



# Master's degree thesis

**LOG950 Logistics**

**Outsourcing - Considerations and experiences in the  
maritime industry in Møre & Romsdal**

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## **Abstract**

In the last decades outsourcing has become a well know phenomenon for companies and industries, making it a possible business decision many companies consider. In recent time, the background for taking an outsourcing decision seems to have evolved from being based on mainly cost considerations towards being a more strategic decision with a focus on core competencies. This thesis aims to explore whether this is applicable for the maritime industry in Møre & Romsdal by exploring their view on outsourcing core competencies in addition to look at the industry's main considerations, relative to risks and benefits associated with outsourcing, and their experiences.

Data was collected through the use of a questionnaire and interviews. The questions were constructed to explore the outsourcing tendencies in the maritime industry in Møre & Romsdal with a focus on their decisions and their considerations of risks and benefits associated with outsourcing. The questionnaire was sent to possible respondents by e-mail, giving them the option of answering electronically or through an interview. For the respondents that chose interviews, supplementary information was acquired in addition to them answering the questionnaire. This information provided a better basis for interpreting the answers given in the questionnaire and a deeper insight into the industry.

The results from the sample indicate that the maritime industry in Møre & Romsdal outsource parts of their core competencies, but keeps part of the core in-house in order to retain the competitive advantage their knowledge provides. This is supported by the results indicating that the respondents outsource to focus on their core competencies, in addition to the respondents fearing the loss of knowledge when outsourcing.

Further, the results indicate that cost savings is still of high consideration, but it is not the sole reason why the respondents choose to outsource. This is supported by the respondents' choice of countries when outsourcing, where it is shown that a combination of high- and low-cost countries are being used and considered. Other considered factors that stood out, concerning the risks and benefits with outsourcing, was the fear of poor quality and the benefit of getting higher flexibility.

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# 1 Introduction

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*This chapter presents the background and motivation for writing this thesis. It also presents the research questions developed to guide the exploration.*

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## **1.1 Background and motivation**

Outsourcing is a well-known phenomenon, which originated in the 1950's and has become a more widely used strategy for organizations in the last decades (Hätonen and Erikson, 2009). The maritime industry in Møre & Romsdal is one of the industries that have made use of this strategy, and because of limited research on the maritime industry in Møre & Romsdal related to outsourcing, it is believed that to study outsourcing from this perspective could be an interesting approach. Based on this, the aim of this study is to explore the outsourcing tendencies in the maritime industry in Møre & Romsdal, looking at what decisions the industry have made and how they consider different aspects associated with outsourcing.

Based on earlier research, it seems as outsourcing has evolved from being a pure cost decision to becoming more of a strategic decision (Hätonen and Erikson, 2009; Kremic et al., 2006). Caniels and Roeleveld (2009) and Kremic et al (2006) argue that by looking at outsourcing as a strategic choice, it has become an increased focus on core competencies and whether or not these should be outsourced. The main opinion here seems to be that core competencies should be kept in-house. This is supported by the resource based view which emphasizes the increased focus on keeping the core competencies in-house, while outsourcing the product and services that is not attached to the core competencies (Espino-Rodríguez and Padrón-Robaina, 2006).

Since every business decision involve risks (Johnson et al, 2011), a company expose themselves of several risks when deciding to outsource. Earlier outsourcing literature has attempted to distinguished specific risks with outsourcing in different industries, and these will be part of the research foundation for this thesis. The challenge with risk will be to continually assess the different risks and balance the possible risks up against the opportunities for reward (Johnson et al, 2011). Because of this, this thesis will also consider the possible benefits with outsourcing that has been distinguished in earlier research.



The literature used as a foundation for this thesis have considered outsourcing in the perspective of different industries, but there seems to be limited research on the subject towards the maritime industry, especially on the maritime industry in Møre & Romsdal. Based on this, it is believed that looking at outsourcing and the risks associated with it, in the perspective of the maritime industry in Møre & Romsdal, will provide a different view on outsourcing that has not been covered in earlier literature.

To be able to explore the outsourcing strategy for the maritime industry in Møre & Romsdal, and how they consider the different risks and benefits associated with this, a questionnaire have been used as the main source for information. The research questions used to guide this exploration will be presented in section 1.2.

