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# Knowledge sharing in a European sales company

Master's thesis in Management of Demanding Marine Operations  
Supervisor: Marte Fanneløb Giskeødegård  
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# Abstract

DESMI is a global company which manufactures and sells pumps and pumping solutions worldwide through its global network. Through a SWOT analysis in the internal DESMI strategy, it was seen that DESMI had a lot of knowledge, but did not share it across countries, thus creating the thesis question "How can DESMI facilitate for knowledge sharing across countries?".

The theoretical assumption used in this thesis was Nonaka's work on knowledge management, and some supporting theories from the epistemology of practice view on knowledge from Ribeiro and Orlikowski. From Nonaka's work, the concept of ba was chosen to operationalize the thesis question into four research questions, while Orlikowski's work the organizational knowing practices was chosen to operationalize the thesis question into one research question. These research questions were: 1) How does DESMI facilitate for colleagues getting to know each other? 2) Does DESMI create an arena for dialogue and does DESMI document this experience? 3) How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way? 4) Is DESMI encouraging employees to utilize its collective company knowledge? 5) Are the practices of organizational knowing facilitated and repeatedly enacted in DESMI?

The method used in this thesis was a qualitative approach where six employees from DESMI were interviewed. These employees were either sitting in Marine & Offshore sales (sales persons) in Europe or related support function to M&O sales in Europe.

The empirical data found during the interviews was presented under each of the concepts of ba from Nonaka's theories. Empirical data for organizational knowing practices were not gathered specifically but were part of the empirical data from the various ba.

The main conclusion of this research showed that DESMI did not facilitate much for knowledge sharing across countries. The main challenges were that international employees did not meet physically on a regular basis, there exists no official arena for dialogue in DESMI, and documenting/formalizing is not common, the main knowledge sharing tool was somewhat difficult to use and contained old information, DESMI was not good at distributing knowledge, mentoring was not done for senior/established employees and the organizational knowing practices were only followed to some extent and not necessarily repeatedly enacted.

Many of these challenges do however have some easy solutions, so DESMI is in a good position to improve much of its knowledge sharing.

# Sammendrag

DESMI er et globalt selskap som produserer og selger pumper og pumpeløsninger over hele verden gjennom sitt globale nettverk. Fra en SWOT-analyse i den interne DESMI-strategien ble det funnet at DESMI hadde mye kunnskap, men delte det ikke på tvers av land. Dette dannet derfor problemstillingen "Hvordan kan DESMI legge til rette for kunnskapsdeling på tvers av land?".

Den teoretiske antagelsen som ble brukt i denne oppgaven var Nonakas arbeid med knowledge management, samt noen støtteteorier rundt epistemologien om praksis' syn på kunnskap fra Ribeiro og Orlikowski. Konseptet om ba fra Nonakas arbeid ble valgt ut for å operasjonalisere problemstillingen til fire forskningsspørsmål, mens organizational knowing-praksiser ble valgt fra Orlikowskis arbeid for å operasjonalisere problemstillingen til ett forskningsspørsmål. Forskningsspørsmålene var: 1) Hvordan tilrettelegger DESMI for at kolleger skal bli kjent? 2) Skaper DESMI en arena for dialog og dokumenterer DESMI denne erfaringen? 3) Hvordan systematiserer DESMI sin eksplisitte kunnskap? Og distribuerer DESMI denne på en god måte? 4) Oppfordrer DESMI sine ansatte til å bruke den kollektive kunnskapen bedriften besitter? 5) Blir organizational knowing-praksisene tilrettelagt og gjentatt jevnlig i DESMI?

Metoden som ble brukt i denne oppgaven var en kvalitativ tilnærming hvor seks ansatte fra DESMI ble intervjuet. Disse ansatte satt enten i Marine & Offshore-salg (selgere) i Europa eller støttefunksjoner relatert til M&O-salg i Europa.

De empiriske dataene som ble funnet under intervjuene ble presentert under hvert av konseptene om ba fra Nonakas teorier. Empiriske data for organizational knowing-praksisene ble ikke samlet spesifikt, men var en del av de empiriske dataene fra de forskjellige ba.

Hovedkonklusjonen i denne undersøkelsen viste at DESMI ikke tilrettelagte så mye for kunnskapsdeling på tvers av land. Hovedutfordringene var at internasjonale ansatte ikke møttes regelmessig, det eksisterer ingen offisiell arena for dialog i DESMI, og dokumentering/formalisering er ikke vanlig, kunnskapsdelingsverktøyet som ble mest brukt var noe vanskelig å bruke og inneholdt gammel informasjon, DESMI var ikke flinke til å distribuere kunnskap, veiledning ble ikke gjort for senior/etablerte ansatte, og organizational knowing-praksisene ble bare fulgt til en viss grad og ikke nødvendigvis gjentatt jevnlig.

Mange av disse utfordringene har imidlertid noen enkle løsninger, så DESMI er i stand til å forbedre mye av sin kunnskapsdeling.

# Foreword

When I first started this master's program back in 2016, I had recently lost my job and was more or less broke due to this. As relevant jobs were scarce, the days became long and boring with nothing to do. To turn it around, I figured that I would study instead. Even though I was a little reluctant to go back to school, I came to look forward to the gatherings in Ålesund as these would be highlights in the years to come.

Now, five years later I have managed to find a job, is no longer broke and things have certainly turned out for the better. However, there was one thing which was constantly on my mind. I finished all courses back in 2018, but never got around to start writing a master thesis, as I started working for DESMI as well in 2018. I finally figured I would write my thesis, although postponed some more due to a certain pandemic. But now, I can say that I have actually delivered my master thesis and what a feeling that is! All the experiences I have had and all that I have learned has been exiting. I went from being an engineer who only looks at the cold hard facts, to have a more widened view of things, especially the human aspect. Previously, I had no interest in the "soft" sciences, now I find them intriguing.

A number of people deserve a recognition and thanks from me. The biggest thanks go to Thea, my soon-to-be wife (in October!). How she has kept up with me through all of this is astonishing. A big thank you is also due to Marte Fanneløb Giskeødegård, my tutor at NTNU Ålesund. Thank you for believing that I would actually be able to finish this thesis and guiding me along the way.

A number of people in DESMI should also receive my sincere thanks. First, a thank you to Henrik Mørkholt Sørensen who was very welcoming at the beginning of the thesis where we had some productive talks. Secondly, a thank you to Karina Poulsen who was my official point of contact in DESMI and supported me in getting "the ball rolling". Thirdly, a thank you to Ove Mårtensson who is my boss and showed sympathy with me and did not protest whenever I figured I would work on the thesis during working hours.

A big thank you should also be directed to my colleagues who I interviewed. Without you, this thesis would never happen! Should our paths cross in the future, just know that I owe you one.

Marius Berg Rygvold

Tønsberg, June 2021

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# Abbreviations

DPTA	DESMI Pumping Technology A/S (Aalborg)
M&O	Marine & Offshore
SECI	Socialization, Externalization, Combination, and Internalization
SWOT	Strength, weakness, opportunity, threat

# 1 Introduction

## 1.1 Knowledge and strategy

It is a known fact that society today is rapidly changing – markets, products, technology, competitors, laws etc. are all developing at a faster pace than before. Due to this, an increase in a company's ability to adapt and create innovation and knowledge is a key competitive advantage (von Krogh et al., 2001). Drucker (1993, quoted by Nonaka and Takeuchi, 1995) even went so far as to say that knowledge is not just a regular resource which can be seen together with e.g., labor, product, and land, but rather that knowledge is the only meaningful resource today.

Knowledge can be utilized as a strategic framework for companies who wish to gain a competitive advantage. However, it is then important that the companies utilize practical tools to help them consider what role knowledge has in relation to the strategy. What is common though is that strategies are formed with a goal that knowledge should be used to generate profit for the company, but the execution of the strategies are often only single attempts which are very narrow in size. Therefore, general strategies with a broader approach are not very common. One of the reasons for this is that knowledge is often looked at as an unknown quantity which is near impossible to measure. By instead looking at knowledge as a capital related to specific actions and (corporate) results, it can become more measurable (von Krogh et al., 2001).

But how can knowledge be such a meaningful resource and still be somewhat of a periphery in corporate strategies? It is with this backdrop this master thesis will explore knowledge through a global company called DESMI.

## 1.2 DESMI

DESMI is one of Denmark's oldest companies and was founded in 1834 in Aalborg, Denmark originally as an iron foundry. Since its creation, DESMI has evolved into a global sales company which manufactures and sells pumps and pumping solutions across the segments marine, industry, defence & fuel, and utility markets, in addition to environmental equipment used for oil spill, seaweed and cleaning up waterways. The global headquarter is in Nørresundby, Denmark, and as of 2021, DESMI employs +900 people worldwide and is represented in 28 locations across 18 countries (DESMI A/S, 2021).

In DESMI, as in a lot of companies, it is developed a corporate strategy which aim is to set a course for the coming year(s). In DESMI, the strategy is developed by the the headquarter in Denmark and is called DESMI NL<sup>2</sup> Strategy (2020-2023), which is short for DESMI Next Level 2. In addition to describing e.g., aims and goals, the NL<sup>2</sup> strategy lists some strength-weakness-opportunity-threat (SWOT) analyzes. These SWOT's are in short risk/opportunities for DESMI as a company under different segments and departments (DESMI A/S, 2020). More specifically for this thesis is what is stated under Sales Marine & Offshore SWOT, presented in figure 1 below.

### 5. SWOT

Consolidated general SWOT and Sales

Strengths	Weaknesses
<p>Internationally recognized brand, present in 20 countries + supplementary distribution network</p> <p>Web site and position in Social Medias</p> <p>Employees have strong application and product knowledge</p> <p>Innovative market approach</p> <p>Global approach to the sales process</p>	<p>Weak execution of strategy</p> <p>Weak sales process</p> <p>Untapped cross-country learning</p> <p>Unstructured product management</p> <p>Not the optimal supply chain for EMEA, AMERICAS markets in terms of lead times</p>
Opportunities	Threats
<p>More sales to existing markets</p> <p>Price differentiation</p> <p>Product and concept development</p> <p>Use of data for KPI and pursue of opportunities</p>	<p>Increased price competition</p> <p>Decreasing customer loyalty</p> <p>Relatively low market growth in the core markets</p> <p>Government supported activities for increased localization and national supply chain</p>

**Figure 1: SWOT for DESMI Sales, Marine & Offshore (DESMI A/S, 2020).**

Under "Strengths" the strategy points out that the workforce has "knowledge". However, under "Opportunities" is states that there is not any "cross-country learning". The strategy itself has therefore found a gap which could be shortly described as "DESMI knows much but are not sharing it internally across countries". With reference to the introduction in chapter 1, this this gap is what this thesis will explore and try to close, or at least shrink, with the following thesis question: "How can DESMI facilitate for knowledge sharing across countries?".

## 1.3 Structure of the thesis

This thesis is divided into 6 chapters. The first chapter is the introduction chapter which introduces the background for the thesis, a short presentation of DESMI as a company and lastly the limitations of the thesis. In the second chapter, the theory which will be used in the thesis will be presented. These theories are mainly based on Ikujiro Nonaka's work on knowledge management, while studies conducted by Rodrigo Ribeiro and Wanda Orlikowski are support theories. The various aspects of the different theories are further broken down into sub-chapters to make it easier to keep an overview. A comparison of some of main theories are also present in the second chapter.

In the third chapter, the method of this thesis is presented and is split into three sub-chapters: thesis question, research question and research design. The first two sub-chapters will present the why the thesis question was chosen and further how the thesis question is operationalized to research questions. The last sub-chapter will present the research designs chosen for the empirical study and a justification of this.

The fourth chapter will present the results from the empirical study, while the fifth chapter discusses the findings of the empirical studies and connecting them to both theory and research questions. The sixth and last chapter will present the conclusions of this thesis.

## 1.4 Clarifications and limitations

### 1.4.1 Clarifications

For the purpose of this thesis, a short presentation of the global setup of DESMI will be presented. DESMI is mainly split up into five different sales segments: Marine & Offshore (M&O), Industry, Defence & Fuel, Utility and EnviRo-Clean (oil spill etc.). These segments are represented all over the world through the various DESMI subsidiaries/sales offices, headed by the corporate headquarters in Denmark. In addition, DESMI also has mainly three distribution centers around the world. These distribution centers are located in Europe (Denmark), Asia (China) and the Americas (USA).

In DESMI, there are corporate support functions which are created to aid the subsidiaries in their day-to-day work. Some of the functions are located in the distribution centers (the "hubs"), while others are spread out across the global organization. One of the support functions which will be mentioned in this thesis is the sales support department. This department has an intuitive name, and the purpose of it is exactly as the name states – to support sales. This department is considered a corporate function, however

the employees working in the department are sitting all over the world in various subsidiaries and not just the hubs.

It is also important to mention the difference between the “corporate Denmark” and Denmark as a sales company in DESMI in order to avoid any confusion on the subject. The corporate function, the DESMI headquarters, is called DESMI Pumping Technology A/S. The corporate function is often abbreviated as DPTA, where the “A” stands for Aalborg. In DPTA, corporate management is found, in addition to corporate support functions. Denmark as a sales company on the other hand is a subsidiary to DPTA and is called DESMI Danmark A/S. In DESMI Danmark A/S, salespersons and some support function to these are found. DPTA and DESMI Denmark are therefore two separate entities, even though they share the same address.

#### 1.4.2 Limitations

To limit the extent of the thesis there are some limitations. These are presented below.

1. DESMI as a global company will not be looked into, only the European part will be examined. Further justification on this limitation is found in the chapter 3 - method.
2. Only the Marine & Offshore segment within the European region is examined. Further justification on this limitation is found in the chapter 3 – method.
3. DESMI Norway will be excluded as the researcher is working for DESMI Norway and research there could lead to conflict of interest and/or biases.
4. Culture, in its various definitions and forms, can be seen an important part of “across countries” from the thesis question. However, culture specifically will not be looked into as organizational knowing will be the main focus for looking into “across countries”.

## 2 Theory

In this chapter, various theories regarding knowledge will be explored. This thesis will rely mostly on the work Ikujiro Nonaka has done in the field of knowledge management. In addition, studies by Rodrigo Ribeiro and Wanda Orlikowski are supplemental theories to the subject on knowing. The work of the above authors is related to knowledge within organizations and are therefore relevant to the question "*How can DESMI facilitate for knowledge sharing across countries?*".

### 2.1 Data, information and knowledge

The difference between data, information and knowledge varies from researcher to researcher. Stenmark (2002) gathered and compared various definitions on this subject. In this article, it is argued that data, information, and knowledge are similar and are influencing each other. Often, information and knowledge are used interchangeably due to this. As an example, Kogut and Zander's (1992, quoted by Stenmark 2002) definition of information is "*knowledge which can be transmitted without loss of integrity*". This definition implies that information is a form of knowledge. However, information and knowledge are not the same and should be separately defined.

In a hierarchical form, data can be understood as raw numbers and facts, information is processed data and knowledge is authenticated information (Alavi and Leidner, 2001). This hierarchical view however does not include dimensions such as e.g., context and interpretability. For individuals to arrive at the same understanding of data or information, they must share a certain knowledge base. As such, knowledge is a personalized cognitive process triggered by the inflow of new stimuli (Stenmark, 2002, Alavi and Leidner, 2001). Stenmark (2002) further argues that data and information is two opposite ends of a continuum. If e.g., a text is not sufficient in fully explaining the knowledge it describes, an individual must use its own knowledge base to interpret/comprehend it. Depending on how decontextualized the reader is from the text, the text would be either information or data. In other words, if the readers knowledge base is too distant from the knowledge base required to interpret it, it is data. If the knowledge base is sufficient for interpretation, it is information. Therefore, what can be viewed as data and what can be viewed as information will depend on the individual (Stenmark, 2002). Stenmarks view on data and information will be used in this thesis.

Knowledge itself will be covered in the next chapter. However, what is common when researchers look to define knowledge is that it is something personal in an individual's

mind. Examples of definitions are "*Truths and beliefs, perspectives, situation or condition and concepts, judgements and expectations, methodologies and know-how* (Wiig 1993, quoted by Stenmark 2002), "*The ability to assign meaning*" (Spek and Spijkervet 1997, quoted by Stenmark 2002) and "*Experiences, values, insights, and contextual information.*" (Davenport and Prusak 1998, quoted by Stenmark 2002).

## 2.2 Definition of knowledge

Plato and Kant were the first to define knowledge as something that has three individually necessary and jointly sufficient component: justification, truth, and belief. Or in other words, knowledge is justified true belief (Audi, 1995).

Nonaka's definition of knowledge comprises three statements: 1. Knowledge is dynamic, 2. Knowledge is context-specific and 3. Knowledge is humanistic. Combined, these statements form the definition "*Knowledge is a dynamic human process of justifying personal belief towards the 'truth'*" (Nonaka et al., 2000). This view on knowledge suggests that knowledge is created by individuals.

Another view on knowledge is that "knowledge" should be replaced by the term "knowing" instead. The term "knowing" entails that knowledge is in action. Knowledge, or knowing, is a property of a social group and creates a form of life where the knowledge is socially agreed, modified, and transmitted. This creates an immersion with limitation/borders on what is "in" and what is "out". With these limitations/borders, there are created rules which determines what is knowledge. Doing things "the same way" or "properly" is a result of a social agreement and as such it is knowing (Ribeiro, 2013). This view on knowledge suggests that actions in a social context is knowledge.

These two understandings of knowledge are called the epistemology of possession (knowledge is possessed by individuals), and the epistemology of practice (knowledge is the focus on knowing as in action) (Ribeiro, 2013).

Even though Nonaka and Ribeiro have a different view on the definition of knowledge, they both further separates knowledge into two types – explicit and tacit knowledge.

### 2.2.1 Explicit and tacit knowledge

Explicit knowledge is the type of knowledge which is "know-what". This means it is the type of knowledge that is easily coded, transferred, and shared. Examples of explicit knowledge is written text, mathematical equations, catalogues, video etc. This knowledge can be captured and shared with others easily and is also easy to store in databases for analysis (Nonaka and Takeuchi, 1995, Mohajan, 2016).



Tacit knowledge on the other hand is a knowledge which is “know-how” and was first coined by Michael Polanyi in the 1960s. According to Nonaka (2000) tacit knowledge is the type of knowledge which is hard to describe as it is highly personal and difficult to formalize or communicate to others. This is because it is made up of mental models, values, beliefs, perceptions, experience, insights, and assumptions or in other words – it is a comprehensive cognizance of the human mind and body (Nonaka et al., 2000, Mohajan, 2016).

Where explicit knowledge is shared via e.g. a book, the tacit knowledge is shared by observation, communication or coordination with others. As an example, learning how to ride a bike is tacit knowledge. Just how to find the balance on the bike is difficult to explain and it needs to be experienced before one can ride it.

### **2.2.1.1 Three categories of tacit knowledge**

Another view on tacit knowledge is presented by Ribeiro. Ribeiro (2013) saw that a conceptual framework for managing tacit knowledge was needed and therefore splits it up into three categories: somatic tacit knowledge, contingent tacit knowledge, and collective tacit knowledge. The typology to describe these three categories is “*what is tacit due to the functioning of the human body and brain (somatic), what is tacit due to the historical development of the technical domain or matters of contingency (contingent) and what is tacit due to its location in the social collectivity (collective)*” (Ribeiro, 2013, p. 343).

