, email, F2F, text etc. Very simple stuff.

O: And when communicating to In Vivo and In Vitro?

5: It's nice to have things in writing, but it's not always that I'm good at that. The problem is that people are always somewhere else working on stuff which makes communication sometimes difficult. If you get up and walk over, it's not always they are there. When it something that takes a little longer, I make sure I call them and set up a meeting with them. If it's just small stuff, I write an email and then I'll let them take care of it.

O: What about time?

5: Time makes it difficult. There's not enough time sometimes.

O: What can you do to make communication better?

5: I wouldn't say communication is bad, it's just that email sometimes is the easiest thing. In order to improve communication, it would be great actually, but time is all we need really. Time is the problem here..

O: Is it because time isn't structured enough or why?

5: We are doing three things at one in our department, so it really shows how quickly we run, and what we then cut of is the politeness. Not much sweet talk, we go hard on hard. That could potentially be a problem for communication if you don't have time to even say good morning

O: Do you also share knowledge over coffee and lunch?

5: Yes that happens as well yes..

O: You said that the Chinese people communicate in a different way, can you tell me more about that?

5: A little more top down, it's challenging sometimes. As a woman is challenging to get the respect from a 50 year old man if you aren't a professor in your field. Danish women aren't used to that. I've found out that I have to communicate through the university because that way I'll get the message across easier and faster. It's much more hierarchical there.

In Denmark there's a hierarchy, but it's not as evident as in china fx. You can always talk to your boss here, but not in china. It's easier here, and it's more appreciated here. In Denmark it's a signal that shows that you actually care and you look critically at things. In Denmark, you don't take it personally, but in china you might do. I know it's hard to say that way, and I know that I'm generalizing, but that is sometimes the case. The Americans are a little more like us Danes, but also more hierarchical though..

How do you communicate knowledge in In Vivo and In Vitro?

5: Meetings mostly, rappsorts, presentations, a few meetings with Markus' department,

O: Can you do that better?

5: Yes, it can be better. On a personal level communication and knowledge sharing is alright, but on a departmental level it's hard. That's sometimes nonexistent, and that makes things difficult. That could definitely be better. In the projects, it's also good though..

O: Why is that? Why's the communication and knowledge sharing between vivo vitro so bad?

5: It's just time.

O: Biggest challenge in communication and knowledge sharing between In Vivo and In Vitro?

5: More experienced people in pharma than In Vitro so there's more academia spread in that department. Maybe too academic, but that's ok. We try to get the best out of it, even though there are some people that are hard to communicate with.

Transcription of interview 6

Personal

O: Please tell me about yourself, how old you are, where you are from, and what you do for a living

6: My name is (6), I'm 49 years old, and I've been at Novo for 20 years. The first 3-4 years I was in Seattle where I was employed, and not until after then did I start working here in Denmark. I've been in research for 20 years.

I sit in Obesity Biology, In Vitro.

O: What's your educational background?

6: I'm a pharmacologist.

O: What made you go that way?

6: Well, I've heard you play tennis, so you are an athlete. Myself, I played a lot of basketball, so after high school I realized I had to do something else. So I started studying to

become a pharmacologist whilst playing basketball. And that really grew the interest for biology and chemistry. And that's how I started in the business. It kind of just happened. But basically I'm schooled from Novo. That's where I've had most of my education.

O: Where are you from?

6: Denmark, and I use Danish and English languages on a daily basis. I'm conversational in French and German.

Knowledge

O: What does knowledge mean to you and what is it?

6: There's a basic knowledge base that you need in order to work here in the Obesity department. That is in terms of terminology, and understanding of what it going on.

Knowledge is something that is challengeable. Knowledge is dynamic. The things we do are not written in stone. We play with things. Knowledge is also strength and power.

O: What do you mean that knowledge is power?

6: I think data and information should be the winner in the end, and not political decisions. I don't like when the political aspect has too big of a role, and I think science and outcome of the projects should eventually stand alone and be considered something to itself.

Knowledge for me is also the understanding of biological aspects of drugs. Knowledge is not reports and projects. Knowledge is also the synergy and combination of two different units working together on a common projects. In the end, the outcome of the projects is what is knowledge to me. It's also coincidences that are being used the right way. Understanding of where you are.