### ***1.2 Research questions***

To guide the exploration of whether the outsourcing tendencies in the maritime industry in Møre & Romsdal challenge the existing outsourcing literature, and explore the companies' considerations and experiences, the following research questions were developed:

- Do the outsourcing tendencies in the maritime industry in Møre & Romsdal challenge the theory, in the sense that the industry bases their decisions on cost, in addition to outsource core competencies?
  - What are the industry's main considerations, concerning risks and benefits, when taking an outsourcing decision?
  - What experiences have the industry made regarding their outsourcing decisions?

## 2 Industry

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*This chapter provides an overview of the maritime industry. The first section is a general view on the industry in a global perspective, while the second section describes the maritime industry in Norway, with a main focus on Møre & Romsdal.*

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### **2.1 The maritime industry**

The maritime industry is in this thesis defined as:

*“all those who design, build, and repair ships, in addition to the companies that deliver supplies or specialized services to them”* (Adapted from Jacobsen, 2011).

Some of the statistics used in this chapter is based on somewhat wider definitions of the term “maritime industry”, but is still relevant in order to get an understanding of the industry.

#### **2.1.1 Challenges in the maritime industry**

In a global perspective the maritime industry, and especially the shipyards, has faced several crises and challenges over the years. The first crises arose from overcapacity after World War 1, lasting from 1920-1940. This crisis got triggered by the Great Depression in 1930 where undermined demand resulted in a severe drop of 83% on the shipbuilding output from 1930-1933. These two crisis where followed by the oil crises in 1973, which continued throughout 1987. During this period, the trade growth was slow and unpredictable, and the shipyards’ overcapacity was accelerated by South Korea entering the market as a major shipbuilder. The overcapacity reached a peak at 50-100% in 1975, leading to shipyards closing, which again resulted in a reduction on 60% in the output towards 1979. The result of this was a severe pressure on the shipbuilding prices, forcing the shipyards to decrease their output, which in turn lead to the output in 1987 being the lowest since 1962 (ECORYS, 2009).

The latest crisis that has challenged the maritime industry was the financial crisis, which was an international recession that started around 2008. The effect of this crisis and a closer look on crisis affecting the Norwegian maritime industry will be more thoroughly discussed in section 2.2.

### **2.1.2 Development in the maritime industry**

No more than thirty years ago, most of the work related to the shipbuilding process was performed by the shipyards themselves, but in later years there seems to have been an increasing trend towards outsourcing and subcontracting of activities. In 2009, 50-70% of the value added for shipyards mainly came from external subcontractors and suppliers. This means that the role for marine equipment manufacturers has become more important, and equipment suppliers and shipyards have grown closer ties. This trend is expected to evolve in the future as modern shipyards becomes a final assembly facility that handles managements, sales, and coordinating of logistics, while outsourcing an increasing number of elements related to the outfitting (ECORYS, 2009).

Korean, Japanese and Chinese shipyards have an overall dominance in today's maritime industry, but European companies are still dominant in a few specialized market segments. Since around 1955, it seems as Europe has taken a specializations-strategy, having a great focus on innovation and new product development, instead of having a low cost strategy. Examples of segments where Europe have specialized, and are dominant, is cruise vessels, where they have a 99% market share, and offshore vessels, where they have a 43% market share. These markets are characterized by high degree of specialization, high-tech qualities, and complex production processes (ECORYS, 2009).

Compared to competitors located in Asia, European companies in general have higher labor costs. Due to the high degree of specialization within high value added segments, in addition to higher degree of automation to improve facilities and labor productivity, the high labor costs seems to be less of an issue for European shipbuilding in the future (ECORYS, 2009).

## ***2.2 The maritime industry in Norway***

Shipping and shipbuilding are of the oldest industries in Norway. The long coastline and the deep fjords made it natural to transport passengers and goods by sea and because of the difficulties with transport on land, the many and long sea routes were often the fastest and easiest way to travel. In addition to the accessibility to the sea, fishing was the foundation of livelihood for parts of the population in Norway. This created a market for shipbuilding and other services related to this, which became the foundation for the maritime industry in Norway (Jacobsen, 2011; Rederi, 2012).