Somatic tacit knowledge is what can be described as the tacit knowledge related to sensorial skills and is where physical interaction in the world takes place. A common example of this is riding a bicycle. Contingent tacit knowledge is described as the “taken-for-granted” practices that individuals unknowingly grasp or embrace to become members of a group. This tacit knowledge is amendable to codification – i.e., alteration. Contingent tacit knowledge could be novices doing something experienced individuals would never do, but the experienced individuals only realize this when the novices break the “taken-for-granted”. An example here is a novice not realizing a dress code which an experienced individual takes for granted and the novice is subsequently not permitted to enter a building. The final category, collective tacit knowledge, is what is described as the essence of tacit knowledge. Collective tacit knowledge is the ability to fully participate in a form of life. What this means is that individuals can perform actions where an understanding of a social context is needed for the action to be properly performed. This knowledge is “codified” in a culture/group/society and cannot be altered by an individual. Another way of explaining collective tacit knowledge is that application of rules might need human judgement – i.e., collective tacit knowledge. If a machine has inputs of fixed

and unambiguous rules, the judgmental part of the operation (does it work as intended) is transferred to another human (designer, operator etc.) (Ribeiro, 2013).

### 2.2.2 Importance of tacit knowledge in organizations

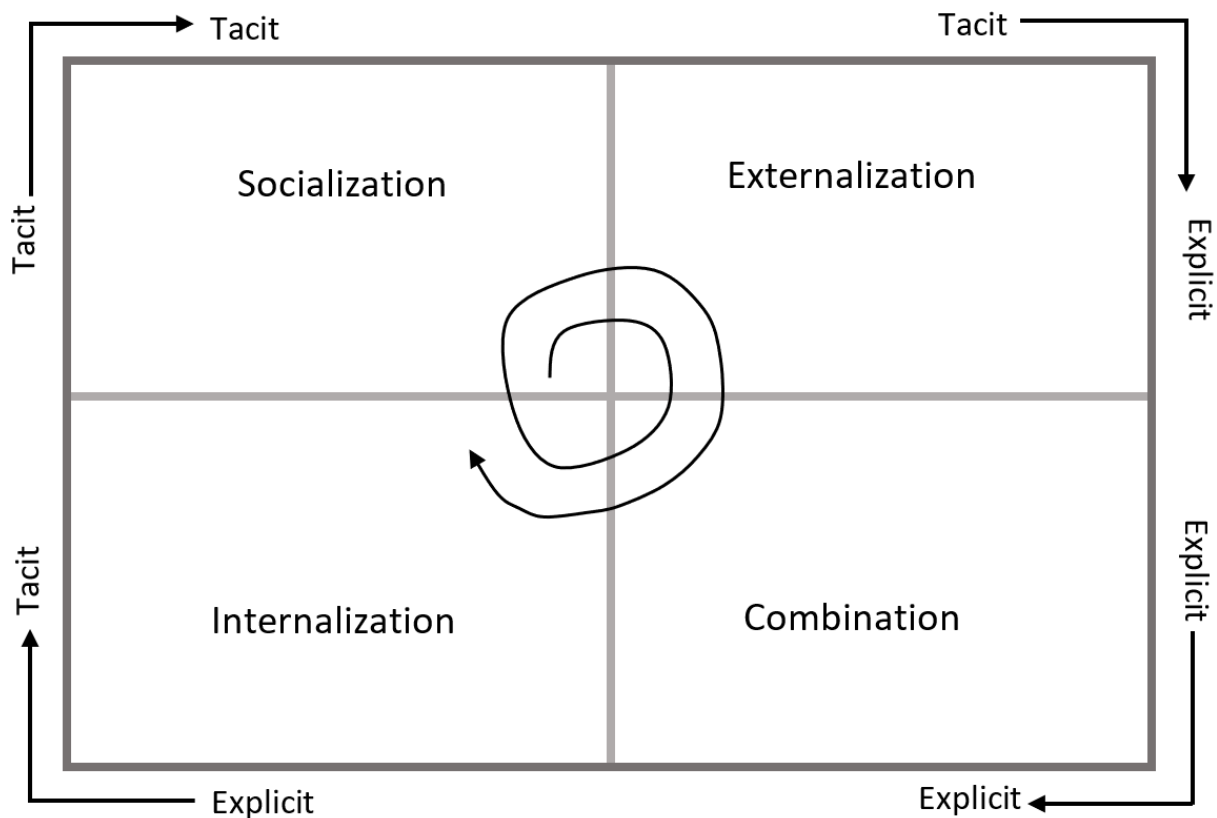
Under the introduction chapter, it was stated that an increase in a company's ability to adapt and create innovation and knowledge is a key competitive advantage. Closely linked to this is the tacit knowledge an organization possesses in the workforce.

In an extensive literature review of sharing tacit knowledge in organizations, Mohajan (2016) found that tacit knowledge is an important factor in an organization's success. Tacit knowledge in organizations is essential for business decisions, innovation, quality, and competitiveness – both at the individual and organizational level. It also is a key component in increasing overall effectiveness and an estimated 90% of an organization's knowledge is embedded tacitly. Mohajan (2016) even points out that tacit knowledge is the most strategically important resource of an organization, which supports the statement that knowledge is the only meaningful resource today (Drucker 1993, quoted by Nonaka and Takeuchi, 1995).

## 2.3 SECI model

SECI stands for socialization, externalization, combination and internalization. The SECI model was first presented in 1990 by Ikujiro Nonaka and has since been refined.

The SECI model itself is a model which tries to define the interaction between explicit and tacit knowledge where the interaction is called knowledge conversion, shown in figure 2. The model consists of five main features which are 1) Socialization - from tacit-to-tacit knowledge, 2) Externalization - from tacit-to-explicit knowledge, 3) Combination - from explicit-to-explicit knowledge, 4) Internalization - from explicit-to-tacit knowledge and 5) a spiral representing that the knowledge conversion shifts between the different modes of interaction (Nonaka, 1994, Nonaka and Takeuchi, 1995).



**Figure 2: The SECI model (Nonaka et al., 2000).**

### 2.3.1 Socialization

Socialization is the mode where tacit knowledge is converted to tacit knowledge. Socialization describes the process where knowledge is created by experience sharing through shared mental models and technical skills. It is also a mode where sharing of tacit knowledge is between individuals captured through physical proximity – hence the term is coined as “socialization”. A common example of tacit-to-tacit knowledge conversion is learning through observation, imitation, and practice – like an apprentice observing a skilled worker doing his or her job. Another example is on-the-job training where a new colleague is assigned a more senior colleague to observe and learn. The key word of socialization is “experience”. As socialization is conversion from tacit-to-tacit knowledge, some sort of shared experience is important. Without this, it is difficult for an individual to follow others in their thinking processes (Nonaka and Takeuchi, 1995, Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.3.2 Externalization

Externalization is the mode where tacit knowledge is converted to explicit knowledge. Here, tacit knowledge becomes explicit in the shape of metaphors, visuals, concepts, hypotheses, models etc. This can be achieved through dialogue, which is defined by Nonaka as “*listening and contributing to the benefit of all participants.*” (Nonaka and

Konno, 1998, p. 44). When tacit knowledge is converted to explicit knowledge it becomes easily accessible/comprehensible for others and is simple to share. During this mode, an individual commits to a group through the knowledge creation process and becomes one with the group. The sum of the individuals' intentions, ideas, concepts etc. in the group fuse together to become integrated in the group's mental world. An example of externalization is that workers in a factory could improve the way work is carried out based on their accumulated tacit knowledge of e.g., "best practice". This best practice is then written down as a guideline for the rest of the factory and tacit knowledge has become explicit (Nonaka and Takeuchi, 1995, Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.3.3 Combination

Combination is the mode where explicit knowledge is converted to explicit knowledge. The combination mode is a process where systemizing is key for the conversion. Through combining different bodies of explicit knowledge, new more complex and/or systemized explicit knowledge can be created. Explicit knowledge can be shared through e.g., documents, meetings, or email. If this explicit knowledge is combined with each other through sorting, adding, categorizing etc., then new explicit knowledge is created. This knowledge conversion could be created through large scale metadata gathering or simply by an accountant putting together a financial report. Breaking down concepts is also within the combination conversion mode. Breakdown could be a middle manager breaking down a corporate vision and applying it as an operationalized business concept. Such a breakdown is systemic, explicit knowledge. Combination conversion of knowledge is often related to facilitating for knowledge sharing in organizations, thus transcending from group to organization (Nonaka and Takeuchi, 1995, Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.3.4 Internalization

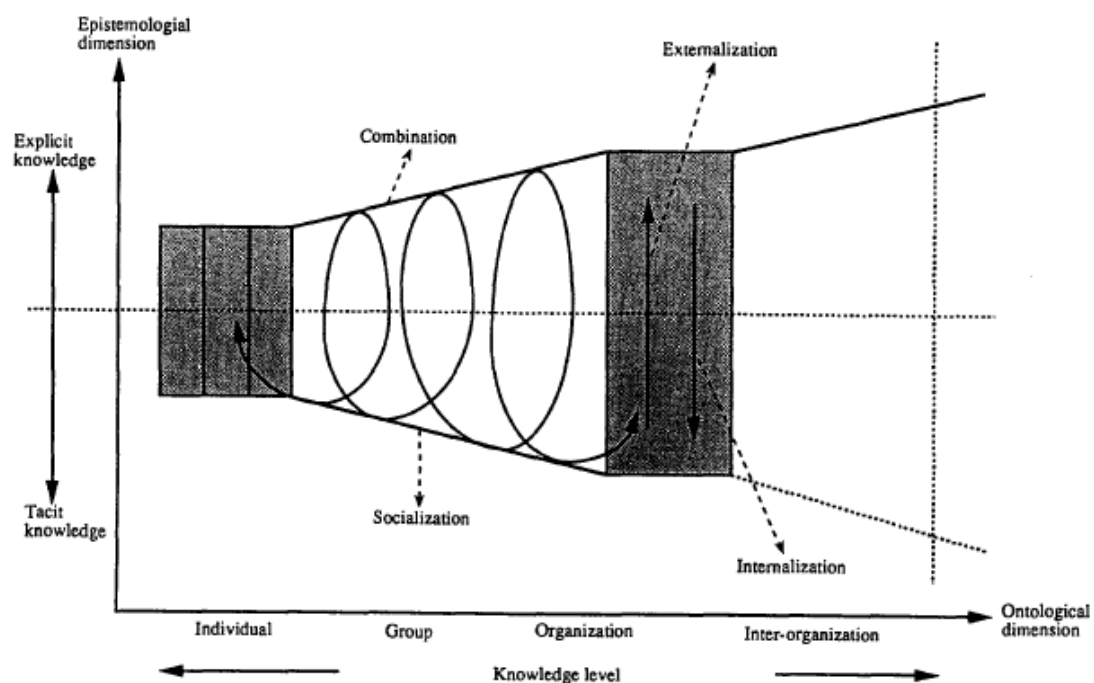
Internalization is the mode where explicit knowledge is converted to tacit knowledge and relates to organizational learning. The key word for internalization is "learning by doing" and is contributed by both personal experiences and simulation/experimentation. Explicit knowledge is shared throughout an organization and is made tacit by individuals. The experiences gathered through socialization, externalization, and combination are internalized in an individual and these experiences becomes tacit knowledge in the form of shared mental models or technical know-how. The accumulated tacit knowledge embedded in an individual through internalization can set of a new cycle of knowledge conversion, where an individual socializes with another. Internalization therefore completes the cycle in SECI from individual to group to organization and back to individual again (Nonaka and Takeuchi, 1995, Nonaka et al., 2000). It is therefore

related to enhancement of knowledge (von Krogh et al., 2001). An example of internalization is reading documents, manuals, or such, and then reflecting upon them. By reflection, such explicit knowledge can be internalized and enrich the tacit knowledge. Another example is re-experiencing other people's experiences (Nonaka and Takeuchi, 1995, Nonaka et al., 2000). The example from externalization can be used here. When the "best practice" is written down, others can read it. By reading this best practice, and applying it, workers enrich their tacit knowledge through other workers experiences/explicit knowledge, thus re-experiencing it through others.

## 2.4 Knowledge spiral

Each of the modes from the SECI model of knowledge conversion are capable of creating knowledge independently (Nonaka, 1994). However, the SECI model alone cannot explain properly the dynamic interaction between the modes necessary for the conversion itself, nor the amplification of knowledge conversion present in the different modes. This is where the knowledge spiral is presented.

The knowledge spiral is shown in figure 3. In short, it explains that knowledge creation starts at the individual level and transcends from the individual up to an organizational level in an ever-expanding spiral moving between tacit and explicit knowledge modes from the SECI model (Nonaka, 1994). An important note is that the knowledge spiral is indeed a *spiral* and not a circle, moving through the epistemological and ontological dimensions of knowledge creation (Nonaka et al., 2000).



**Figure 3: The knowledge spiral (Nonaka, 1994).**

### 2.4.1 Epistemological dimension

Epistemology stems from the Greek words episteme (knowledge), and logos (explanation) and is the study of the nature of knowledge and justification (Audi, 1995).

The epistemological dimension (the y axis) is split in two with a dotted line, where one half is explicit knowledge, and the other half is tacit knowledge. This line represents the conversion of knowledge from tacit-explicit-tacit-explicit etc. When the spiral crosses the line from down to up, it is the conversion from tacit to explicit (externalization) while the from up to down is from explicit to tacit (internalization) – illustrated by the vertical arrows at the end of the spiral. Combination and socialization on the other hand only happens either above (explicit) or below (tacit) the dotted line (Nonaka, 1994, Nonaka and Takeuchi, 1995).

### 2.4.2 Ontological dimension

Ontology stems from the Greek word ontos (being, or that which is) and logia (logical discourse). Ontology is part of the philosophical branch of metaphysics and is referred to as the “study of being” (Bøhn, 2020).

The ontological dimension (the x axis) ranges from an individual to an inter-organizational level. As Nonaka argues that knowledge first is created as tacit knowledge in the individual, the knowledge spiral starts at an individual level and is the first level. As knowledge is converted, it travels up the ontological dimension from an individual, through group and finally (inter-)organization. While the spiral is traveling, it is expanding. This expansion illustrates that knowledge is applied to more and more participants (i.e., an organization is larger than and individual). The knowledge spiral might stop at organization, however often knowledge can be transferred inter-organizationally. A common example of this is an organizations knowledge is shared with a customer (Nonaka, 1994, Nonaka and Takeuchi, 1995).

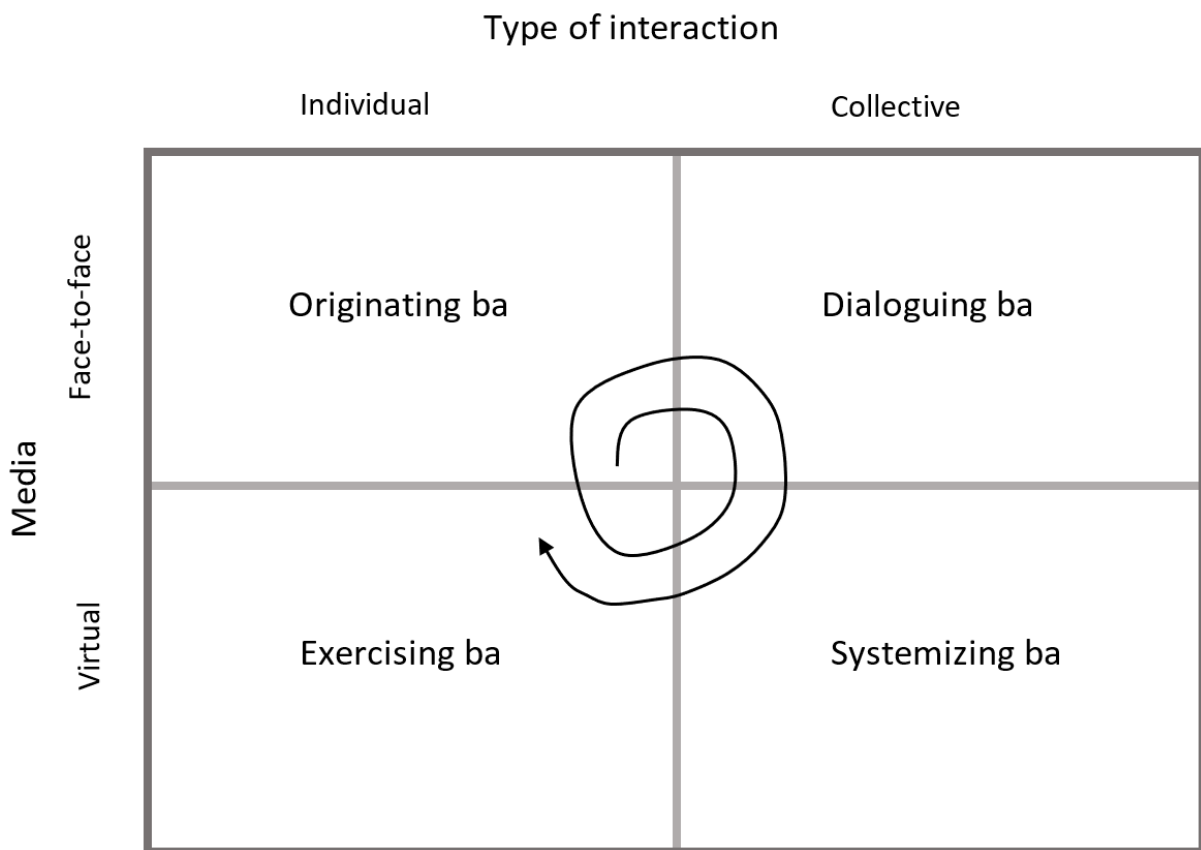
## 2.5 The concept of ba

Ba is a Japanese word which roughly translates to “place”. However, ba cannot be understood as “place” alone, as it does not mean a physical place, but rather a specific time and space. It is a concept that unifies physical space (e.g., an office), virtual space (e.g., an email) and mental space (e.g., shared ideals) – and it does not necessarily need to be bound by one of these spaces (Nonaka et al., 2000, von Krogh et al., 2001).

Ba is used to describe that knowledge needs context to be created as Nonaka (2000) argues that one cannot be free from context in knowledge creation. Therefore, ba is defined as a shared context in which knowledge is shared, created, and utilized. In addition, generation, and regeneration of ba is important, as ba provides the energy,

quality and place to convert an individual's knowledge along the knowledge spiral. Or in other words, "ba is a place where information is interpreted to become knowledge" (Nonaka et al., 2000, p. 14).

There are four types of ba: 1. Originating ba, 2. Dialoguing ba, 3. Systemizing ba and 4. Exercising ba. Each of these four types offers a context for a specific step in the knowledge creating process, however the relation between each ba and conversion modes are not exclusive as it is dynamic. The types of ba are again defined by two dimensions of interaction. One dimension is the *type* of interaction, either individually or collectively. The other dimension is the *media* of the interaction, either face-to-face or virtual (e.g., books, e-mails etc.). The four types of ba relates to the four features of the SECI model (Nonaka and Konno, 1998, Nonaka et al., 2000). The different ba and types of interaction are shown in figure 4.