O: What possibilities do you have to share knowledge between In Vivo and In Vitro?

6: We have knowledge sharing between In Vivo and In Vitro through cross projects. When we take a few biologist and pharmacologists and they work together on very specific projects. However, when it comes to department to department, the knowledge sharing isn't as good as I wish it was. Sometimes we do a lot of double work, and we there-

fore spend too much time running around doing things we shouldn't be doing. However, it needs to be said that when we do share knowledge on the same things, it's good, but it isn't good when working on different projects. I'd like to see more synergy between the two departments. Department to department it's not too good. We need to know what the overall goal and purpose is of a project. More consistencies.

O: What type of knowledge are you sharing between In Vivo and In Vitro?

6: That's data. A lot of data. If you don't understand data it's bad though. But it's also literature knowledge and something that we think is worth discussing and talking about. Experiences as well – for sure.

O: What happens if you don't share knowledge between In Vivo and In Vitro?

6: Then I can't see how we would move forward. I can't see how that shouldn't happen. It would be so bad for us. It would be disastrous for us. It's actually nice when work that has been done previously is to be found, because there's always a name on who made that work, and you can then go ask that person what the reason behind everything was. But that is sometimes difficult because we don't always share and upload fast. I'm in department, we like to have a mode of action compared to In Vivo. If you don't share, you'll decrease the understanding of the other employees.

Motivation

O: What motivates you personally to share knowledge between In Vivo and In Vitro?

6: That's because I want to get better at what I do by sharing what I know. I want to see critically on things and I want to get challenged by others. Others maybe just want to confirm that what they are doing is right. But I also do it because I want to improve upon the knowledge that we have and make our knowledge base larger and better and take it to another level. The biggest motivation for me is get a better understanding of what is being done.

What is important to notice though, what constitutes knowledge? You don't want to share everything all the time, but you have to figure out what is the best knowledge to share for you. I'd like to share, but sometimes I'm afraid to share because it can be taken the

wrong way. But also to because you can think outside the box when you share knowledge.

Innovation gets killed if you don't share. It's so important. If you can't share and is not allowed to share, then I'd rather go work in bakery, because that would make me happy. We have to think outside the box. Sharing the knowledge we have will help us get better and grow stronger, and we can go deeper into things.

Some things are confidential though, and that's alright. Sometimes there are also knowledge parts that don't see the light of the day. And that's sad, because a colleague might have the solution to a problem that I have. I want to move the boundaries on the biology that I know. We need to go into data therapy- finding data that will help us do better and make us do the things right. Sharing my data is also fun for the In Vivo employees. Maybe they can use it to something.

O: Do you know exactly what In Vivo and In Vitro are working on? Do you have a complete understanding of what's going on?

6: Yes, absolutely. No doubt. However, when the doubts come it's because we aren't sure about the biology of the animal when we are testing it. But in the end, it's all about collaboration. As long as we collaborate and talk things through, then there shouldn't be any problems. We just need to talk things through more.

Culture

O: Are national cultures evident in the daily lives between In Vivo and In Vitro?

6: I sit in front of a Swede, and I don't understand half of what he says.... Hahahha, no, it's a joke. I don't think there are any problems with national cultures. The difference is sometimes about being open and honest. The Americans are little more straightforward. The Chinese are a little different, because they are very true to authority.

People listen more to Americans I think. They are a little more here I come, I'm American and I can talk and sell anything. The Swedes are also different in that way. They are less authoritative than Americans and Danes.

American scientists only have one thing in their minds. That's their projects, and that's it. But not so much over here, that's more the case in the U.S. You can tell that Marcus is German because he has the Ordnung muss sein, but he's easy to work with.

Communication

O: What remedies are you using technologically wise when sharing knowledge between In Vivo and In Vitro?

6: Mail, meetings, biology meetings (academic meetings) – it's only about biology those meetings. Reports, milestone documents, hallway talk,

O: Which one of the remedies do you prefer?

6: That depends on the meetings. Every remedy has its own charm. It's hard to say really.

O: What is the biggest communicative problem between In Vivo and In Vitro?

6: That's time. Sometimes the new structure that has taken place by upper management. All in all we want to do drugs, and that's the important thing here.