From 1988 to 2008 the maritime industry in Norway has been through five crises. The main periods for the first four crises were 1987/88, 1991-1993, 1998-1999 and 2002-2004, while the last was the financial crisis that arose in 2008. The shipbuilding industry was affected the most of the crisis in 1992/93 and 2003/2004 (Hervik et al, 2009).

During the maritime industry's history the industry have been exposed to demand fluctuations. These demand fluctuations are due to for instance international business cycles, changes in oil prices, changes in regulatory framework, and the overall ability to compete on cost. One effect of these demand fluctuations was a quite large workforce reduction at the shipyards, in the period 1998-2002 (Hervik, 2003).

The financial crisis arose in 2008 after the industry experiencing a boom in new orders in the period 2004-2008. This crisis created uncertainty in cases associated with the ship owners' ability to finance new constructions of ships where the ship had no assignments when completed, and in cases where the shipyard and supplier could have problems financing their part of the projects (Hervik et al, 2009). Severe falls in rate-values, stock prices, and value of vessels, in addition to tighter funding opportunities, decrease in investments, and cancellations of orders were typical consequences during this period (Stortinget, 2009).

Because of the large amount of order-backlogs the maritime industry in Norway had in 2008, they managed to maintain activity during this period. But still, they got few new orders, and the number of new contracts within international shipbuilding decreased with 90% from 2007 to the first quarter of 2009 (NRK, 2009). This meant that the activity decreased as ships got finalized (Norsk Industri, 2012; Stortinget, 2009), which led to

companies initiating dialogues with the government in order to develop emergency preparedness (Hervik et al, 2009). In 2008 and 2009 the government presented several rescue packages, which helped the maritime industry by providing the opportunity for extended limits on construction loan systems for ships. These packages became an important tool for shipyards to maintain their shipbuilding activity in the wake of the financial crisis (Stortinget, 2009).

The Norwegian maritime industry made it through the crisis, and in 2011 they accomplished their highest level of value creation and profitability ever. Today Norway is seen as one of the leading maritime nations in the world (Rederi, 2012; Jacobsen, 2011). This could be explained by the Norwegian shipyard adapting to the changes, starting to focus on more specialized vessels, such as offshore vessels, and fabrication of platforms and modules for installation on the Norwegian continental shelf (Rederi, 2012).

Other adaptations seen in the later years are the shipyards starting to organize in new ways and increase their degree of outsourcing. By increasing the degree of outsourcing, subcontractors and suppliers have slowly taken a bigger part in the shipbuilding process. One of the reasons for increased outsourcing could be that the high wages and downsizing of the staff in the Norwegian shipbuilding industry has made it difficult to keep the whole production in Norway (see e.g. Halse and Bjarnar, 2011; Hervik et al, 2005; Nærings og handelsdepartementet, 2005). Another tendency in the recent years is that many shipyards have entered into agreements with staffing-companies instead of hiring more people. This way they increase their flexibility, and get the opportunity to adjust to large variation in demand (Rederi, 2012).

Today the maritime industry creates value for close to 150 billion NOK, and employs over one hundred thousand people. The maritime clusters are seen as Norway's largest knowledge-based and innovative industry, and when not taking oil and gas industry into consideration the maritime clusters contribute with 11% of all value creation in the Norwegian industry (Maritimt forum, 2012; Rederi, 2012).

According to Norwegian center of expertise (NCE, 2013a), a cluster is a geographical concentration of related companies and institutions within an industry, technology area or a supply chain. Today there are twelve Norwegian centers of expertise and the maritime

cluster in Møre & Romsdal, NCE Maritime is one of these. The cluster in Møre & Romsdal consists of more than 210 companies that design, build, equip and operate advanced vessels for the global oil-based industry (NCE, 2013b). Other NCE clusters that mainly delivers products and services to the maritime/oil and gas industry is the Subsea cluster in the Bergen-region, the node cluster in the south of Norway and the systems engineering cluster in the Kongsberg-region (NCE, 2013b).