**Figure 4: The four types of ba with the different dimensions of interaction (Nonaka et al., 2000).**

### 2.5.1 Originating ba

Originating ba is defined by individual and face-to-face interactions. This space is where individuals share their experiences, feelings, emotions, and mental models. The context here is mainly socialization due to it being individual face-to-face interaction, which captures all physical senses and emotional reactions (e.g., ease or discomfort). In

originating ba, an individual transcends the boundary between self and others through sympathy or empathy. From this, care, love, trust, commitment etc. emerges, and forms the basis for knowledge conversion between individuals (Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.5.2 Dialoguing ba

Dialoguing ba is defined by collective and face-to-face interactions and was previously called interacting ba. Here, individuals' mental models and skills are shared by two processes in unison: sharing the mental models of others while still reflecting and analyzing their own. These mental models/skills are again converted into common terms and concepts, and dialoguing ba is therefore mainly related to externalization. Through dialoguing, individual's tacit knowledge is shared and articulated, where this articulated knowledge is brought back into each individual, strengthening the conversion from tacit to explicit knowledge. Dialoguing ba is a more conscious constructed ba than originating ba. Therefore, individuals with the correct mix of specific knowledge and skills are important in managing knowledge creation here (Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.5.3 Systemizing ba

Systemizing ba is defined by collective and virtual interactions and was previously called cyber ba. It mainly offers a context for combination of explicit and explicit knowledge. This is because explicit knowledge can easily be shared to a large number of people through writing, thus systemizing explicit knowledge throughout the organization. Information technology offers a virtual environment for the creation of systemizing ba, and examples of such environments are databases, spreadsheets, mailing lists etc. These environments create a place for participants to exchange necessary information, answer questions, collect or break down information etc. This combination and presentation is mostly utilizing existing, explicit knowledge (Nonaka and Konno, 1998, Nonaka et al., 2000).

### 2.5.4 Exercising ba

Exercising ba is defined by individual and virtual interactions and as such, mainly offers a context for internalization. In exercising ba, an individual embodies the explicit knowledge that is communicated virtually (written text etc.). The knowledge is internalized in such a way that the individual does not need to refer to e.g., manuals to know something, or develops skills which are no longer conscious (Nonaka et al., 2000).



## 2.6 Knowledge assets

Knowledge assets are the inputs, outputs and moderating factors of the knowledge creating process. These assets are defined as “*firm-specific resources that are indispensable to create values for the firm*” (Nonaka et al., 2000). Knowledge assets are difficult to both evaluate, capture, and manage as they are dynamic. Therefore, they are categorized in four categories: experiential, conceptual, systemic, and routine knowledge assets.

### 2.6.1 Experiential knowledge assets

Experiential knowledge assets is the shared tacit knowledge which is shared through hands-on experience amongst individuals in an organization, in addition to members in an organization and its customers, suppliers or other affiliates. Experiential knowledge assets are difficult to grasp as they are tacit and specific to organizations. Examples of such assets are emotional knowledge (care, love, trust), physical knowledge (facial expressions, gestures), energetic knowledge (enthusiasm, tension) and rhythmic knowledge (improvisation) (Nonaka et al., 2000).

### 2.6.2 Conceptual knowledge assets

Conceptual knowledge assets is explicit knowledge expressed through images, symbols and language and are assets based on concepts held by customers and members of an organization. These assets are easier to define, however they are still subject to perception as it is difficult to know what customers and organizational members perceive. Examples of such assets are brands, concepts, and designs (Nonaka et al., 2000).

### 2.6.3 Systemic knowledge assets

Systemic knowledge assets is systemized and packaged explicit knowledge. These assets can be transferred relatively easy. These assets are also the most visible type of knowledge asset as managing these assets often revolves around intellectual property rights. Examples of such assets are product specifications, manuals and documented and packaged information on customers/suppliers (Nonaka et al., 2000).

### 2.6.4 Routine knowledge assets

Routine knowledge assets is tacit knowledge which is embedded and routinized in actions/practices of an organization. Continuous exercises and patterns of thinking/actions are reinforced and shared amongst organizational members. This means that the characteristic of routine knowledge assets is that they are practical. Examples of such assets are know-how and organizational routine (Nonaka et al., 2000).

## 2.7 Summary of Nonaka's work

Nonaka's work and theories are spread out across multiple books/articles. This chapter will therefore summarize and collate the various aspects of his research.

SECI is a model which tries to describe and define the interaction between explicit and tacit knowledge, and how these are converted – the knowledge conversion. The SECI model is not a static, but a dynamic model. This is shown by a spiral, which is called the knowledge spiral. The knowledge spiral illustrates how knowledge is converted through the different aspects of the model, where knowledge first starts at an individual level and ultimately transcends to the organizational level and possibly beyond to externals. The knowledge is then transferred back to the individual, making knowledge passing from individual to group to organization and back to the individual again (Nonaka, 1994, Nonaka and Takeuchi, 1995, von Krogh et al., 2001). A visual representation of the SECI model is seen on figure 2, while the knowledge spiral can be seen in figure 3.

Ba is the context for which knowledge is created. It separates the contexts into two dimensions of interaction, type of interaction and media of interaction. These two dimensions form the four modes of ba and constitute individual/collective and face-to-face/virtual. These four modes are linked to the four aspects of the SECI model (Nonaka and Konno, 1998, Nonaka et al., 2000). A visual representation of the concept of ba is seen on figure 4.

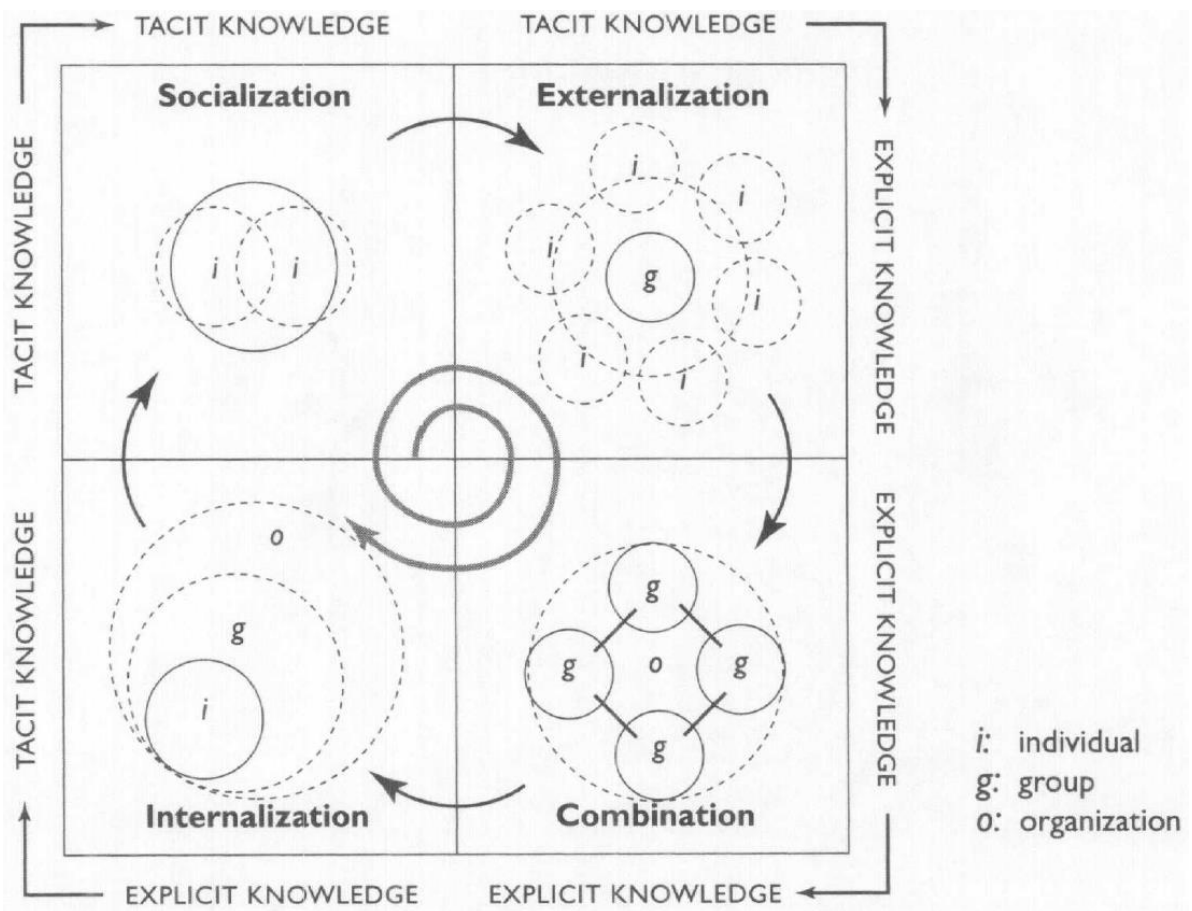
The knowledge assets are what provides input and output to the knowledge creating process and are resources (material and immaterial) for the organization to utilize. The knowledge assets are also moderators between SECI and ba (Nonaka et al., 2000).

Ba is understood as the setting/context for which knowledge can be exchanged through interaction. SECI on the other hand is understood as a cognitive process in an individual. As such, SECI is the cognitive process in an individual which happens through the dimensions of interaction/contexts set forth by ba. The knowledge spiral might suggest that knowledge "travels" from an individual to an organization and as such an organization can be understood as a cognitive unit itself based on the above understanding of SECI. This is however not how it is understood. Rather, the knowledge spiral is understood as a model of how knowledge is "spread" throughout an organization, where the cognitive process of SECI still happens in an individual, be it just a single individual or a collection of individuals. The conversion of knowledge in individuals is understood as dynamic through the spiraling feature of the model, separating explicit and tacit knowledge through the line on the epistemological dimension.

The knowledge assets are understood as “tools” which can be utilized to enhance the knowledge sharing process. For instance, a systemic knowledge asset can be a product specification. Using this product specification during e.g., training can be viewed as a tool to enhance knowledge sharing.

Using its existing knowledge assets, an organization creates new knowledge through the SECI process that takes place in ba. The knowledge created then becomes part of the knowledge assets of the organization, which become the basis for a new spiral of knowledge creation.

Figure 5 is a representation of the connection between SECI, ba and the knowledge spiral. Note that knowledge assets are not included in this model.



**Figure 5: The connection between SECI, ba and the knowledge spiral (Nonaka and Konno, 1998).**

## 2.8 Criticism of SECI model and ba

As with many models presented, the SECI model/ba concept has received some criticism. The most major points from this criticism will be presented here.

The most common criticism of the SECI model is that the SECI model was presented through research on Japanese companies during the 90's. The SECI model is therefore based on Japanese companies, on Japanese soil and with Japanese culture and is therefore not necessarily transferable to other cultures. This specific criticism is used by various researchers. For instance, Hong (2012) argues that the Nonaka and his colleagues tried to establish a universal validity of the SECI model. However, they failed to consider that the Japanese companies managed to mobilize its members to participate in the SECI model through the influence of Japanese cultural values. Therefore, in a way, the SECI model could be seen as a more local model rather than global model (Hong, 2012).

Stephen Gourlay has also argued on several occasions that the SECI model is flawed. He presented an article which pointed out that the empirical evidence to support the model has shortcomings. In this article, he lists three points: 1. Much of the empirical data gathered was from Nonaka's previous studies on information creation, not knowledge creation. 2. The survey used as a basis to form the SECI model could only support the socialization and combination modes of the model. 3. The data used for the modes combination and internalization has not been clearly described, thusly the combination mode could also be brought to question (Gourlay, 2003). In a later article, Gourlay argues that Nonaka' uses a very subjective definition of knowledge, that knowledge is created by managers, which in turn would suggest that the SECI model could be a managerial decision-making model rather than a knowledge conversion model (Gourlay, 2006).

In the book *Slik skapes kunnskap* by von Krogh et al. (2001), where Nonaka is co-author, it is admitted already in the foreword that the book *The knowledge creating company* (1995) focused on the process on knowledge creation. However, it was not made with the aim in mind on how the readers should proceed in applying its content (von Krogh et al., 2001).

To summarize, the major points criticism can be presented as follows:

- SECI model is based on Japanese culture, which might not be transferable to other cultures.
- The empirical evidence is flawed.
- Nonaka's view on knowledge is very subjective.
- The process of applying the model is not clearly defined.

## 2.9 Organizational knowing

In this thesis, Wanda Orlikowski's view on organizational knowing and how this influences a geographically dispersed (global) organizations will be used.

Wanda Orlikowski presents a focus on organizational knowing instead of knowledge management (which is what Nonaka focuses on). What is meant by organizational knowing is that individuals are understood to act knowledgeably as a routine in their everyday activities and the social or physical contexts of which these activities are constituted. Orlikowski (2002) further uses this understanding of organizational knowing to look at how global organizations generate and sustain knowledgeability in their distributed operations. She emphasizes that there is a difference between "knowledge" and "knowing", where she defines "knowledge" as either a thing (to be captured and stored) or a disposition (individual or collective), while "knowing" is a form of tacit knowledge in that it is inseparable from action because it is constituted through action (Orlikowski, 2002). This is similar to the epistemology of practice which Ribeiro uses in his work to understand knowledge (Ribeiro, 2013).

It is knowing, or rather knowing in practice, which is the perspective she adopts to study organizational work and organizational knowledge in a global company. Organizational knowing is therefore a perspective which allows an understanding of how distributed work is accomplished through everyday actions and practices by an organization's members (Orlikowski, 2002).

There are five main practices in organizational knowing:

- Sharing identity i.e., knowing the organization.
- Interacting face to face i.e., knowing the players in the game.
- Aligning effort i.e., knowing how to coordinate across time and space.
- Learning by doing i.e., knowing how to develop capabilities.
- Supporting participants i.e., knowing how to innovate.

These five practices are all overlapping practices, and competence in organizational knowing is grounded in the everyday practices of the organization's members. These practices are also ongoing accomplishments which need to be facilitated and repeatedly enacted (Orlikowski, 2002).

Practice of sharing identity is the ongoing generation and reinforcement of the organization's identity. This allows members to internalize and identify with a common way of thinking. In a geographically dispersed organization, this facilitates communication and coordination across the members regardless of where they are situated. Examples of

this is a common vocabulary despite different languages and a framework for making sense of each other's (technical) requirements (Orlikowski, 2002).

Practice of interacting face to face allows members to get to know each other through creating and building networks. This in turn creates emotions such as trust, respect, and commitment between members. These emotions are foundations for further interaction and sharing of information and help cross "borders" in both a geographical sense, but also across technologies, ethnic differences, and time zones (Orlikowski, 2002).

Practice of aligning effort is where managers coordinate activities and allocate resources across borders, projects, time zones etc. Aligning effort is dependent on a uniform way of working, for instance a common project management model or methodology. This helps organizational members to quickly understand what is expected, who is working on what, and allows for flexibility if something changes (lack of resources, reprioritizing etc.) (Orlikowski, 2002).

Practice of learning by doing is knowing how to develop organizational members, and thus the organization as a collective. Examples of such developments is providing individuals with education, actively mentoring them, promotions from within, and offering rewards for work done and risks taken. This development creates a human capital, which in turn creates a basis for a deeper experience and expertise. If employees are retained, they become part of what is described as the "organizational memory", or the collective experience and expertise (Orlikowski, 2002).

Practice of supporting participants is the practice where multiple voices and ideas are represented in discussions and decision processes. This practice stimulates innovation as creativity is supported through multiple and diverse ideas or experiences which are shared. Actively distributing and dispersing types of work around the world encourages sharing of ideas and experiences and reintegrates these back to the organization through the distribution (Orlikowski, 2002).

## 2.10 Compatability of theories

In the theory chapter it has been presented work from mainly three researchers – Ikujiro Nonaka, Rodrigo Ribeiro and Wanda Orlikowski. These researchers have different views on how knowledge should be understood where Nonaka has a view that knowledge is possessed by individuals and can be converted, while Ribeiro and Orlikowski understands knowledge as in the social context of knowing constituted through action. These two views are the called the epistemology of possession, and the epistemology of practice (Ribeiro, 2013). The main difference and nature between the views on knowledge is

found in both the epistemological and ontological dimensions. The differences on the definition of knowledge lie in if its (Ribeiro, 2013):

- Something given or socially constructed.
- The property of individuals or collectivities.
- Abstract or situated.
- Universal or local.
- Timeless or dated.
- Amenable to codification or tacit.
- A commodity or a practice.

These differences constitute the question – are these views on knowledge compatible?

### 2.10.1 Epistemology of possession and epistemology of practice

What is common for all researchers is that they all separate between explicit and tacit knowledge – however with some varying views on what tacit knowledge actually constitute. Another common theme is that they all look at knowledge in an organizational point of view – meaning that their research is based on findings in organizations/companies. It is also the point on social interaction. Even though it is a disagreement if knowledge is created or constituted through action, both views assume human socialization as the foundation and that knowledge is dynamic. Nonaka claims that *“knowledge is dynamic, since it is created in social interactions amongst individuals and organizations”* (Nonaka et al, 2000, p. 7) while Ribeiro states that *“Knowledge is [...] the property of a social group and constitutes a ‘form of life’ [...]. Knowledge is also rule-governed [...] and doing things in ‘the same’ way or ‘properly’ is the result of a social agreement – be it tacit or not – that changes according to the circumstances and with time.”* (Wittgenstein 1976, quoted by Ribeiro, 2013, p. 339).

Further, both views assume that knowledge is, in essence, something which is “spread” between individuals. For instance, in Nonaka’s work the knowledge spiral shows how knowledge is converted through the epistemological dimension and transferred through the ontological level. Ribeiro’s view is that knowledge is constituted through actions which are socially agreed. What is understood here is that there needs to be e.g., shared mental models, much like as for Nonaka, for knowledge to be “accepted”, and thus knowledge must be spread. Here, the epistemological dimension is understood as the “action”, while the ontological dimension is understood as the “social agreement”.

### 2.10.2 Organizational knowing and ba

In terms of Nonaka’s framework on knowledge and Orlikowski’s presentation on organizational knowing there are also some comparisons to be made. As Orlikowski and

Ribeiro are mainly using the same framework for how knowledge should be understood, the comparison on epistemology of possession and epistemology of practice is still valid. What is mainly to be noted however is that organizational knowing and the concept of ba are actually very similar – just presented differently. The immediate similarity is that both organizational knowing and ba are *facilitators* for knowledge. For instance, practice of interacting face-to-face are both similar to originating ba. In both instances, emotions are what is the “drive” for facilitation. Further, practice of sharing identity and dialoguing ba are similar in the sense that both externalize shared mental models and create a common way of thinking for further facilitation. Practice of supporting participants is also similar to dialoguing ba because of the basic function that dialogue among several individuals stimulate the context. Also, practice of learning by doing and exercising ba are similar in that individuals will be the “source” of knowledge/knowing through their internalized experiences. Lastly, practice of aligning effort and systemizing ba are similar in the sense that both facilitate for a systemic approach. However, they are not as similar as the other practices/ba’s.