The maritime industries high competence, innovativeness, and market relations, obtained through lifetimes of shipbuilding are severe reasons for their success (Jacobsen, 2011), and their maritime knowledge and competencies, in addition to the availability of customized goods and services, are considered as their competitive advantage. Based on this it is reasonable to say that the maritime industry is the only global, knowledge-based industry in Norway (Rederi, 2012). Because of competition it is important that companies stay innovative, and a high-cost country such as Norway has to use their already developed knowledge and technology to stay ahead when it comes to development of new solutions (NCE, 2012).

In a report by Hervik et al (2007) concerning the maritime industry in Møre & Romsdal, the companies was asked to specify what they believed to be their competitive advantage in relation to other Norwegian and foreign actors. Here, the shipyards highlighted quality, supply reliability and price as important competitive advantages in relation to other Norwegian actors. In relation to foreign actors, quality and supply reliability was considered in addition to local affiliation. It is worth to mention that they had few responses from the Norwegian shipyards, making it difficult to say how representative this was. For the suppliers, technology, innovativeness, quality/functionality and local affiliation was considered important competitive advantages relative to other actors both in Norway and in other countries.

Møre & Romsdal is the region in Norway with the highest increase in value creation since 2004, and as mentioned, the maritime industry in this region has achieved the status as Norwegian Center of Expertise. Here they have a combination of experience-based knowledge from the sea, and research-based knowledge, which together has resulted in several innovations and improvements created in the interaction with ship-designers, shipyards, equipment-suppliers, ship-owners, and others possessing desirable knowledge.

Close interactions between users and researchers makes it easier to develop new technology and new solutions (Rederi, 2012). An example of close interactions in Møre & Romsdal is the cooperation between the maritime cluster and Møreforskning, where Møreforskning since 1988 has conducted studies on the maritime cluster, with a focus on Møre & Romsdal (Hervik et.al, 2012).

### ***2.3 Predictions***

Hervik et al (2005) have in their research predicted some possible scenarios in the period 2005-2015, primarily on the basis of the maritime cluster in Møre & Romsdal. One prediction is that there will be a stronger focus on innovation and logistics. This might result in shipyards being able to get more cost efficient, and making their brands grow stronger in the future. In addition to this they predict that there will be even fewer Norwegian shipyards in the future.

According to Hervik et.al (2005) there is a possibility that countries in Asia and East-Europe takes over some of the maritime market share as a result of their own development in knowledge and skills, including production of offshore vessels. The Norwegian maritime industry therefore has to continue to develop and be innovative to stay competitive.

To construct complex ships it is required that you have tacit knowledge and that you have a close cooperation between all actors in the supply chain, which again could make it more difficult to outsource to other countries. According to Halse and Bjarnar (2011) it has been found that maritime companies consider to backsource some of their outsourced activities. One reason for this could be that the wages and other social and economic benefits may become more similar during the next years due to globalization. Also, some has become aware that the transaction costs associated with outsourcing, such as coordination production over large geographical distances is significant, and may affect companies' strategic decisions in the future.

### 3 Literature Review

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*This chapter presents the literature that has been the basis for this thesis. During the last decades the theory states that there seem to be a change in the perspective of outsourcing; from cost to strategic. The first section presents theory about outsourcing as well as its association with the new perspective; the resource based view, and core competencies. The second section presents general theory on risks, in addition to the benefits and risks associated with outsourcing.*

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#### 3.1 Outsourcing

During the last decade it has become more common to outsource, not just within the maritime industry, but in general. The phenomenon of outsourcing originated in the 1950's, but was not a widely used strategy for organizations before the 1980's (Hätönen and Erikson, 2009). Making an outsourcing decision is in most cases an attempt to get a competitive advantage over the competitors (Gilley and Rasheed, 2000).

Outsourcing is not a new phenomenon and there are several authors that have published research on the subject. This has led to several definitions of the term. Gilley and Rasheed (2000) argues that in general, the definition of outsourcing used in studies of the subject is so broad that it almost includes any good or service that an organization procures from outside firms.