### 2.10.3 Summary of compatability

It can be argued that the theories can be used side by side to some extent, as it is the human socialization which is the foundation for both views. In addition, both view knowledge as dynamic and that it is spread through individuals. Another common feature is that both separate between explicit/tacit knowledge and are based on research for organizations/companies. In addition, Nonaka’s ba and Orlikowski’s practices are very similar. For the purpose of this thesis, both views will therefore be used. However, the epistemology of possession will be the main view on knowledge as Nonaka’s work is the primary theoretical assumption in this thesis.



## 3 Method

In this chapter, the thesis question will be presented again and broken down into research questions. In addition, the research method will be presented and discussed, including its validity and reliability.

### 3.1 Thesis question

As presented briefly in the introduction chapter, the thesis question was selected due to a gap found in DESMI's internal strategy SWOT for sales, Marine & Offshore. Under Strengths, it is stated that: "Employees have a strong application and product knowledge". However, under Weaknesses it is stated: "Untapped cross-country learning". The gap identified is that employees in DESMI are knowledgeable, however DESMI is not utilizing this knowledge by sharing it across countries where DESMI is represented (local sales offices), thus creating the thesis question "How can DESMI facilitate for knowledge sharing across countries?".

What is to be noted from the sentence "Untapped cross-country learning" is that it is two-fold. One aspect is that the untapped learning means that there is a preference for specific applications in some countries. These applications could potentially be applicable to other countries/markets, however these "other" countries/markets are not aware of the application. The other aspect is that deep product knowledge is often found among some key personnel scattered across sales companies. Should questions arise requiring deeper product knowledge, this deeper knowledge is not necessarily available as it can be difficult to know who to contact or where to find the information. These two aspects are directly linked to Strengths again – application and product knowledge is strong, but not necessarily across countries. It is important to note that application and product are two separate things. An application could be ballast water treatment system (BWMS), while a product could be a centrifugal pump within the BWMS. Therefore, strong knowledge of application and product is not necessarily one employee in one country but could be separate employees in separate countries where one is strong in application while the other is strong in product.

To try to answer the thesis question "How can DESMI facilitate for knowledge sharing across countries?" it was necessary to identify relevant theory within knowledge sharing. As such, Nonaka's work on knowledge sharing was selected, with emphasis on the SECI model and ba. Ba describes context for knowledge sharing and therefore how knowledge sharing can be facilitated. By exploring ba within DESMI, it could lay the basis for further

improvements and/or continuation of existing knowledge sharing. Research questions are therefore based around the four types of ba – originating, dialoguing, systemizing, and exercising ba. Nonaka’s work is however not sufficient enough to cover the aspect of “...across countries” in the thesis question. Therefore, Orlikowski’s work on organizational knowing will be used to try to describe the international aspect of the thesis question.

## 3.2 Research questions

By breaking down the thesis question “How can DESMI facilitate for knowledge sharing across countries?” into more specific questions, the thesis question is operationalized through research questions. As mentioned in the previous chapter, the selected theory to operationalize the thesis question is the model on ba. When a researcher bases his/her research on already existing theories from previous research it is called deductive research (Busch, 2013). This thesis is therefore deductive research as it is based on existing theories.

Further, the research questions will be linked to each of the four types of ba - originating, dialoguing, systemizing, and exercising ba. Additionally, a research question related to organizational knowing will also be presented.

The research questions are given presented in the next sub-chapters, including justification of questions.

### 3.2.1 Originating ba – research question

Originating ba is closely linked to socialization in the SECI model and it describes the context of individual and face-to-face interactions. Due to originating ba forms the basis of knowledge conversion through care, trust, commitment etc. in its context, the physical interaction between individuals is important. Therefore, the research question is “*How does DESMI facilitate for colleagues getting to know each other?*”.

### 3.2.2 Dialoguing ba – research question

Dialoguing ba is closely linked to combination in the SECI model and it describes the context of collective and face-to-face interactions. In dialoguing ba, tacit knowledge is converted to explicit knowledge by sharing and articulating tacit knowledge, ultimately making individuals start sharing skills and mental models. The research question here is therefore: “*Does DESMI create an arena for dialogue and does DESMI document this experience?*”.

### 3.2.3 Systemizing ba – research question

Systemizing ba is closely linked to socialization in the SECI model and it describes the context of collective and virtual interactions. The key feature of systemizing ba is that

explicit knowledge is made “even more explicit” by combining and systemizing knowledge – often through databases or such. Here, the research question is therefore: “*How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way?*”.

#### 3.2.4 Exercising ba – research question

Exercising ba is closely linked to internalization in the SECI model and it describes the context of individual and virtual interactions. Here, explicit knowledge is embodied in the individual, thus converting it to tacit knowledge. Through SECI’s internalization, of which exercising ba provides the context, important aspects are “learning by doing”, personal experience and simulation/experimentation. Therefore, the research question here is: “*Is DESMI encouraging employees to utilize its collective company knowledge?*”.

#### 3.2.5 Organizational knowing – research question

Organizational knowing is very much related to the five different practices: sharing identity, interacting face to face, aligning effort, learning by doing and supporting participants. These practices provide a perspective which allows understanding of distributed work. Therefore, the research question here is: “Are the practices of organizational knowing facilitated and repeatedly enacted in DESMI?”. It is here understood that organizational knowing is set in an international context.

### 3.3 Research design

In this chapter, the various aspects of research design will be discussed. These aspects will be compared and a justification for the selected design will be presented.

#### 3.3.1 Quantitative versus qualitative research method

There are in principle two different research methods – qualitative and quantitative research. Shortly explained, the former gathers data through interviews while the latter gathers data through numbers/statistics (Johannessen et al., 2011). The selected research method for this thesis is qualitative research.

The reason for not selecting a quantitative research method is, as mentioned in the criticism of the SECI model, due to little available data on actual field research for the SECI model. Should there have been a quantitative research method, the research data would preferably be gathered through a standardized survey which in the answers would be compared to already available data from this standard. However, there is little data available, meaning that a survey would have had little validity and reliability and therefore pure statistics could potentially have given a wrong answer. Also, referring to

the thesis question – how can DESMI facilitate for learning across countries – this question would be difficult to put into statistical terms even if some data were available.

The same issue arises with a qualitative research method though. However, a qualitative is suited for an intensive research design. An intensive research design is where the research goes more in depth and data is gathered from a few sources (Busch, 2013). As such, this method will give more flexibility in that it can be put into the specific context of DESMI and how DESMI operates and not just a company in general. As the author of this thesis is an employee of DESMI, a qualitative interview could also be more beneficial as the author already knows the company and possibly share some mental models with other employees. This is seen as beneficial as it could lead to deeper discussions into topics since the author does not have to look into the “groundwork” (i.e., how does DESMI operate) before conducting the interviews. In addition, a qualitative research method does not necessarily need to find subjects which represents a larger population, but rather subjects which have the necessary prerequisites to provide insight into the research questions (Busch, 2013).

### 3.3.2 Ethnographic desing versus case design

When the thesis question was found, there were two different designs under qualitative studies which were suited for further work – ethnographic design and case design.

According to Johannessen et al. (2011), ethnographic design is a description and an interpretation of a culture, a social group, or a social system. Examples of such “groups” can be immigrants or corporate cultures. The purpose of an ethnographic design is to research into the purpose of language behavior and interaction within a group, and to uncover a description of the group (patterns, typologies, and categories). Typically, an ethnographic design spans a relatively long period of time where the researcher goes out in the “field” to do research, possibly actively participating in the society/group/culture.

The stages of an ethnographic design are:

1. A description of the culture/group is created by the researcher.
2. The researcher creates an analysis of themes or perspectives which are to be studied.
3. An interpretation of the culture is created where an understanding of the interaction and forming of opinions is presented.
4. The full “cultural portrait” of the group/culture is presented with both views from the participants and the interpretation of these from the researcher.

Case design is where the researcher gathers information from a few units or “cases” over either a short or longer period of time through detailed and comprehensive data gathering. The data sources are dependent on time and place and as such, cases are

studied in a setting, e.g., physical, social, historical and/or economical – often through a qualitative method. What is important in a case design is that attention is limited to the specific case, and that a detailed description of the case is given (Johannessen et al., 2011). There are five main components of a case design according to Yin (2007, quoted by Johanssen et. al 2011):

1. The issue: Firstly, an issue is found, which the researcher then formulates into a research question (here: thesis question).
2. Theoretical assumptions: The researcher finds some theoretical assumptions which will be the building blocks for further research.
3. Analysis units: This is the limitations the researcher sets. Who/what is to be analyzed? This could be individuals, institutions, a group etc.
4. The logical connection between data and assumption: This is where the link between data and theoretical assumptions are made.
5. Criteria to interpret the findings: This is where the findings are compared to existing theory on the subject.

For this thesis, a case design was selected. Even though an ethnographic design would be a good choice, the aspect of doing the research over a prolonged period of time made this not possible. As mentioned before, the researcher works for DESMI and as such already is in one form or other part of the “DESMI culture”. However, ethnographic design calls for research to be conducted over a long period. This was found to be difficult, as the researcher would have to set aside much of the normal workday.

The case design was therefore a better choice as this allowed for a shorter period for researching. The three first components of a case design can in this thesis be described as: 1). The issue was found in the Sales SWOT and a thesis question was formed from this. 2). The theoretical assumption here is mainly Nonaka’s work on knowledge sharing, with supporting theories from Ribeiro and Orlikowski. 3). The analysis unit is the Marine & Offshore sales segment in DESMI Europe. The last two components are covered under the result and discussion chapters.

### 3.3.3 Data gathering

This thesis is based on a qualitative research approach, where the design is an intensive case design. There are several ways to gather data for qualitative research, where the most common ones are interviews or observations (Johannessen et al., 2011). For this thesis, interviews were selected. The reason for selecting interviews was that interviews have some attributes which were deemed as advantageous for the thesis. Some attributes includes that the participants can better share experiences and perceptions and can better reconstruct/explain events (Johannessen et al., 2011).

Further, it was decided to do semi-structured interviews. Semi-structured interviews are where the researcher has an interview guide as a pointer for the course of the interview. However, the actual course of the interview does not need to follow the interview guide as the semi-structured approach allows for changes in themes, questions, and order of the interview. In short, this allows for some flexibility while still maintaining some control of the flow of the interview (Johannessen et al., 2011). The interview guide used for this thesis can be found in attachment 1. This interview guide was formed on the basis of a semi-structured approach, although it might appear as a more structured guide. The thought was to create questions under each ba, which was directly related to each research question under the thesis question, hence a somewhat structured look. Organizational knowing did not have its own “chapter” in the interview guide. The reason for this was that the other questions would most likely gain insight into the international aspect of how DESMI manages communication, information sharing etc. across borders.

### 3.3.4 Selection of interviewees

In this chapter, the selection of the interviewees will be discussed and justified – both in terms of selections size, selection strategy and recruitment of interviewees.

Demographics of the interviewees are intentionally left wanting in this chapter. This is because giving out too much information could lead to an easy identification of the interviewees. For instance, the criteria for selecting interviewees alone narrows down the selection in such a way that even stating the name of the countries participating will lead to an identification. Also, all interviewees will be mentioned as “he” regardless of actual gender to anonymize the participants during the rest of this thesis.

Under the discussion of a qualitative versus quantitative research design, it was mentioned that the research for this thesis would have an intensive research design. The intensive research is where the research can go more into the details/depth from a smaller number of resources (Busch, 2013). It was therefore natural that the number of interviewees was somewhat small. In addition, the thesis was based on a case design, allowing further narrowing of potential interviewees.

The selection of interviewees was linked to the initial findings in the NL<sup>2</sup> strategy. The strategy points out SWOT for sales (figure 1) – hence potential interviewees were from the sales department. Further, the researcher decided to further limit/narrow in the potential interviewees. DESMI is split into three regional distribution centers – Europe, Asia, and North America. These centers create a natural “boundary” in terms of which country speaks to which center as these centers are factories with support functions. The area which was selected was the European area, which further narrowed the potential interviewees to sales in Europe. DESMI also has split its sales into five different segments: Marine & Offshore, Industry, Defence & Fuel, Utility and EnviRo-Clean. These

five segments are (usually) selling different products for very different applications. As such, communication between segments would not necessarily be very productive to look into, and communication (or rather knowledge sharing in the context of this thesis) inside one single segment was considered more productive. As the Marine & Offshore segment is the largest in DESMI, this was selected. This further narrowed down the potential interviewees to Marine & Offshore sales in Europe. As a sales organization usually has some support functions, especially from the distribution center (factory/hub), a consideration to bring potential interviewees from the "hub"/corporate support functions was found necessary. The final narrowing was therefore Marine & Offshore sales in Europe plus support functions directly related to Marine & Offshore sales. These support functions could be either managerial functions or operational functions.

The actual selection of interviewees was done in cooperation with a central employee from DPTA. The above limitation of potential interviewees was presented to this employee, which in turn returned a list of potential interviewees. The selection of interviewees from this list was at the discretion of the researcher alone. This was done to anonymize the potential interviewees.

Not all potential interviewees received a request for an interview though, as some further considerations were done. These considerations were: to exclude relatively "new" DESMI countries/offices, try to avoid multiple persons from one country, find persons who had been with DESMI for a longer period of time, try to find "frontline" sales personnel and not managerial personnel (like country manager), find relevant support functions from the hub/corporate. These considerations were done to keep a somewhat uniform selection, but in the sense that this was an intensive selection, again related to an intensive research design. An intensive selection is a selection where the subjects has very similar characteristics, but not necessarily to the extreme. This selection strategy is done to find sources which can contribute a lot of information (Johannessen et al., 2011). The Norwegian offices were not included as the researcher works for DESMI Norway, and thus an interview of close colleagues could have created a conflict of interest and/or biased results.

The final list ended up with seven potential interviewees from six different countries. These seven potential interviewees were the preferred selection, but there were multiple backups in case response was too low or too diverse/inconclusive. The strength of the selection was that it contained subjects with similar characteristics as all either worked in M&O sales or had a support function (managerial or operational) related to this. Another strength was that the selection had some years in DESMI, meaning they had experience from "normal" circumstances before the pandemic – which was seen as favorable. There was also a diversity in affiliated countries, giving a nuanced selection across Europe. The

biggest weakness however was that most interviewees were in the age 40+, which could possibly alter perception on subjects. There was also the possible weakness that when selecting interviewees from "before the pandemic", the selection would be too embedded in DESMI. This was however not too much of an issue, as the selection had worked with DESMI for 2-3 years up to 20+ years with an even distribution.

The seven preferred potential interviewees were sent an invitation for an interview per email. This email can be found in attachment 2. Out of seven invitations, five responded positively to an interview, one was a "maybe", while the last one did not have a reply. Ultimately, the "maybe" turned into a "yes", and the number of interviewees ended up to a total of six from five different countries. The reason for stopping at six interviews was that the sixth interview (the "maybe") was conducted due to many patterns/same answers emerging from the previous five. The sixth was therefore done to sort of "confirm" these patterns and a seventh interview was not found to be necessary, due to the answers from number six.

### 3.3.5 Execution of interviews

The interviews were one-to-one interviews held in the period 16.04.2021 to 05.05.2021. Due to the pandemic, it was not possible to do the interviews face-to-face and was therefore done through meetings on Teams. It was encouraged to keep a face camera on during the interviews, however this was encouraged just to have a more personal communication. Not all interviews had camera on due to some varying reasons (improve call quality/internet connection etc.).

Before any interviews were held, a test meeting through Teams was held where recording and general IT was checked. It was discovered that Teams has no function for recording audio only. Due to this, the email in attachment 3 was sent out. Basically, it was to inform that the recording would contain interviewees faces if they left the camera on. It was however informed again that camera was optional as the audio would be the only recording of interest.

All interviews started with the researcher reinforcing the general purpose of the interview, and the privacy information – in general a refresher of the emails sent in attachments 2 and 3. A special emphasis was placed on the privacy information where the interviewees were informed that the interview was anonymous, and that they could withdraw at any time. They were also informed that the interview would be recorded, but that audio only would be used. Additionally, they were informed that the researcher would tell them when recording started and ended – this would also appear as a message on Teams. Finally, they were also informed that a transcript of the recorded meeting



would be made available to them upon request. None of the interviewees requested a transcript and none of the interviewees withdrew.

During the interviews themselves, the researcher tried to keep to a semi-structured interview. The opening of all interviews was the same, where the questions from the "Introduction chapter" were asked. These questions were there to create the setting for the interview, and potentially "kickstart" some of the subjects which were to be discussed later. Most interviews were kept more or less according to the interview guide, however there were several jumps back and forth through the subjects. There were also some needs for clarifications underway, in addition to the researcher needing to steer the conversation back to the subject. The length of the interviews ranged from 50 minutes to 1,5 hours where the average would be around 1 hour.

The final question of each interview was if it was ok for the interviewee to be contacted again later for some clarifications or follow-up questions. All interviewees said yes to this. A follow-up call was only necessary for two interviewees where there was one call each. These calls were not recorded and lasted for 5-10 minutes only.

### 3.3.6 Validity

Validity is the term used to describe how good, or relevant, the data is to the phenomena being researched. Johannessen et al. (2011) separates validity into three categories: concept validity, internal validity, and external validity.

Concept validity is the validity concerning the relation between the general phenomena being researched and the factual data found. In other words – does the research data reflect what is being studied? To determine if concept validity is high or not, indicators are usually used. Indicators are what can be seen as typical for a general phenomenon being researched. In addition, common sense might need to be employed as well, which is called face validity (Johannessen et al, 2011). Concept validity is difficult to determine in this thesis. This is due to a lack of indicators and mostly face validity was employed. There were however some parts of the answers given which could be considered to have a higher concept validity than others. The reason for this was that the same answer was given by all interviewees for many of the questions, establishing a pattern. The concept validity is still somewhat dependent on face validity though, and as such the concept validity is ambiguous.

The internal validity is if the research is suitable to prove cause-and-effect or not. If a research has a good internal validity, the research has good grounds to say that a specific cause has a specific effect, and vice versa. Basically, can the research disprove contradicting explanations (Johannessen et al., 2011)? Internal validity is found to be good in this thesis. This again goes back to the mostly uniform responses received by the

interviewees. There was a general “agreement” on topics and all interviews were separate/one-to-one and anonymous, making it very unlikely that interviewees “coordinated answers”.

The external validity can also be called generalization. This validity is if the research can be generalized and transferred to other areas/contexts not related to the research (Johannessen et al., 2011). As this thesis has a case design, based on existing theories (theoretical assumption), it is found not to be very generalizable. This is because DESMI as an organization is probably not too generalizable. As such, the research would probably be specific for DESMI. For instance, many countries are involved, and the company setup is probably somewhat unique with its own segments/support functions.

### 3.3.7 Reliability

Reliability is how accurate the research data is, what data is used, how it is collected and how it is processed. In short, how reliable is the research data? To test data reliability, it is possible to do the same examination on the same group/subject at two different times. If the results stay the same, the reliability is high. This is called test-retest reliability. Another way to test reliability is that different researchers look at the same phenomenon. If the results are the same, the reliability is high. This is called interrater reliability (Johannessen et al., 2011).