Madsen and Slepnirov (2011) say that outsourcing is a way for companies to be more efficient and effective, and helps them to focus more on their core competencies. They also state that:

*“Facing the intense competition, companies are seeking to achieve a higher degree of efficiency and effectiveness by reconfiguring and reorganizing their discrete value-added activities and subsequently relocating them to most appropriate destinations” (Madsen and Slepnirov, 2011, 1).*

Caniëls and Roeleveld (2009) argue that there is a difference between an outsourcing relationship and a regular buyer-supplier relationship. They say that outsourcing is more than just a purchasing decision because it also represents decisions concerning rejection of the internalization of an activity, which makes it a strategic decision instead. Based on this they define outsourcing as:



*“procuring a good or service from an external third party that was either originally sourced internally or could have been sourced internally notwithstanding the decision to go outside”* (Caniëls and Roeleveld, 2009, 403).

A simpler definition is made by Ellram and Billington (2001) which states that outsourcing is:

*“the transfer of the production of goods or services that has been performed internally to an external party”* (Ellram and Billington, 2001, 16).

The table below shows a selection of outsourcing definitions:

Definitions of outsourcing	Author(s)
A variety of «make or buy» decisions' to obtain the necessary supplies of materials and services for the production of the organization's goods and services.	Harrigan (1985)
External acquisition of activities, including those traditionally considered an integral part of any firm, provided that they do not form part of the firm's core capabilities.	Quinn and Hilmer (1994)
Exchange relationships with independent firms with whom stable cooperation agreements can be established.	Ventura (1994)
The act of turning to an external organization to perform a function previously performed in-house. It entails the transfer of the planning, administration and development of the activity to an independent third party.	Rothery and Roberson (1996)
Long-term link related to the development of determined activities or tasks that are not essential to the firm by specialized professionals, who, in time, become strategic partners.	Casani et al. (1996)
Process of making contracts with third party to handle a part of the client firm's business.	Blumberg (1998)
The act of an organization transferring periodic internal activities and decision-taking to external suppliers through contracts.	Greaver (1999)
It is the substitution of activities performed in-house by acquiring them externally, although the firm has the necessary management and financial capabilities to develop them internally. It is also an abstention from performing activities in-house.	Gilley and Rasheed (2000)
It consists of contracting an external supplier to perform a task previously executed by the organization itself, and may also even involve new activities.	Campos (2001)
The operation of shifting a transaction previously governed internally to an external supplier through a long-term contract, and involving the transfer to the vendor.	Quèlin and Duhamel (2003)
Not only consists of purchasing products or services from external sources, but also transfers the responsibility for business functions and often the associated knowledge (tacit and codified) to the external organization.	McCarthy and Anagnostou (2004)

*Table 1: Definitions of outsourcing (Adapted from Espino-Rodríguez and Padrón Robaina, 2006)*

Based on the definitions mentioned, and the definitions in table 1, outsourcing is in this thesis defined as:

*“Acquiring an activity from an external source instead of it being performed by the organization itself”*

As mentioned earlier, outsourcing seems to have evolved from mainly being a decision based on cost, into becoming more of a strategic decision for the organization (Hätönen and Erikson, 2009; Kremic et al., 2006). In later years outsourcing has been divided into three different generations (Kedia and Lahiri, 2007; Lee et al, 2010). Lee et al (2010) argues that first generation outsourcing is based upon transaction cost theory, while both second and third generation outsourcing is based upon the resource based view, which include a more strategic decision.

Lee et al (2010) states that the first generation of outsourcing focuses on the procurement of non-core competencies, and that this is driven by the need of saving unnecessary costs by outsourcing the activity to others. Kedia and Lahiri (2007) name this generation of outsourcing a tactical partnership, meaning that the outsourcing decision is made mainly as an attempt to get the job done at a lower cost than what a company can do themselves. They also argue that such relationships are mainly arm’s length and short term.

The second generation of outsourcing still focused on how to reduce costs, but now the firms also did it to improve the quality of their product/services and to get a shorter development time. By having their core activities in-house and outsource activities that were near-core, the organizations were able to get a greater focus on their core activities (Lee et al, 2010). As a result, organizations started to think more strategic than before, which gave a greater focus on building long-term relationships. Kedia and Lahiri (2007) named this generation for a strategic partnership.