Test-retest reliability was not possible to do due to time constraints. Interrater reliability is however another matter. As mentioned under the criticism of the SECI model, the underlying theoretical assumptions are somewhat uncertain. In addition, there is little empirical data to support the model. Still, the model is widely used within knowledge management. As the researcher works for DESMI Norway, the results and analysis can also become biased. To try to reduce the potential bias, the researcher excluded DESMI Norway from the research. There were also some cases during the actual interviews where the researcher corrected the interviewees when they tried to imply that the researcher should already be aware of something, e.g., sentences like “*But you already know this*” or “*As you know...*”. These comments were not answered and instead the interviewees were encouraged to explain further on the topic in their own words.

On the other hand, working for DESMI could potentially have a positive impact on the reliability. By already being a part of the “DESMI culture” and knowing beforehand what is actually meant by certain sentences or topics could help the analysis. For instance, all interviews were to be conducted in English. However, it was not given that the interviewees were good at English. This could be a possible barrier for meaning transfer. However, by already being a part of DESMI, such “meaning barriers” could have been

avoided as the context of which they were presented was already understood by the researcher.

## 4 Results

The goal of the interviews was to see how DESMI shares knowledge and what might be missing. Each research question is linked to the four modes of ba or organizational knowing. The result chapter is therefore divided as such, in addition to the respective sub-topics under each ba (except organizational knowing). The division is related to the setup of the interview guide in attachment 1. This means that the empirical data is presented under each topic with only a short summary of the highlights from the topic. Combining the topics will be done in the discussion chapter. Organizational knowing does not have its own chapter as this research question was not included in the interview guide. As such, results for organizational knowing are not included directly, but topics for organizational knowing will be combined and analysed in the discussion chapter. This is also due to topics on (organizational knowing) practices and ba were found to be similar and writing them down would therefore only produce the same empirical data twice.

The interviews were done during the COVID-19 pandemic. Many of the answers were therefore given with an additional "this was before the pandemic, though" when talking about things related to physical interactions, like e.g., meeting face-to-face, attending exhibitions/courses or just being in office.

Some additional information should also be clarified. In the result chapter, all DESMI subsidiaries will be referred to as "countries". Even though they are referred to countries, it should be noted that country does not mean the complete staff of that country, but rather the M&O segment + possibly support function for that country. The terms "international" and "European" colleagues will be used. These are understood as the other colleagues in the European Marine & Offshore segment.

### 4.1 Originating ba

Under originating ba, the research question was "How does DESMI facilitate for colleagues getting to know each other?". For originating ba, the key points are related to personal interactions (face-to-face) and emotions (trust, commitment etc).

#### 4.1.1 Getting to know each-other

The subject on getting to know each other is placed under originating ba as individual face-to-face interaction is the cornerstone of this mode (Nonaka et al., 2000).

When directly asked if DESMI facilitates for colleagues getting to know each other, all interviewees answered directly "No" in one way or another. This answer was however modified for everyone as the further questions nuanced the picture. For instance, some participants spoke about the difference between international acquaintances and local acquaintances. The explanation was that it is common in the DESMI subsidiaries (countries) that the offices are somewhat small, and it is therefore natural that everyone in the office knows each other. However, on the European M&O "scene", there is not much communication. In one of the interviewees words: *"Not really. No, I think it's a missing pointer. In DESMI, we are walking in each country, you know, and we haven't a lot of communication between us."* This perception was shared by several of the interviewees.

This notion is further strengthened when asking about exhibitions. DESMI as a sales company participates in a lot of exhibitions per year all around the world. All interviewees have participated in exhibitions, but when asking if other countries participated together with them the answer is similar to what was said of another interviewee: *"No, usually we are on exhibitions related to our own backyard, if you can say so. Locally, country by country."* What is meant by this is that e.g., an exhibition held in Norway means that only Norwegian DESMI employees attend. The only time another country participates would usually be because there is a special product to be exhibited/represented or management wants to/is requested to participate – both of which would be from the Danish headquarters. Participation from Denmark/other country during exhibitions is not common for all DESMI countries though.

At exhibitions it was commonplace to meet up after a day is done for either dinner, or just a beer together etc. Here, interviewees state that it was common that country colleagues join each other, as there would mostly be only local participation in the exhibitions. It was however also common that DESMI invited (potential) customers, or even competitors on rarer occasions, to go with them. As such, these after-activities were described as more "unofficial sales call" rather than a social activity between colleagues. When asked if they keep in touch with the various colleagues after (the exhibitions), the answer were similar to what has been mentioned before – country colleagues are part of the normal workday and it was therefore natural that they keep in touch. However, colleagues from other countries were usually from Denmark only and keeping in touch with them was something which could collectively be expressed as *"Not as much as I like"*.

Internal seminars/gatherings with several countries were also brought up during the interviews. All interviewees had participated in some sort of internal gathering, and more planned gatherings were mentioned – although cancelled during 2020/2021. These types

of gatherings mentioned were however different from each other between the interviewees. One interviewee mentioned gatherings as trips to the factory together with a customer where several colleagues from the factory/HQ had also been part of the gathering. Another interviewee mentioned the DESMI Summit as a gathering (DESMI Summit being annual internal meeting of DESMI country managers + DESMI higher management), while another again mentioned an internal training seminar for a new product. Common for all the above gatherings though was that none of these gatherings had been a common M&O segment gathering, only minor ones. One of these minor gatherings with several countries were described by an interviewee as *"That kind of forum for me was really healthy, and really useful [...]. If there's more collaboration, we could probably work more effectively and more successfully."*

The interviews highlighted that there was a significant difference between knowing colleagues in your own country and knowing colleagues in Europe.

#### 4.1.2 Knowing the other countries

Another theme was how well each country knew about the rest of the countries in general. The subject of knowing the other countries is placed under originating ba as this helps to create an image on how communication is done, and relationships are built within DESMI across borders.

The first question was on how one would contact another country. The general answer was to contact the country manager directly. Finding out who the country manager is was further found either on the DESMI homepage or on the intranet (called DESMInet). When questioned on how one could find out what other countries actually do, and are possibly good at, the general answer would be the similar (contact country manager).

However, the difference here was also very dependent on informal contacts and network. One interviewee said (on question if he knew what other countries were doing): *"Only if I search for it. It is not obvious to me."*, where further questioning revealed that the searching would be through the informal network. This was also elaborated by another interviewee: *"[...] I try to find contacts on DESMInet, or I ask my boss who I should contact. And I try to get in touch with those contacts directly. Because going through the segment or by sales support, for example, it's non-existing."*

The interviews highlighted that there was a general lack of communication across countries, but that communication existed informally and was possible to do.

### 4.1.3 Trust

The subject on trust is placed under originating ba as emotions such as trust helps to build relationships, and consequently making it easier to share tacit knowledge (Nonaka et al., 2000).

When examining trust, both trust between country colleagues and European colleagues was discussed. Internally in each country, the trust between colleagues was relatively high. When asked if it is easy to ask for help from country colleagues one interviewee said: *"Never come across any resistance around that. Like I say, we work as quite a small team in [country]. So, we kind of have to work like that."* Another interviewee said: *"Could be better, but I have a good feeling that we support each other."*

Further to the above, it was asked if colleagues were willing to share tricks of the trade, meaning the genuine interest in helping, not just the "yes/no" answers. The replies here had some variations, but the general answer was that it depended on who you were asking and what the questions was. If a colleague knew the answer or had insight into the problem, that colleague would be willing to share. Otherwise, there would not be much sharing. As one interviewee said: *"[...] if they can't answer my question, then I can just throw out the whole thing through the window"*. "They" was in this context country colleagues.

The same line of questioning was also asked for European colleagues. Here, the answers were somewhat divided as most interviewees separated European colleagues into two where one was the informal contact network (individuals) while the other was the formal contact network (mostly sales support department). The trust between individuals was relatively high, while the trust to the official support function was somewhat low. One interviewee elaborated a common line of thought as this:

*"If I know where I should go with some special subject for example, [...], I know that some people are very known in Denmark, and I then try to go directly to those persons. I do this because they will always answer me and this is very, very helpful. [...] Because if I ask sales support, the guys are very nice, but I know that they don't have the time. So they want to me to officially ask through our systems, which takes more time than writing the first mail. And after that, I have to wait a few days to get an answer because the queue is long, and there is no fast track to get my answer sooner"*.

The above quote is summarized as that the support function is bypassed due to slow response time. Going to specific individuals instead tends to be much faster and easier. However, every interviewee agreed that the willingness to help each other in DESMI was high regardless of if you were asking through informal networks or official channels. It was more a matter of getting the right answers in due time.

The subject on trust was also turned around where it was asked if the interviewees themselves were willing to help. Everyone said yes to this question, and those that held support functions went farther and said that this is an extremely important aspect of the day-to-day business. There were some modifiers though, as helping/supporting others would depend on nature of question and time at disposal.

The interviews highlighted that there was a high level of trust between colleagues in their own country, a somewhat high trust in the informal international network each employee had and a moderate/low trust in the formal support network.

## 4.2 Dialoguing ba

Under dialoguing ba, the research questions was "Does DESMI create an arena for dialogue and does DESMI document this experience?". For dialoguing ba, the key point is several individuals who share and articulate their tacit knowledge which then converts to explicit knowledge. The term "dialogue" should here be understood as "*listening and contributing to the benefit of all participants.*" (Nonaka and Konno, 1998, p. 44). A somewhat simplified version of this could be called "discussion".

### 4.2.1 Starting dialogue

The subject on starting dialogues is placed under dialoguing ba as dialogues, and creating them, sets the premise for making tacit knowledge explicit when shared (Nonaka et al., 2000).

During the interviews, none of the participants answered that there was an official arena in DESMI for starting dialogues. One of the interviewees put it like this: "*I said before, from my point of view it is missing something where you can share your success, or if you lost a project. Some people don't know, and it should be very interesting to have this platform*". Arenas for discussions did however exist, just unofficially/informal and they happened as a cause of something and were temporary. An example from another interviewee was that once there were very special customer requirements. These requirements got so intricate that multiple departments had to be involved to solve them. This example was somewhat similar to other answers, as it was a dialogue caused by an external factor (a customer).

Further, when asked if ones experience had been important in internal discussions (both local and with colleagues from other countries), most interviewees were somewhat hesitant as it was difficult to think of examples. Most examples ended up being related to knowing customer needs or discussion with customers themselves, as most discussions happened externally. For the internal discussions that were actually internal, most of the



time these would happen with colleagues from own country. Should other countries be involved, it would mostly be on a managerial level or from the sales support department.

In terms of being able to participate freely and being heard in discussions, a few of the interviewees said yes, but that it would be mostly related to customer talks. Others outright said yes without going further into the subject. One however contradicted the rest and said that unless you have a strong mindset and strong technical know-how, you could end up being overruled in discussions: *"I have a feeling that some people in the organization have very strong mindsets and are playing on that [...]. DESMI is a very strong, technical organization. And so, you really need to know your stuff if you want to have something done"*.

The interviews highlighted that there was no formal way in DESMI to start dialogues, and that dialogues mostly were created/existed within each country. It was also highlighted that many dialogues were externally directed (towards customers), not internally.

#### 4.2.2 Documentation

The subject on documentation is placed under dialoguing ba as this would be where tacit knowledge is actually converted to explicit knowledge (Nonaka et al., 2000).

When asked if documenting a discussion (meetings or such) after it was concluded was common in DESMI, the general answer was no. An interviewee said: *"A rule of DESMI is that we are not spending time on minutes of meetings"*. The same applied to other scenarios as well, as another example from another interviewee was that not even visit reports when attending inspections on ships were written all the time. The most common scenarios where something was written was when there had been higher levels of meetings, or if a case was related to warranty issues. There was also the additional challenge where what was written could often be in the local language (not English), making it mostly unusable for the rest of DESMI.

The interviews highlighted that there is little formalizing within DESMI, except for when there are higher level meetings/subjects or there is a need to formalize due to external pressure (warranty issues or such). The formalizing is also done in several languages.

#### 4.2.3 Proactive and reactive dialogue

The subject on proactive and reactive dialogue was placed under dialoguing ba to help create a picture of how and why discussions happened in DESMI. This in turn could help to indicate why/why not things were formalized/documented.

The interviewees were asked if discussion were more proactive or reactive in DESMI. Most of the answers were two-fold as discussions could be both reactive and proactive.

However, most interviewees said that external discussions (with customers) were more reactive, as they often involved some technical issues. As one interviewee said: *"I would say more reactive than proactive (externally), we tend to act as a result of something happening rather than preempt it"*. This would be something happening at customer end, requiring some fairly immediate actions.

The internal discussions on the other hand were more proactive in general. The same interviewee as above continued: *"I think, certainly in [country], we make sure we don't have customer issues that we can kind of preempt, you know."*. This would be internal, local discussions where proactive work could prevent future issues at customer side.

Another interviewee had a similar explanation: *"Our sales meetings today are quite proactive. We are looking forward. How do we address the current market, upcoming markets, customer relations et cetera? But you know, getting a mail from a customer with a breakdown is always reactive."*

The interviews highlighted that discussions were mostly reactive towards customers (externally) and proactive within DESMI.

## 4.3 Systemizing ba

Under systemizing ba, the research questions was "How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way?". For systemizing ba, the key point is combining/systemizing explicit knowledge with other explicit knowledge and making it easier for sharing. Therefore, "knowledge" under systemizing ba should be understood as explicit knowledge.

### 4.3.1 Finding the knowledge

The subject on finding knowledge was placed under systemizing ba as this helps to create an image on how and where DESMI actually can find the knowledge needed in the day-to-day business.

The first part of the section on systemizing knowledge was how and where the interviewees would find knowledge in DESMI. Most answers on how knowledge was found in DESMI were by using the informal network to track down colleagues with insight. The sales support department was also mentioned as a potential source but was bypassed in favour of direct contact. It was however something one of the interviewees reflected on: *"If I contact sales support, I might get a short solution. But I do not get the experience or knowledge. This is not correct, I think. I therefore do not use sales support if I want the knowledge."*. What was meant by "knowledge" here was somewhat unclear.

However, it was understood as in the interviewee wanted deeper answers, which in his view was not easy to get from the sales support department.

Another interviewee said the following: *"It would be kind of hard to find that information on our own platform, because you need to know where to look. Hopefully, my own experience can help me out here. Otherwise, it would be trying to contact some of my colleagues and see if they have some experience."*

In terms of *where* knowledge could be found in DESMI, the answers are somewhat similar to *how* knowledge could be found. The knowledge retained in DESMI was, according to the interviewees, in the DESMI workforce – either individuals or potentially in the sales support department. However, the intranet was also mentioned frequently as the intranet had a variety of pages which could be navigated through to possibly find what one was looking for. Also, external contacts were used in DESMI to find knowledge. External contacts mentioned were customers, (naval) designers, suppliers, and simply friends/old colleagues.

The interviews highlighted that knowledge could be found through the informal contact network, and that formal contacts were bypassed. The intranet was also mentioned as a source of knowledge.

#### 4.3.2 Sharing the knowledge

The subject on sharing knowledge was placed under systemizing because this shows how explicit knowledge is shared on a broader scale in DESMI.

When asked directly if DESMI in general was good at sharing knowledge internally, every interviewee said "no", and was somewhat passionate on the subject. For instance, one interviewee said: *"I don't think we get the opportunity."* while another said: *"I think they are willing to start it up, but it needs to be improved a lot"* while yet another said: *"No one shares anything. Except if you ask for it of course."*

When asking why DESMI was not good at sharing knowledge, the answers were mostly different and pointed to several things. One interviewee pointed back to the intranet again and said that it was not designed to handle knowledge sharing. Another interviewee said something similar, but rather than pointing to the intranet he said that there was no platform in DESMI where knowledge could be obtained.

Another interviewee said that there was probably a lot of double work being done in DESMI due to the lack of knowledge sharing: *"I think that it's hard to get knowledge internal. And I have the feeling that this knowledge is inside of the organization. Sometimes a few people are doing the same, but they don't even know each other and that they are working on the same problems alone."*

What was said by this interviewee was also said by another one. However, the other interviewee further elaborated: *"It's not something that comes as second nature (sharing knowledge), we tend to kind of work in small silos within our business units. And if we can't get the answer within our business unit, we don't look beyond Denmark, I don't think"*. Denmark was here implied as support functions, not Denmark as in sales company.

One interviewee also said: *"We are not sharing knowledge. We have good attempts only [...]. It's difficult and it is an area we must improve"*. The good attempts mentioned here were for instance a new way of sending information on new product releases.

The last interviewee had a little more optimistic view on the subject, as he presented a solution rather than what was wrong. He said that DESMI as a whole should learn from DESMI OceanGuard (separate subsidiary within ballast water treatment), as DESMI OceanGuard was very good at sharing knowledge. There was also another highlight, as most interviewees said they were willing to support knowledge sharing as long as they got the opportunity.

What is not apparent from the quotes, was that when talking about knowledge sharing, all interviewees were using the terminology "they" all the time. It was never explicitly stated by anyone, but it was very implied that by "they" the interviewees meant DESMI centrally. The subject on knowledge sharing was also mostly talked about in a negative sense, which implied that there was an expectation to DESMI centrally to take action and improve knowledge sharing as it was a point of frustration.

The interviews highlighted that knowledge sharing was not something which was structured in DESMI. It was implied that the employees were ready to support it, but with an expectation that some action should be taken from DESMI centrally first.

#### 4.3.3 Knowledge sharing tools

The subject on knowledge sharing tools is placed under systemizing because this is a central point in this mode. Explicit knowledge can be combined with other explicit knowledge and good tools/access to this creates a way for the whole organization to use the knowledge (Nonaka et al., 2000)

As a preparation to the interviews, a list of what DESMI centrally regarded as knowledge sharing activities and tools was requested. This list can be found in attachment 4. This list contained 16 items, where 8 could be merged into one (various topic pages from the intranet) – meaning a total of 8 unique items. This list was not official in any way, and was possibly not exhaustive, but served as a pointer in what DESMI centrally regarded as activities/tools versus what M&O sales regarded as these activities/tools.

All interviewees mentioned the intranet as a knowledge sharing tool. The DESMI homepage was also frequently mentioned as: *"desmi.com is much more intuitive because it's made for customers"*. There were some varying opinions on other tools available within DESMI. For instance, a tool called Salesman Dashboard was mentioned as a knowledge sharing tool by some, while others saw it more as an information sharing tool. In addition, other tools such as the S drive (shared folder) was mentioned, but again there was no unity on if it is a knowledge sharing tool or not. The rest of the tools mentioned were QPM (pump selection/quoting program), documents like manuals and presentations, other colleagues, and Google. These tools were however mentioned only by single interviewees.

The interviewees were asked how easy these tools were to use. The DESMI webpage was generally regarded as easy to use, although some recent design changes had made it somewhat difficult to use before one got used to it. The tool mentioned the most, the intranet, on the other hand was regarded as not easy to use unless you knew what you were doing. As one interviewee puts it:

*"After some time, you get used to it. But for new people, it's not so easy as it is a huge amount of information there, and then it's also quite a lot of old information that doesn't need to be there. So, a clean-up could be great, and a more structured way of finding things. Because, I don't say it's the Wild West, but it is a problem"*.

The same interviewee also says that the intranet should be the only place to find information and/or knowledge to keep things uniform and easy for everyone.

Another interviewee said the following: *"DESMI net tends to be more kind of transmitting and receiving. So, I don't feel there is a tool (in DESMI) where there is that two-way dialogue"*. What was meant by this was that information is uploaded to the intranet. There is however not any function to propose *what* is uploaded to the intranet, making the intranet a one-way communication tool.