The last generation, called third generation outsourcing or transformational partnership, has a greater focus on risk-sharing and increased flexibility (Lee et al, 2010). Kedia and Lahiri (2007) argue that it in this generation it is common for organizations to redefine their existing businesses and start considering their suppliers as allies towards gaining

greater competitive advantage and market share. This makes it important to choose suppliers that have “best in the world” competence on what they are sat to do.

### **3.1.1 Core competencies**

As outsourcing has become more common during the later years, the focus on core competencies has increased. Caniëls and Roeleveld (2009) and Kremic et al (2006) argue that the dominant reason for outsourcing has changed over time, from cost considerations to a strategic choice about the firm’s core competencies.

Core competencies are defined as:

*“the sets of skills and systems that a company does at “best in world” levels and through which a company creates uniquely high value for customers”* (Quinn, 1999, 12).

The tendency toward outsourcing becoming a strategic choice is supported by McIvor (2000) who argues that earlier it where common to outsource activities such as cleaning, canteen and security, while it now has become more common to outsource more strategic activities such as manufacturing, distribution and information systems, and design.

One reason why outsourcing has become a more strategic viewpoint is that it makes it easier for the company to have a greater focus on their core competencies (Kremic et. al, 2006). This is supported by several authors who argues that companies should concentrate on the activities they consider as core, keeping these in-house, while outsourcing the rest to other companies that perform it more efficient (see e.g. Caniëls and Roeleveld, 2009; Ellram et al, 2008; Ellram and Billington, 2001; Freytag et al, 2011; Hoecht and Trott, 2006; Kakabadse and Kakabadse, 2000b; Leavy, 2001; Maltz and Ellram, 1999; McIvor, 2000; Tate et al, 2009; Quinn, 1999; Quinn and Hilmer, 1994).

Some have even gone to the extent and stated that:

*“core competencies should never be outsourced”* (Ellram and Billington, 2001, 16).

And *“Once a company develops a true best-in-world core competency, it never outsources it and may even build defense rings off essential competencies that customers insist it have or that protect its core”* (Quinn, 1999, 12).

Hoecht and Trott (2006) argue that core competencies can be any asset that enhances firm performance. Caniëls and Roeleveld (2009, 403) has a more specific definition and states that:

*“While competences express what a firm is able to do well, core competencies encompass what the firm is able to do better than others. As such they are the basis for a firm’s unique competitive advantage.”*

These statements are supported by Kremic et al (2006) who argues that organizations use their core competencies to sustain a competitive advantage. Other authors have supported these statements saying that companies should focus on their core competencies and keep them in-house so that they are able to increase their efficiency and improve their quality as a result of increased knowledge (see e.g. Freytag et al, 2011; Kakabadse and Kakabadse, 2000b; Quinn, 1999).

According to Quinn and Hilmer (1994) managers within a company has to think about which of its activities creates unique value for the company and their customers, and which activities could be bought externally. Companies tend to focus on those areas where they already excel, while the real challenge is to continuously develop skills that the customers will value over time. Because of frequent changing markets and demands, flexible skill sets and constant reevaluations are important. To help decide which activities are core they have mentioned several points which can help the manager determine what core really is.

For instance, the manager should look at the set of skill and knowledge, not the product or function itself. A product can easily be copied or be replaced by substitutes, while a set of skills is a competency which allows the company to perform an activity better than competitors, and allows the company to improve continuously as the market changes. Activities such as technology creation, logistics and customer service are competencies that are based on knowledge (Quinn and Hilmer, 1994).

Further, managers need to be aware that they cannot be best in every activity in the value chain. Instead, they need to focus on two or three activities which are most critical for future success so that they more easily can match the performance of their more focused competitors. Also, managers should be aware of where there are market imperfections and/or knowledge gaps, and then use its own unique knowledge to fill this gap so that their resources can be highly utilized (Quinn and Hilmer, 1994).

If a company performs some activities more efficient than their competitors it is likely that they will achieve higher incomes than their competitors. Earlier this meant that the company should own and manage every activity in the supply chain to try and achieve this level of efficiency, but today it is more common to let external suppliers who are specialized in the specific skill perform the activity (Quinn and Hilmer, 1994).