The interviews highlighted that the intranet was the primary source of knowledge. However, the intranet was found to be somewhat difficult to use and contained a lot of old and irrelevant information. The DESMI homepage was also mentioned as a tool and was easier to use.

## 4.4 Exercising ba

Under exercising ba, the research question was "Is DESMI encouraging employees to utilize its collective company knowledge?". For exercising ba, the key point is learning by doing and self-development. As such, the topics used to try and answer the research question were more indirect/proxy as the purpose was to see how DESMI converted explicit knowledge to the individuals and extract from this the answer to the research question.

### 4.4.1 Learning by doing

The subject on learning by doing is placed under exercising ba as this helps create the conversion from explicit knowledge to tacit knowledge. Through actions, mistakes, experience etc. the individual will embody the explicit knowledge and make it tacit (Nonaka et al., 2000).

The interviewees were asked what they would view as learning by doing activities in DESMI. The answers were somewhat different, but still similar. The general theme was that learning-by-doing in DESMI would be the day-to-day work – but where you would make mistakes and learn from them, taking risks and stepping out of your comfort zone. One interviewee said:

*"That is actually put yourself out there. If you have a task, let's say you have to sell some pumps today, well do that! You can't wait for them to call you, you have to put yourself out there. You have to get the experience, you can only get that by learning by doing. And you know, you have to take some risks for sure."*

Other interviewees highlighted "field experience" as learning-by-doing, either through customer relations or through physical attendances for inspection/work on the DESMI products.

However, when asked if there were any formalized ways of learning-by-doing within DESMI, there was no-one who said "yes". The actual learning-by-doing in DESMI was the day-to-day work only. One interviewee highlighted this: *"I think we could probably do more, you know. Getting some formal field training, or kind of mandatory field experience or something for the sales guys. Sending them out to actually work on the pumps if they haven't done so previously."*

The interviews highlighted that learning-by-doing within DESMI was the day-to-day business. It was however something which is achieved through active engagement ("put yourself out there", taking risks, field experience). Learning-by-doing was not something which perceived as formalized in DESMI.

#### 4.4.2 Mentoring

The subject on mentoring is placed under exercising ba as helps to support the transition from explicit to tacit knowledge through re-experience of others experience (Nonaka et al., 2000). Mentoring is also closely linked to originating ba and dialoguing ba and could have been placed under those as well, as mentoring will create both relationships and discussions.

Most of the interviewees had been, in some way or other, part of mentoring another DESMI employee. However, this was in relation to new colleagues starting in the company. Any mentoring which (might) have happened after this point was not formal, but rather day-to-day activities. What was common when the interviewees talked about mentoring other colleagues was that the approach to the training/mentoring had been somewhat random. By this, it is meant that there was no uniform way of doing it. As explained by one of the interviewees: *"No, it was just something that was, I guess, expected. And probably not even expected. But it's quite natural, you know, because you have a new team member coming in. And if he's looking to your manager, and your manager has no clue of how to do anything, then there are not so many options. He will look towards someone who can assist them, and usually you would quite naturally take on that role. Because, you know, we are a team, and we help each other."*

Another interviewee said: *"I set up a plan and we went through it every Monday. But I have no idea if this is what I was supposed to do. I was just told to do some of the training and how it was done was up to me. [...]. I had no guidelines or something"*.

It was still felt by the interviewees who had done some mentoring/training that it had went well, even though there were no formal way or guidelines on how to do it, or what was the expected outcome.

The interviewees were also asked if they themselves had been mentored by more senior colleagues. The answer was again that this only happened when starting as a new employee. Some of the interviewees also did not have any such mentoring/training as they either had been in the company for so long or that they were already "senior" when they started. But one common example which was brought up was the DESMI introduction week. This week is one week where new employees are sent to Denmark to get an introduction to the company, segment, basic product info, and to meet key people. Everyone who had attended this intro week said that this was a nice introduction.

When asked about being mentored in own country, there were some mixed answers. Some outright said no, while others said "yes, but...". The mentoring which took place would be the training/mentoring of new employees. One interviewee described it as: *"More a case of, you know, I'm kind of here if you need me"*.

It was however pointed out by two of the interviewees that the sales department in each country is generally small, maybe one or two, so there was often no-one to do any position specific mentoring. The training/mentoring would therefore be shared between various other colleagues. Any other mentoring after "setting in" in DESMI would again be more the case of day-to-day business and strictly informal.

The interviews highlighted that mentoring mostly happened when a new employee began in DESMI, and that there was no uniform way of doing it.

#### 4.4.3 Courses

The subject on courses was placed under exercising ba as this support self-development and could potentially create a better basis for converting explicit knowledge to tacit knowledge.

When asked if employees were encouraged to take courses in DESMI (either internal or external), there were somewhat mixed answers. Some interviewees said that they no longer held any interest in taking courses. Others said that there was not much encouragement, but rather mandatory attendance. Others again said that it was encouraged. When further asked on the subject, one of the interviewees said: *"I'm not sure we're encouraged unless it's relevant to the role or it's something that we feel [...] the company would benefit from. So yeah, I would say it's more kind of driven by the role in the employee than it is the business."*

This sentiment, that courses in DESMI should foremost benefit DESMI as a company, was shared by other interviewees. However, all interviewees answered "no" when asked if the knowledge from these courses was something that they were expected to share with other colleagues afterwards. Another aspect of the courses was pointed out by several interviewees. If one were to do any courses, one was expected to ask for this. Some internal courses were mandatory, but everything else was something each employee had to figure out for themselves that they should/want to attend.

This was also the same case when discussing appraisals. All countries had annual appraisals where goals were set for the next year. However, when asked what the interviewees felt was the purpose of these goals, the answers varied some. Some goals, like budget, were very clear. But the personal goals (like taking courses), was not something which had been reflected much upon most of the time. In general, the answer was that self-development was important, but it should feed back to the company in some way, and it was mostly the employees own responsibility to figure this out.



The interviews highlighted that courses were mostly mandatory when coming from DESMI as a company and all other courses should benefit DESMI as a company. These other courses were something each employee has to find and ask if they can attend.

#### 4.4.4 Transfers

The subject on transfers was placed under exercising ba as a transfer in position brings a new context for the employee to use and possibly embody explicit knowledge.

When asked if DESMI encourages transfers, the answer was "no" from every interviewee. It was however an answer with modification. As several interviewees pointed out, there was no room for internal transfers in DESMI for many countries as the offices were too small to allow for it. One interviewee said: *"Not really, except if you want to travel far to live in Denmark"*. Several other interviewees also said that you do not transfer when sitting in a sales position, you only get more responsibility.

Some transfers in DESMI had occurred though. When asked why a transfer would happen in DESMI, the answer was that it would happen due to one of two reasons – either it was a promotion, or it was something that the employee actively has asked for. This answer was given by all interviewees, even from those coming from a country too small to really allow for transfers.

Successor planning was also mentioned by two interviewees when talking about transfers. On both cases it was said that successor planning was not created, and that competency mapping was not something which had been looked into that much.

The interviews highlighted that there is usually not much room for transfers in DESMI and that transfers would mostly be promotions. In addition, there was no successor planning or competency mapping in DESMI.

## 5 Discussion

The concept of both SECI, ba and organizational knowing are not static, but rather dynamic and are overlapping in nature. As such, some of the various topics will also be overlapping. Still, the five different research questions will contain their own respective chapters and be discussed there.

### 5.1 Originating ba

Under originating ba, there were three main topics which were explored – how colleagues in DESMI gets to know each other, how DESMI employees gets to know other DESMI countries and trust between colleagues. These topics were related to the research question “How does DESMI facilitate for colleagues getting to know each other?”.

It was very clear that there was a significant difference between knowing colleagues locally and knowing European colleagues in DESMI. It is therefore important that these two are separated, as originating ba revolves around the interaction between individuals. Firstly, originating ba on a local scale will be discussed. As local knowledge sharing was not the main focus, this can only be discussed more generally. It is however important to gain an understanding of how local offices work, in order to gain a better platform to discuss on an international level.

#### 5.1.1 Originating ba – local

It was evident that the communication and interaction between colleagues locally in each country was high, and there were some reoccurring reasons for this. The most frequent reason was that the local offices were somewhat small, meaning there were few colleagues in the respective countries. As one of the interviewees pointed out, it was necessary for the colleagues in the local office to help and support each other due to the office being small. By having a small office, it is inevitable that individuals interact with each other. This interaction can be just a coffee break, or it could be a larger discussion. The reliance on each other during a normal workday also enhances the trust and commitment between the individuals.

This sort of encounter between individuals supports the mode of originating ba in a positive sense. It is through interaction between individuals that the context of creating/sharing/utilizing tacit knowledge through SECI’s socialization happens. Related to this context are emotions such as commitment and trust as well (Nonaka and Konno, 1998, Nonaka et al., 2000). Further, it can be argued that experimental knowledge

assets such as care and enthusiasm are utilized, moderating and giving input to originating ba (Nonaka et al., 2000). It can therefore be said that dialoguing ba in the local offices is positively present, although it can be argued that this might be more by chance rather than an active effort due to the main reason being that the offices are small.

### 5.1.2 Originating ba – international

For European colleagues it was a different matter. Here, the European colleagues were viewed as two separate entities by the interviewees – one was the informal contact network each interviewee had, and the other was the formal network. When discussing on the subject of knowledge, only the sales support department was identified as a relevant formal network. Other support departments in areas of logistics, production, order handling etc., were sometimes mentioned, but not in a “knowledge context”.

On the topic of originating ba, some contexts for possibly meeting European employees were looked at. These meetings were for instance exhibitions and internal gatherings. As a sales company, DESMI attends a lot of exhibitions around the world, which presents an opportunity for gathering a variety of employees. This creates a context for socialization, which would be originating ba (Nonaka et al., 2000). It was however found that exhibitions were usually only attended by colleagues from the DESMI office which was situated in the same country the exhibition was held. There were some exceptions to this though, as sometimes some managerial function or employees related to new and/or special products would attend from the Danish headquarters. However, other employees in the M&O segment around the world would not attend exhibitions outside of their country. This could be seen as a lost opportunity, as it was further found that it was very common to gather after the exhibition for either dinner or just a beer, further enhancing physical interaction between individuals. It should however be noted that often these “after-activities” were described as informal sales calls, as often customers would be joining as well.

On the topic of internal gatherings, there were some different answers and varying views on what an internal gathering entailed. One interviewee viewed this as a “simple” trip to the factory in Denmark together with a customer. In Denmark, this interviewee would meet up with some Danish colleagues for customer related activities. Another interviewee gave the DESMI Summit as an example (DESMI Summit being an annual meeting of the DESMI managers, global and local). Yet another example mentioned was training for new products. All these activities could be seen as “global” though, as they included gatherings of colleagues from different countries. This was also what was meant by internal gatherings – an internal gathering of DESMI employees from around the world. So, there were some internal gatherings in DESMI before the pandemic. However, there

was a variation in examples given on such gatherings, further implying that there were little "official" and regular gatherings. It should however be noted that an introduction week in Denmark for new employees is implemented in DESMI. This gathering has the purpose of introducing new employees to the different parts of the organization and meeting key persons in different positions. This was however not mentioned as a gathering, but rather a course when asking questions regarding systemizing ba.

Both exhibitions and internal gatherings were therefore not an important source of how European employees meet/get to know each other in DESMI. So, what would be the primary source? The answer here would be shortly described as the "jungle telegraph". When asking how the interviewees would go about contacting another country and find out what they were doing/good at, the majority said that they would either ask colleagues in their own office or call the country manager directly. Using the official channels, like the sales support department or the segment, was not a method which was used. As one interviewee said: "*Because going through the segment or by sales support, for example, it's non-existing.*". As mentioned in the results, it should again be specified that due to the COVID-19 pandemic, many of the face-to-face and physical interaction topics were answered with an additional "*this was before the pandemic, though*". What happens after the pandemic would be only guesswork and therefore will this sort of "old" data on gatherings etc. be used.

This leads to the informal/formal international network of the interviewees. Networking across borders is primarily done through other informal channels and has a somewhat random feature to it. If the "jungle telegraph" tells you that this specific person is correct to contact, then one would usually contact that person. This kind of internal "forwarding" of contacts has created the interviewees informal network over time, where some has a large network while others have a smaller one. The trust in the informal network was found to be high, as it was the preferred network illustrated by the interviewees often bypassing the official channels in favour of the informal network. It was however the overall impression that this sort of informal contact networking did not include colleagues from the same M&O segment, but rather key persons sitting at the Danish headquarters.

The formal network was defined by the interviewees as primarily the sales support department or segment management. As mentioned above, these official/formal networks were often bypassed by the interviewees. This bypassing suggests that the level of trust between the interviewees and the official network was not high. Much of this "distrust" however, especially for the sales support department, stemmed from the fact that the response time was slow and not necessarily that the interviewees distrusted what would come out of the interaction.

Trust in itself was also a matter which was looked at. As mentioned, the trust was high with the informal network while being somewhat low with the formal network, but not necessarily with the interaction itself. Why was this the case? For the informal network, the trust was found to be high mostly based on the fact that it was used to bypass the official network. But why was the official network bypassed? Again, this was mostly due to slow response time and not necessarily the interaction. During the interviews, e.g., questions on if it was easy to ask for help from international colleagues was easy was asked. It was in general found that DESMI employees were willing to support and help other DESMI employees regardless of where they were sitting. It was just a matter of the getting the right answer in due time – which directly relates to the “bypassing issue”. As the formal network consists of DESMI employees, just in a formal way, a connection between individual trust between employees could still exist, just not when going the formal way.

It should be mentioned that the interviewees themselves were asked if they would see themselves as positive to helping both local and international colleagues. This was done to see if how networks could be built. All interviewees answered yes to this. These answers were however discarded as most likely the vast majority would answer positively to this answer.

So, what can be drawn from originating ba from a European point of view in DESMI? First of all, it is shown that DESMI employees primarily will use their informal networks which are created through what can be described as the “jungle telegraph”, bypassing the formal/official network. Secondly, there are not that many activities in DESMI where European employees actually meet face-to-face and interact with each other. Nonaka claims that “[*Originating ba*] mainly offers a context for socialization, since an individual face-to-face interaction is the only way to capture the full range of physical senses and psycho-emotional reactions [...]” (Nonaka et al., 2000, p. 16). As such, the employees not meeting each other can be argued is hindering originating ba. In addition, emotions such as trust help both to energize and enhance originating ba (Nonaka and Konno, 1998, Nonaka et al., 2000). This trust towards the formal network is somewhat low, further hindering originating ba.

Originating ba is the context which facilitates tacit knowledge sharing. When looking at Ribeiro’s work on tacit knowledge one could further argue that both contingent and collective tacit knowledge are important aspects here which are potentially lost. Contingent tacit knowledge are “taken-for-granted” practices while collective tacit knowledge is the ability to perform actions based on an understanding of the social context (Ribeiro, 2013). Both these tacit knowledges could be viewed as “collective” in the sense that they are both dependent on social contexts. By not facilitating for

originating ba among European employees, the social contexts within DESMI could be viewed differently and cause a difference in what is viewed as knowledge, as knowledge is both dynamic, context-specific and humanistic (Nonaka et al., 2000).

### 5.1.3 Originating ba – summary

Originating ba has two dimensions in DESMI – one local and one international, where the international is further split into formal and informal networks.

Originating ba was found to be positive locally in countries, although this might be by chance and not by an active effort. On a European scale, originating ba was found to be somewhat lacking. The fact that international employees do not meet that often, and not that regularly effectively removes much of the context, the ba, for which socialization and tacit knowledge transfer can happen. In addition, emotions are important for originating ba. Here it was found that the informal network trust was high, while the trust in the formal network was somewhat low. Low trust further impedes originating ba.

## 5.2 Dialoguing ba

Under dialoguing ba, there were three main topics which were explored – how dialogues were created in DESMI, if dialogues were proactive or reactive and how documentation/formalizing of dialogues was done in DESMI. These topics were related to the research question “Does DESMI create an arena for dialogue and does DESMI document this experience?”.

Under dialoguing ba there was also the difference between local and international points of view, however not as strong as for originating ba. The local point of view will still be shortly presented before the international point of view is presented.

### 5.2.1 Dialoguing ba – local

It was quickly pointed out that most dialogues/discussions happening in DESMI M&O sales were external discussion towards customers. The internal dialogues were, as in originating ba, something which would most often happen naturally in the local offices as part of the normal workday. The way the interviewees explained the nature of these dialogues, was that they were reactive towards customers (e.g., warranty issues) while being proactive internally (e.g., sales meetings).

When talking about documenting/formalizing these discussions/dialoging in the form of e.g., writing minutes of meetings or such, there was a uniform agreement that this was not done on a broader scale. There was some documenting, however this was mostly related to external issues like warranty or similar. For internal documenting, there was mostly no documentation/formalizing. It is interesting to see that formalizing discussions was mostly done due to external factors/issues, while at the same time the interviewees agreed that the external dialogues were more reactive than proactive. This creates an understanding that there is a sort of “cause-and-effect” behavior related to when things are to be formalized or not, further creating an image on how dialogues are created in DESMI and why/how these would be formalized.

### 5.2.2 Dialoguing ba – international

What was agreed by all interviewees was that there was no official arena for starting dialogues in DESMI – not local, nor international. What was meant by “arena for dialogue” was for instance a platform for which two-way dialogue could happen – going to back to the definition of dialogue as “*listening and contributing to the benefit of all participants.*” (Nonaka and Konno, 1998, p. 44). Drawing from a quote from one of the interviewees: “[...] from my point of view it is missing something where you can share your success, or if you lost a project. Some people don't know, and it should be very interesting to have this platform”. What was meant by this is that there is something

missing when it comes to at least information transfer. However, a missing arena for dialogue in general can also make knowledge conversion from tacit to explicit more difficult due to the lack of creating common terms. It is when mental models are converted into common terms that the strengthening of knowledge creation from tacit to explicit happens (Nonaka, 1998). So even when looking at the missing platform purely from an information transfer perspective, it would still present the opportunity to for creating and sharing common terms. This is because facilitating for knowledge creation in dialoguing ba is moderated by conceptual knowledge assets like brand and concepts (Nonaka et al., 2000) and would probably be used even for information transfer.

Still, there were some unofficial arenas for dialogue. These were however similar to what was found in originating ba – they were created through the informal network. It is important to note here that originating ba is a context where emotions are formed while the dialoguing ba is the context the individuals start sharing mental models and skills, dialoguing ba is therefore a more consciously constructed (Nonaka et al., 2000) and should not be mixed. Regardless of this, creating dialogues are important to the knowledge conversion process no matter if they are formal or informal. What is essential in dialoguing ba though, is that the correct mix of individuals with specific knowledge and skills are important in managing knowledge creation (Nonaka et al., 2000). It was somewhat difficult to determine who would participate in dialogues within DESMI as most dialogues were happening externally towards customers. As such, the correct mix of individuals during “DESMI dialogue” was not determined. It was still a good understanding among the interviewees that knowledge was retained in the DESMI workforce and as such knowledge could be found through dialogue.

Although there were no official dialoguing arenas and most dialogue was external, dialogue still happened within DESMI. In terms of how dialogues “looked” and were conducted there were some interesting points. For instance, most interviewees responded positively to if they felt one could participate freely and be heard during discussions. However, one interviewee disagreed with this. One person disagreeing with five others is not a pattern and not necessarily significant. However, this interviewee sat in a support function and not sales function. As such, he had a lot more internal dialogue rather than external dialogue. What the interviewee basically said was that in DESMI one needed a strong mindset and solid technical background in order to not be overruled in discussions. If this is the case, then the conversion from tacit to explicit knowledge might be disrupted. Although the correct mix of individuals was difficult to determine it should still be noted that if just a few people are “forcing” their opinion, then it is only those mental models which are converted to the common terms and facilitates the knowledge conversion.



Under dialoguing ba, documentation/formalizing of dialogue was also discussed. While actual documentation is not directly related to dialoguing ba, but rather is an outcome of externalization, it is still important to look into for dialoguing ba. This is because the while the dialogue itself sets the context for conversion from tacit to explicit knowledge, the documentation of this dialogue is what makes it explicit. Explicit knowledge is easily accessible and simple to share (Nonaka and Takeuchi, 1995), and is therefore important to the further knowledge conversion process. In addition, the research question also asks "[...] and does DESMI document this experience?". It was apparent that DESMI did not formalize dialogues much, re quoting one interviewee: "*A rule of DESMI is that we are not spending time on minutes of meetings*". It was also found that even visit reports were not always written. These facts suggests that there is, for lack of a better word, a culture in DESMI for not writing and documenting dialogues/discussions. Most of the time a dialogue was written was whenever there would be a warranty issue. But what was common here was that the interviewees spoke about internal, country-by-country documentation/formalizing. This was evident through the fact that formalizing/documentation was said to be often written in the native language of the interviewee. As such, formalizing through an international perspective would be difficult to discuss further. Based on the fact that formalizing is not a priority on a local scale, it can be assumed though that international formalizing is also not a priority.

### 5.2.3 Dialoguing ba – summary

In DESMI, there were no formal arenas for starting dialogue. In addition, much of the dialogue was directed outwards towards customers and would therefore be local and not European. Still, some internal dialogue was present, however the mix of individuals present in these was difficult to determine. DESMI could probably achieve much by creating official arenas for dialogue as knowledge is retained in the DESMI workforce. A possible challenge with dialogue in DESMI though is the hint that there might be strong minds in DESMI who could possibly overrule dialogues.

There was also little documentation/formalizing in DESMI, and it could be argued that there is a culture in DESMI for not doing it. In addition, many of the documents were written in another language than English, hindering its usability to the rest of the organization.

## 5.3 Systemizing ba

Under systemizing ba, there were three main topics which were explored – how knowledge is found, how knowledge is shared and knowledge sharing tools in DESMI. These topics were related to the research question “How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way?”. It is important that the term “knowledge” under systemizing ba is understood as explicit knowledge as it is related to combination of explicit-to-explicit knowledge.

Another important thing to note was that the interviewees again said they used their informal networks for both *how* and *where* knowledge could be found in DESMI, locally and internationally. As systemizing ba revolves around combining explicit and explicit knowledge through collaborative information systems (Nonaka and Konno, 1998), utilizing informal networks are somewhat irrelevant. Utilizing the informal (or formal for that matter) networks in such a manner would be placed under dialoguing ba if knowledge is found from these networks directly (tacit to explicit). Therefore, when talking about networks under systemizing ba, they should be viewed more as knowledge assets, specifically routine knowledge assets such as know-how or organizational routine (Nonaka et al., 2000). This is because networks were found to be actively used to track down e.g., where knowledge could be found – sort of as in a forwarding function.

### 5.3.1 Systemizing ba – local

When discussing the topics on systemizing ba, there was an underlying understanding from the interviewees that the topics were related to a global approach rather than a local approach. Informal networks were listed as the common “local” feature of systemizing ba, but this has been disregarded as networks does not contribute to energize systemizing ba but are rather knowledge assets. Therefore, systemizing ba from a local perspective will not be discussed further.

### 5.3.2 Systemizing ba – international

The primary source of knowledge in DESMI from a systemizing, explicit-to-explicit point of view was the intranet (DESMInet) to which all interviewees agreed. The intranet provides a variety of pages which can be navigated through and is indeed a collaborative information system which facilitates for combination in SECI (Nonaka et al., 2000). The issue with the intranet however was the ease of use and up-to-date information. All interviewees pointed out that the intranet did contain a lot of information, however much of this information was outdated and contributed to confusion. In addition, the intranet was difficult to use and confusing unless you knew what you were doing due to both layout and number of places to find information. The purpose of utilizing information technology such as the intranet, is to compile and enhance the conversion process under

combination in SECI (Nonaka and Konno, 1998), not to mention that explicit knowledge should be relatively easily transmitted to a large number of people in written form through it (Nonaka et al., 2000). Not maintaining the "database" and having a somewhat "unfriendly" user interface could hamper this. One interviewee also noted that he would like to see the intranet transform into a more two-way communication tool, rather than what he described as "*transmitting and receiving*". In the context of systemizing ba, "transmitting and receiving" would be an intuitive description of what information technology should do to enhance knowledge conversion. It is however an interesting proposal that there should be a way to propose what information should be uploaded as this would probably encourage both dialogue and further systemizing.

There was also one interviewee who later said that DESMI does not have a platform to share knowledge – even though the interviewee had already listed the intranet as a knowledge sharing tool. The statement that there are no platforms to share knowledge in DESMI therefore contradicts the notion that DESMI has the intranet as a knowledge sharing tool. It can be argued that a lot of the information on the intranet is indeed just information. But depending on how decontextualized the individual is from the information it could still be utilized as knowledge based on the definition that knowledge is a personal belief towards the truth, i.e., created by the individual (Nonaka et al., 2000). As systemizing ba is, in its base form, a facilitator for making explicit-to-explicit knowledge the information on the intranet can, and most probably is, combined to create new explicit knowledge. As such, DESMI do have at least one knowledge sharing tool utilizing systemic knowledge assets, although quality of contents could be discussed.

There were also some other knowledge sharing tools which were utilized in DESMI. The second most mentioned tool was the DESMI homepage, DESMI.com. Through DESMI.com, one could find easily accessible explicit knowledge like e.g., manuals. Contrary to the intranet, DESMI.com was praised by several interviewees as easy to use as it was "[...] *much more intuitive because it's made for the customers*". This is interesting, as it gives an indication that DESMI has an outward focus much like what was seen in dialoguing ba. In terms of other knowledge sharing tools than the intranet and DESMI.com, there were no unity in the answers.

What was interesting though was that the list from DESMI headquarters compiling knowledge sharing activities/tools (attachment 4) was different from the answers from the interviewees. Of course, the interviewees had to answer on the spot and therefore would only list the most apparent to them while the list itself was compiled with more time available. By being different though, it indicates that there are different perceptions on what is knowledge sharing activities/tools in DESMI from sales and headquarters. They are however somewhat similar though as the list from headquarters lists several

points which were directly found on the intranet – just as separate subject/topics on the intranet. This strengthens the view that the intranet is the primary information technology used in DESMI and putting effort into improving its user friendliness will help DESMI supporting systemizing ba and facilitate knowledge sharing.

The above discussion mostly revolved around knowledge sharing tools, which was related to “How does DESMI systemize its explicit knowledge?”. However, the research question also asked “And do DESMI distribute this in a good way?”. Trying to answer this question, the interviewees were directly asked if DESMI was in general good at sharing knowledge internally. All six of the interviewees answered “no”, which was a clear indication that there were some opinions on this. The interviewees were asked to elaborate on their answers, and there were several reasons, shortly listed: intranet is not set up to handle it, there are no platforms to share knowledge, there is no setup for it (people doing a lot of double work without realizing it), knowledge sharing is not something that comes as second nature in DESMI, and countries do not speak with each other except to Denmark (Denmark meaning the support functions).

Reason number four and five (knowledge sharing is not something that comes as second nature in DESMI, and countries do not speak with each other except to Denmark) are not directly related to systemizing ba and the research question (i.e., *distribution*) though. However, the first and second reasons (intranet is not set up to handle it, there are no platforms to share knowledge) is very much related. These have however been discussed when looking at knowledge sharing tools. The third reason is also related, because of the notion that there is no setup for knowledge sharing – also supported by another interviewees quote: “*No one shares anything. Except if you ask for it of course.*”. As previously mentioned during especially originating ba, DESMI has a function called sales support. It is this function the interviewee indirectly related the answer to. As many of the interviewees pointed out, much of the knowledge in DESMI should be possible to attain from this department when asked where knowledge could be found. However, utilizing this department in a distributing way was not done – possibly due to the bypassing issue as previously discussed.

Further, when talking with the interviewees, the terminology “*they*” was used all the time when discussing knowledge sharing, which was mostly talked about in a negative sense. Although never explicitly stated by anyone, it certainly implied that sharing knowledge (both in the sense if DESMI is good at it and if DESMI distributes it) was something which was expected to be handled centrally in DESMI/HQ management level (“*they*”), but currently was not.

### 5.3.3 Systemizing ba – Summary

Under systemizing ba, it was found that DESMI utilized the intranet mostly when talking about knowledge sharing tools and systemizing knowledge. While the intranet did contain a lot of information, there were issues with the ease of use and how updated this information was. The DESMI homepage, DESMI.com, was also utilized as a knowledge sharing tool, and was generally found to be easier to use due to it being made for the customers.

In terms of distributing this knowledge, it was pointed out that the intranet was not handled to do so. It was also found that there was no official setup in DESMI for knowledge sharing due to a constant use of “*they*” (i.e., HQ management) when talking about knowledge sharing/distribution, or lack thereof. There were expectations that the sales support department could, and possibly should, have the distribution job. But again, it was no official way of distributing knowledge.

## 5.4 Exercising ba

Under exercising ba, there were four main topics which were explored – learning by doing, mentoring, courses, and transfers in DESMI. These topics were related to the research question “Is DESMI encouraging employees to utilize its collective company knowledge?”.

Exercising ba is related to the SECI mode internalization. As such it is mostly on the individual level, as the individual will embody the collective explicit knowledge and make it tacit (Nonaka et al., 2000) by “completing” the knowledge spiral. International and local will therefore not have their own sub-chapters here. As mentioned earlier, the topics used under exercising ba were more indirect/proxy than for the other research questions.

One goal was to try to uncover what various personal goals set during appraisals would mean for the interviewees personally and for DESMI as a company. The empirical data gathered from questions on appraisals did not uncover any meaningful in the context of exercising ba, as the purpose of setting personal goals during appraisals was not much reflected upon by the interviewees. As such, the sub-topic on appraisals is discarded, but is still present in the results chapter.

### 5.4.1 Exercising ba – discussion

It is through actions, mistakes, experience etc. the individual will embody the explicit knowledge and make it tacit (Nonaka et al., 2000). The main topics under exercising ba were therefore very much related to what could sort of collectively be called “internal training” and/or “self-development”.

One of the main elements of internalization is learning by doing (Nonaka and Takeuchi, 1995). Learning by doing in itself is not part of exercising ba but part of internalization in the SECI model. Still, the interviewees were asked what they regarded as learning by doing in DESMI to see what the subjective perception on the topic was. The general answer to what learning by doing was, was in short, the day-to-day work. There were however some additional inputs to this as only day-to-day activities did not cover it fully. For instance, learning by doing entailed taking risks, not being afraid of making mistakes and stepping out of your comfort zone – relating learning by doing to both contingent and collective tacit knowledge. These answers were very much akin “the self” and based on own perception. When the interviewees were asked if there were any formal learning by doing activities put forth by DESMI, the answer was “no” and some said that DESMI should probably do more in learning by doing. As learning by doing is contributed by both personal experiences and simulation/experimentation (Nonaka and Takeuchi, 1995), it has an impact on the collective knowledge when going through the knowledge spiral

(from individual, back to individual). That DESMI should “probably do more” is therefore interesting in this sense.

Mentoring was another topic which was discussed, as it was somewhat related to the learning-by-doing or “internal training” – but more in the facilitating/“learning-by-doing how” sense. It was found that in DESMI, there was mentoring. However, this was mentoring in the sense that it was training new employees and never for more senior/established employees. Most of the interviewees had been mentoring other employees at some point. But when asking if this was formalized/standardized in any way there was not much of it because, as one interviewee put it: “[...] *it was just something that was, I guess, expected*”. Similarly, another interviewee said: “*I was just told to do some of the training and how it was done was up to me. [...]. I had no guidelines or something*”. Why are these quotes important to exercising ba? These quotes tell that the knowledge assets, which are inputs and moderators to ba, are not utilized in a uniform way in DESMI. For instance, routine knowledge assets are embedded routines/practices – they can be e.g., know-how or organizational routine (Nonaka et al., 2000). If the training/mentoring of new employees is not standardized, this impacts the input to exercising ba. Although the interviewees said they felt the training/mentoring went well, they did not receive any guidelines, potentially missing an input on different organizational routines established in DESMI. Still, mentoring is considered something which contributes to exercising ba as it supports re-experience of others experience.

The interviewees were also asked if they themselves had been subject to mentoring. These answers were similar to the above – only when they started in DESMI. Some interviewees had never been subject to mentoring either as they were considered “senior” when they started or had been in the company for too long. This again reinforces the notion that there are aspects of exercising ba in DESMI which are not utilized. There was however a little adjustment to this, as the ones who had been subject to mentoring mentioned the DESMI introduction week.

The DESMI introduction week can be categorized under courses in DESMI. The purpose of the introduction week is that new employees should meet and see different parts of the organization in Denmark. The introduction week has already been mentioned under originating ba but could also be placed under exercising ba. This is due to the very nature of its purpose as it is there to support/facilitate the conversion from collective tacit knowledge to personal tacit knowledge through the knowledge spiral.

When further discussing courses in DESMI, the interviewees were asked if courses were encouraged – be it internal or external. The answers were somewhat mixed, as some said it was encouraged, others claimed it was encouraged through being mandatory.

What was common though was that the interviewees held the impression that courses should bring back something to benefit DESMI. This is positive for exercising *ba*, as this would enhance the self-development, furthering an embodiment of explicit knowledge through being converted to tacit knowledge. However, courses were often something which had to be sought out by the interviewees themselves and not directly encouraged by DESMI as the internal ones were few and far between. Participating in courses can therefore be seen as semi-encouraged by DESMI.

Transfers were lastly discussed with the interviewees. The purpose of asking about transfers was that transfers bring new context to an employee's workday, and potentially trigger "a new round" of the other topics from exercising *ba* (learning by doing, mentoring, courses). It was found that transfers seldom happen in DESMI. This goes back to what was discussed in dialoguing *ba* – the offices are small. Therefore, transfers are not opportunities which presents themselves regularly in DESMI, unless you work at one of the bigger offices (e.g., Denmark). Promotions were also something which was discussed, but these were also somewhat dependent on the fact that the offices were small, and promotions were rare outside of the bigger offices. The topic on transfers could therefore also have been discarded (like appraisals) were it not for that competency mapping was brought up by two of the interviewees. Now, competency mapping was not something which existed in DESMI. However, in an exercising *ba* point of view it should. While this mapping not necessarily *is* exercising *ba*, it certainly makes explicit the competence of the employees. It is through exercising *ba* that individuals develop e.g., skills which are no longer conscious (Nonaka et al. 2000). These skills very well could manifest themselves and making the individual appearing knowledgeable. Through competency mapping, this could become clearer and DESMI could utilize this.

#### 5.4.2 Exercising *ba* – summary

The line of questioning for exercising *ba* was made as indirect/proxy questions on different topics. In DESMI, there is an understanding that learning by doing is the regular workday, but with the perspective that one must "be bold" (take risks, not be afraid to make mistakes and stepping out of comfort zones). To further encourage learning by doing, mentoring, courses and transfers were looked at.

There is mentoring in DESMI, however it is only for new employees and does not follow a set of rules or guidelines. Not setting expectations to this from centrally in DESMI could inadvertently impact exercising *ba*. Courses are encouraged in DESMI but should feed back to the company. It is however often the employee who must seek out the courses. Courses feeding back to DESMI is a positive moderator to exercising *ba*, as this enhances the collective company knowledge which ultimately feeds back to the individuals again. A positive course which was implemented in DESMI was the introduction week for all new



employees. This course aims to introduce new employees to DESMI and sets the premise for further utilization of collective knowledge in DESMI.

Transfers and promotions were not common in the smaller DESMI offices. Competency mappings were also not made. However, competency mapping would make explicit what the employees are good at, potentially making it easier to utilize them as it creates an easy overview of who know what.

## 5.5 Organizational knowing

The last research question of this thesis was related to organizational knowing and was the following: "Are the practices of organizational knowing facilitated and repeatedly enacted in DESMI?". Organizational knowing is here understood as in a European context and will be discussed as such.

As mentioned earlier in this thesis, the practices of organizational knowing were not directly asked about during the interviews but would rather be looked at from the total collected empirical data. It was also found that the practices of organizational knowing were similar to the concepts of ba. Organizational knowing and SECI/ba do however belong in two different categories on how knowledge should be defined – the epistemology of practice and the epistemology of possession. The two definitions were found to be compatible, further both the practices and ba are *facilitators* for knowledge which share significant similarities. The empirical data researched and discussions from ba will therefore be used when discussing the organizational knowing practices.

### 5.5.1 Organizational knowing – practice of sharing identity

The practice of sharing identity can be shortly described as "knowing the organization" and is what allows members of an organization to identify through a common way of thinking (Orlikowski, 2002). Closely related to this were therefore the talks related to originating and dialoguing ba during the interviews.

The "point" of practice of sharing identity is that members should identify with each other. During the interviews it was found that the "common" theme in DESMI was that each country worked for themselves, being somewhat isolated. This does not mean that they necessarily do not identify with DESMI. For instance, there was a widespread practice that the individuals bypassed formal networks. While this can be discussed as something negative, it will not when relating it to sharing identity. Since the "bypass" case was so widespread, each interviewee had a somewhat broad informal network internally in DESMI. Through this network, this dialogue, there is a possibility that the mental models of each participant started to externalize and be shared. This externalization could for instance be materialized through common vocabulary despite different languages (Orlikowski, 2002). What really makes the informal network a common denominator for practice of sharing identity though is the notion that this practice creates a framework for making sense of each other's technical requirements (Orlikowski, 2002). The reason for bypassing official channels was mainly to get answers quick. This indicates that the interviewees knew what they were after, and who they would contact – and as such had this framework cognitively shared with the specific contact persons.

There are however some disruptions to the practice of sharing identity. While the interviewees had a broad informal network, they did not share much dialogue with the other sales offices, mainly just with key personnel from the headquarters. As such, shared identity with their peers in other countries can be somewhat doubted. Still, as “everyone” were utilizing informal networks, chances are that the shared externalizations very much stems from the headquarters. Thus, the identity of DESMI is sourced from the headquarters.

### 5.5.2 Organizational knowing – practice of interacting face-to-face

The practice of interacting face-to-face is shortly described as “knowing the other players”. This practice is very similar to originating ba as they both support the emotional aspect of human interaction. To illustrate, Orlikowski (2002) mentions emotions such as trust, respect, and commitment while Nonaka et al., (2000) mentions emotions such as care, love, trust, and commitment. In addition, both mention actual physical interaction between participants as an important factor.

Both physical interaction and the emotion trust were explored with the interviewees and discussed much under originating ba. They will therefore not be discussed much here. However, the key findings on physical interaction in DESMI was that it was somewhat lacking for European employees. There were of course some meetups, but these occasions were rare. There are opportunities for DESMI to implement meetups though through actively facilitating for this (after the pandemic). On the subject of “global” trust between DESMI employees, it was found that it should be categorized between formal and informal networks, where trust was somewhat low with the formal network and high with the informal network.

### 5.5.3 Organizational knowing – practice of aligning effort

The practice of aligning effort is shortly described as “knowing how to coordinate across time and space”. This practice is somewhat related systemizing ba as they both facilitate for a systematic approach. The similarities are however not that close, and discussion on the practice of aligning effort will therefore draw on several other aspects from the empirical data as well.

Again, the bypassing of official functions is relevant. The practice of aligning effort is related to coordination of activities and allocating resources (Orlikowski, 2002). DESMI has made an apparatus for this – the sales support department. However, this department is often bypassed in practice. This is a hinderance to aligning efforts across the borders as the sales support department really is *support for sales*, meaning they are able to align efforts as described above since much of their work is exactly this. In the discussion of systemizing ba, it was also mentioned that there was an expectation that

the sales support department could, and possibly should, have a distribution job for knowledge sharing. Elongating “distribution” to also include aligning efforts, it is seen that a practice of bypassing combined with an expectation of distribution, is disjoint. So, while DESMI has a practice of aligning efforts set up, it is not utilized.

#### 5.5.4 Organizational knowing – practice of learning by doing

The practice of learning by doing is shortly described as “knowing how to develop capabilities”. This practice can be linked to the questioning on exercising ba. However, under exercising ba, these questions were more proxies. Under practice of learning by doing the questions can be seen as directly related as the practice describes individual development, active mentoring, promotions etc. These features of the practice draw from the human capital and create organizational memory (Orlikowski, 2002).

These subjects were covered during the interviews and much of the discussion related to this is present in the discussion on exercising ba. However, the key findings were that DESMI supports development in the sense that courses were semi-encouraged. This was because courses often were something which was to be found by the individual employee, not by DESMI. It was also understood that the courses should feed back to DESMI.

Mentoring was found to be present in DESMI, however not really in an “active” sense. It was more related to training of new employees, which also not standardized in DESMI. Mentoring of other, more senior/established colleagues, were not present other than the occasional support – which cannot be said is active mentoring.

The topic of promotions or transfers as was the main focus during the interviews, it was found that due to the small size of the offices, there was not much of it as opportunities did not present themselves regularly. The exception here would only be the main offices.

By looking at the above practices, and how they would contribute to the organizational memory, it is evident that there are some practices which would contribute organizational knowing. It does however appear that the directly controllable practices (courses/self-development and mentoring), are only semi-introduced in DESMI. Applying the practices more systematic could potentially prove beneficial to enhancing a deeper experience and/or expertise in the workforce. Promotions/transfers on the other hand are not that controllable as they are static due to circumstances – which DESMI hardly is at fault for not being able to comply with/introduce.

#### 5.5.5 Organizational knowing – practice of supporting participants

The practice of supporting participants is shortly described as “knowing how to innovate.”. This practice relies on creativity through diversity of shared

dialogue/participation, thus being innovative in nature (Orlikowski, 2002). It is by actively dispersing participation across borders this practice is made global. The practice of supporting participants is related to the discussion on originating ba and dialoguing ba, as interaction and dialogue between countries were explored there.

In the case of DESMI, there is some creativity through diversity, but not that much of it. This can be presented by re quoting one of the interviewees: "*[...] we haven't a lot of communication between us.*". In this context, the interviewee was talking about communication between countries, not country to the headquarters. Or as another interviewee said: "*[...] we tend to kind of work in small silos within our business units. And if we can't get the answer within our business unit, we don't look beyond Denmark.*". Yet again, it is emphasized that countries communicate with the headquarters and not each other. It has however been found that DESMI, as in the sales department, is very much externally oriented towards customers and not too much inward oriented. Therefore, the practice of supporting participants might not be that relevant after all as involving participants from "around the world" for all kinds of external matters could be argued to be counterproductive. On the other hand, there are certainly cases where the sales department need support. This support function exists in the sales support department, which is global due to it including employees from around the world. It can therefore be said that the practice of supporting participants exist in DESMI, but with the bypassing issue as mentioned on multiple occasions.

### 5.5.6 Organizational knowing – summary

Organizational knowing consists of five practices. The first practice, sharing identity, was found to exist in the form of informal networking and sharing of mental models with these. However, the practice was found to exist not because countries communicated with each other, but rather everyone communicating with the headquarters.

The second practice, interacting face-to-face, was very related to originating ba. Trust between international employees was found to exist in two forms – trust in the informal network and trust in the formal network, where the former is high, and the latter is somewhat low. Physical interaction between countries was not common, although DESMI has the opportunity to actively facilitate this after the pandemic.

The third practice, aligning effort, was implemented in DESMI through the sales support department. However, implemented does not mean utilized, as the sales support department is often bypassed and the expectations to the department are somewhat disjointed.

The fourth practice, learning by doing, was relatable to exercising ba. Some aspects of these practices were explored, and it was found that two of the practices (courses/self-

development and mentoring) were at least semi-introduced in DESMI and applying a more systematic approach to them was possible. Other aspects (promotions/transfers) were not common in DESMI as circumstances do not allow for it.

The fifth practice, supporting participants, was found to exist in DESMI, but to a lesser extent. This was due to DESMI being externally oriented. What made this practice exist in DESMI was mostly due to the sales support department being a global entity.

Organizational knowing, with its five practices, were on a general summary found to be existing in DESMI, but somewhat incomplete and not reinforced/actively implemented in the DESMI way of working. By implementing a more focused approach to the some of the practices, there could be beneficial outcomes to the distributed operations in DESMI.

## 6 Conclusion

It was pointed out in DESMI's own strategy document that knowledge sharing across countries might be a potential weakness. This thesis has therefore looked into how DESMI shares knowledge now, with the aim to find out how DESMI can facilitate for knowledge sharing across countries in the future through the thesis question "How can DESMI facilitate for knowledge sharing across countries?". The term "across countries" is specified as Marine & Offshore sales segment in Europe with related support functions.

The research concludes that knowledge sharing across countries in DESMI is not very facilitated on most aspects being looked into. These aspects, along with how knowledge sharing can be facilitated in the future, will now be presented through the research questions.

### 6.1 Originating ba – conclusion

On the analysis "How does DESMI facilitate for colleagues getting to know each other?" relating to originating ba, the main challenge identified was that the European colleagues in DESMI did not get the opportunity to meet. While local offices remain small and acted as natural "meeting places" in the different countries, creating its own "facilitation for familiarity", the European colleagues remained somewhat of an unknown. Some opportunities for European peers to meet are present though. For instance, meeting through exhibitions or arranging a meeting with all European M&O sales personnel creates a good basis for everyone to get to know each other. Although hindered now due to the pandemic, it is a very simple, but effective way to enhance knowledge sharing in DESMI.

### 6.2 Dialoguing ba – conclusion

The next analysis was on "Does DESMI create an arena for dialogue and does DESMI document this experience?", relating to dialoguing ba. On this subject, there were two main challenges. The first was that it does not exist any formal arena for dialogue in DESMI. A lot of the dialogue which was happening was through either informal networks or externally towards customers. The other main challenge was that DESMI did not document or formalize much, meaning that potentially much of the knowledge retained in the workforce is not made explicit and easily shared with others. It is however concluded that the DESMI workforce has a lot of knowledge, and it is therefore a recommendation that official arenas for dialogue be created to utilize this. It should be

kept in mind that dialogue can be defined as: "*listening and contributing to the benefit of all participants*" (Nonaka and Konno, 1998, p. 44) and that there might be a challenge in that strong minds in DESMI can potentially disrupt this. In terms of formalizing/ documenting it is something which is hard to say what can be done with as it is implied that not doing it is a part of the "DESMI culture". However, one simple recommendation is that at least all documentation is written in English when it can be.

### 6.3 Systemizing ba – conclusion

The analysis of "How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way?" relates to systemizing ba. It was found that DESMI systemizes its knowledge mainly through the intranet and thus provides an information system for which to systemize explicit knowledge. There were however two main challenges identified. The first was that the intranet was somewhat difficult to use and stored a lot of old information. The DESMI homepage on the other hand was often mentioned as easy to use as it was made for the customers. It is therefore recommended that the intranet receives a clean-up of old information and possibly an overhaul of the layout to make it more user-friendly. As the DESMI homepage was frequently mentioned as user friendly, this might be a starting point for a template.

The second challenge was that there was an impression among the workforce that DESMI do not distribute knowledge actively and that this responsibility falls on DESMI headquarters. It was however some expectations that the sales support department should, and could, handle the distribution of knowledge in DESMI. The opportunity to handle proper distribution of knowledge has therefore presented itself due to these expectations. The recommended is then that it is at least explored whether the sales support department can handle this distribution job not. It should be noted however that the sales support department is often bypassed in DESMI, which could present other challenges.

### 6.4 Exercising ba – conclusion

The analysis of "Is DESMI encouraging employees to utilize its collective company knowledge?" relates to exercising ba. The conclusion on this question is a tentative yes. The reason for is the various small things which accumulates to a yes. For instance, there is an understanding in the workforce that courses are encouraged but should feed back to DESMI. There is also the implementation of the DESMI introduction week, which is a great way to introduce new employees to some of the collective knowledge. Promotions or transfers is not something that is possible due to the sizes of the offices, and DESMI can hardly be held accountable for this.



The main challenge identified here though is the subject on mentoring. While mentoring exists when new employees begin (although somewhat random), it does not exist for more senior/established employees. It is therefore recommended that the possibility for a mentor arrangement is explored to facilitate further knowledge sharing. This would probably not be on an international level though unless it is arranged for international "use". Some competency mapping/successor planning could also be beneficial. While it necessarily contributes directly to exercising ba, it could provide an easy overview for DESMI on who knows what.

## 6.5 Organizational knowing – conclusion

The analysis of "Are the practices of organizational knowing facilitated and repeatedly enacted in DESMI?" relates to organizational knowing and were similar to the various ba's. It was found that DESMI does to some extent follow the practices, however DESMI do not repeatedly (or on a regular basis) enact them. There are mainly two recommendations here. The first is to look at the other recommendations listed under the various ba's. As the basic principles between the practices and ba are similar, many of the ba recommendations will also impact the practices positively. The other recommendation is that organizational knowing is further explored by DESMI. The practices have been found to enhance geographically dispersed organizations in their everyday conduct of business and communication and presents an opportunity for DESMI to utilize them further.

## 6.6 End notes

Although the conclusion of the various topics explored in this thesis might seem somewhat harsh, many of the recommended actions for improvement are somewhat simple to go through with. DESMI is therefore in a good position to use these opportunities, and at the same time increase the knowledge sharing across countries (which was listed as a weakness in the DESMI strategy). Maybe then the next strategy document will list knowledge sharing across countries as a strength?

It should be noted though that many aspects of knowledge and knowledge sharing might not have been explored in this thesis. A proper investigation on global knowledge sharing in DESMI, not just European M&O sales, might reveal different answers than presented here and as such is a recommendation for further research. Specifically, the topics of epistemology of practice and organizational knowing practices would be recommended as these views were only partially explored in this thesis.

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# Attachments

## Attachment 1 – Interview guide

The following text is the interview guide used during the interviews.

### Introduction

- General demography (age, country, how long you've been with DESMI)
- Can you list examples of what you see as knowledge sharing in DESMI?
- Where you fetch the most knowledge? In your own country, or by contacting other countries?
  - Elaborate

### How does DESMI facilitate for colleagues getting to know each other?

- Do you think DESMI facilitates for colleagues to get to know each other?
  - In what ways?
- How often have you participated in physical gatherings which DESMI has arranged, and several countries have participated?
  - Excluding exhibitions – purely internal gatherings
- How often have you participated in exhibitions (or similar) where several countries have participated?
  - Do you spend time with your colleagues afterwards?
  - Do you keep in touch with these colleagues?
- If you were to contact another country for any reason (for instance you know that this other country is good at something you want to know about), how would you contact them?
- Do you feel that you have a general overview of what other countries are specifically doing/good at? This could be specific product knowledge, procedures, application knowledge etc.
  - How would you go about in finding this out?
- Trust
  - Do you find it easy to ask for help from your colleagues in your country?
  - In your view – do you find that your colleagues are willing to share “tricks of the trade” with you?
    - *If elaboration needed* – if you ask a question, do you get the answer, do you get the answer with an explanation, or do you not get an answer at all?

- Do you find it easy to ask for help from your colleagues in another country?
- In your view – do you find that your colleagues abroad are willing to share “tricks of the trade” with you?
- If the tables were turned – do you feel that you yourself would be willing to share “tricks of the trade”?

## Does DESMI create an arena for dialogue and does DESMI document this experience?

- Do you find that there is an arena in DESMI for starting dialogues?
  - Can you give an example?
  - Do you feel that you can participate freely and that you are heard in these arenas?
- Have you ever participated in internal discussions where your experiences have been important?
  - Who do you usually participate in these discussions with? Colleagues in your country or from other countries?
    - Which other countries would that be most often?
  - Whenever these discussions are finished – how are these discussions most often handled afterwards? Formalized in any way?
- Let’s say you receive a call from a colleague asking for your input in something you are experienced with – can you tell me how you would usually share this?
  - How often would this be written down afterwards?
- Do you ever receive requests from either HQ or other countries where you are asked to provide your inputs?
- Do you find that dialogue/discussions are created reactively or proactively?
  - Think of one example of each – how did this look?
- Do you know how other countries share their knowledge?

## How does DESMI systemize its explicit knowledge? And do DESMI distribute this in a good way?

- If you were presented with a new issue – how would you go about finding the knowledge needed to solve this issue?
- How would you go about finding internal knowledge?

- Where do you find it (alternatively do you ask specific persons)?
- Do you feel that DESMI is generally good at sharing knowledge internally?
  - Why, why not?
- Do you feel that you have a good overview of which tools DESMI uses to share knowledge?
  - What are these tools?
  - Are these tools easy to use?

## Is DESMI encouraging employees to utilize its collective company knowledge?

- What do you regard as "learning by doing" within DESMI?
  - Are these activities formalized in any way?
- Have you yourself been part of and/or responsible for guiding or mentoring employees?
  - How do you feel this was executed?
- Have you ever been the subject for guiding or mentoring by other colleagues?
  - How do you feel this was executed?
- How does DESMI, either your country or HQ, encourage you to take any courses (internal and external)?
  - Are these courses something you are expected to share with other employees?
- Do you have appraisals in your country where you set goals for the next year?
  - What do you feel is the purpose of reaching these goals?
- Do you feel that DESMI encourages transfers internally to other positions?
  - Why/why not?
  - How does this look in practice? Why would a transfer happen?

### End

- Is there anything else in terms of knowledge sharing in DESMI you feel we have not discussed/you would like to elaborate more on?
- Is it ok if I contact you at a later stage to either clarify something or ask some follow-up questions?

## Attachment 2 – Interview invitation

The following text is the first email sent to potential interview subjects asking them to participate.

Dear [colleague],

I am currently taking a master's degree part-time 'on the side', called management of demanding marine operations at NTNU in Norway (Management of Demanding Marine Operations - Master's degree programme - 2 years - Ålesund - NTNU).

Now, I am in the process of writing my master thesis together with DESMI/DPTA. The thesis question is "*How can DESMI facilitate for knowledge sharing across countries?*".

In relation to the thesis, I would need to interview a couple of my colleagues. During my selection, you were one of the colleagues I was hoping to do an interview of. I therefore invite you to participate in an interview with myself.

Some general information:

- The interview aims at uncovering what we do at DESMI now, and what we might improve for the future
  - This means I will ask you about your workday at DESMI and how you conduct it
- The interview will be recorded
  - Sound only
  - Transcript of the recording will be available to you upon request
- Preferably, this interview would have been face-to-face. Unfortunately, current circumstances does not allow for this
  - Therefore, the interview will be conducted through Teams – meaning you need Teams and a microphone
  - I prefer if your camera is on so that I can see you, but this is voluntary
- No prior preparation is needed from your end, only your participation

Privacy:

All personal information will be treated confidentially. Only myself and my supervisor from my university will know who you are and that you participated.

Your answers will be used in the thesis. However, no single individual will be recognizable in the finished thesis.

As this interview is voluntary, you are free to withdraw yourself from participating further if you wish. You do not need to state any reason for doing so.

Please note that I plan to set aside 2 hours for the interview (might not take that long though). Doing the interview during working hours is approved by DPTA, but keep in mind that 'the task comes first'. If your workload is high/schedule is tight, you might need to set aside your own spare time if you wish to participate. This consideration is at your discretion.

I plan to conduct the interview next week or the week after and would highly appreciate your feedback as soon as possible, including date and time which suits you (I can also propose a time).

Looking forward to your reply, and do not hesitate to contact me directly if you have any questions/need more information before giving your answer!

Med vennlig hilsen / Best regards  
Marius Berg Rygvold



## Attachment 3 – Additional email to the interview invitation

The following text was a follow-up email to the invitation for interview. This email was originally sent along with a proposal for date and time for the interview. This information has been deleted.

Dear [colleague],

Would like to correct something:

I said that there would be audio recording only. However, it is not possible to record audio only in Teams – meaning that the recording will be video + audio.

As stated initially, having your camera on is up to you. I will use the audio only regardless.

Med vennlig hilsen / Best regards  
Marius Berg Rygvold

## Attachment 4 – Knowledge sharing activities in DESMI

The following text is from an email sent from DESMI HQ containing some activities/tools implemented in DESMI for knowledge and/or information sharing. The list is not an official DESMI list and might not be exhaustive. Text annotated by [DESMInet] are hyperlinks to the DESMI intranet. Links themselves have been removed.

Here are some of the activities we do now in DESMI:

- DESMINet (our intranet, has LOTS of information – but maybe difficult to navigate in due to the extreme load of information) – but News, Managers blog, new employees etc. from the front page is a good “starting point” for news sharing
- D-Mail – our monthly newsletter
- Website (news, articles, case stories etc.)
- LinkedIn (Social media posts) with general news from our daily work around the world
- Articles – expert articles made together with external journalist – share knowledge with customers / readers – great advises on what to think about when selecting a pump solution etc.
- News / press releases
- Weekly / Monthly meetings with various teams in the organization
- Sales training seminars (1<sup>st</sup> one end March 2021)
- Online academy training
- BRL/Clarkson news (within marine) – news about newbuildings etc. around the world [DESMInet]
- Market data (news) [DESMInet]
- Competitor analysis [DESMInet]
- Expert / application forums (within the industry segment we have forums within the applications chocolate, AquaCulture, refrigeration and EPC – take a look under Application Forum at this page [DESMInet])
- Visit report [DESMInet]
- Marketing accomplishments [DESMInet]
- Markets information / DESMI Group company strategies and accomplishments [DESMInet]

There are probably even more in the toolbox for sharing knowledge – but this is what I just quickly listed to start from.

Hope you can use it.