Another point mentioned is the importance that a company's core competencies do not depend on only one or two star employees. This is because of the possibility that these individuals may leave the company. To prevent losing the competencies the company should convert these competencies into a culture that outlives the star employees and make sure that the competencies are captured within the system of the company (Quinn and Hilmer, 1994).

To summarize, in this thesis it can be understood that core competencies are goods or services where the organization perform on such a high level that they are able to compete against other companies in their market and that these competencies should be protected.

Regarding the core competencies the companies focuses on and performs in-house, it is important to continuously benchmark these against other potential suppliers to ensure continuous improvement of the core competencies, making them best in the market (Quinn and Hilmer, 1994).

### **3.1.2 Resource based view**

As mentioned in chapter 3.1 outsourcing seems to have evolved from being a decision based on cost into becoming more of a strategic decision for the companies. The resource based view emerged in the 1990s, as a different perspective on outsourcing, opening for a more strategic approach (Cäniels and Roeleveld, 2009). As stated in chapter 3.1.1, looking at outsourcing as a strategic choice increased the focus on firm's core competencies.

Espino-Rodríguez and Padrón-Robaina (2006) address outsourcing from the resource-based view (RBV) of the firm. They claim that the resource based approach examines the relationship between the internal characteristics of the firms and its positioning. Further, they claim that the RBV provides an approach that looks at the firm as a set of resources and capabilities that are treated as the company's strengths. These strengths must be supported and should guide the firm's strategy. Espino-Rodríguez and Padrón-Robaina (2006) define the firm's resources as any production factors that are available to the firm.

Espino-Rodríguez and Padrón-Robaina (2006) argues that the RBV perspective could be a theoretical framework to help decide which activities should be outsourced, and which should be performed in-house, based on how firms perform relative to its competitors, and by comparing internal capabilities and competences with them. If a company is to address the outsourcing decision in a strategic way, based on resources and capabilities, they have to have a deep understanding of their core competences since this is what they will attempt to build their future competitive advantage on (Espino-Rodríguez and Padrón-Robaina, 2006).

From this it can be understood that the outsourcing decision is determined by how well the company performs when it comes to developing capabilities and sustaining a superior performance position within this capability, relative to its competitors (Lee et.al, 2010; Tate et al, 2009). According to RBV; the competitive advantage is a function of both opportunities in the external environment, and of which resources that can be identified, developed, deployed and protected by the firm (Tate et al, 2009).

According to the RBV firms must possess unique resources to be able to achieve competitive advantage. The uniqueness can be a result of specificity or scarcity in the external market. In other words, the resources have to be rare to be a competitive

advantage. This is supported by several other authors who argue that the RBV suggest that a company can earn a sustained competitive advantage if they have resources and capabilities that are valuable, rare, imperfectly imitable and non-substitutable (see e.g. Gilley and Rasheed, 2000; Kedia and Lahiri, 2007; Lee et.al, 2010). For resources and capabilities to be considered valuable they have to allow an organization to exploit opportunities and counter threats in the business environment. If the resources and capabilities needed for an internally activity in the company do not measure up to these demands it can be outsourced to external providers. This is because a firm will not be able to perform an activity more efficient internally unless they have a competitive advantage (Lee et.al, 2010).

### **3.1.3 Outsourcing considerations**

When considering outsourcing many factors should be taken into account. Kremic et al (2006) have looked at some general factors that may have an impact on whether or not the company should outsource.

One of the factors to consider is complexity. With this it is understood that a product or function is complex if it is expensive to produce/perform, require a lot of resources, consists of several components/activities, and is highly technical. When dealing with a complex products or functions it can be difficult to formulate the specific requirements and terms. In addition to this, the learning process for the supplier will be more extensive and can therefor require high investments for the supplier. Based on this, the more complex a product or function is, the less suitable it is to be outsourced. If a company has unique missions or specialized skills, few or none outside suppliers possess those skills. If a company has a product or a service that is specialized and/or requires special skills that are hard to find externally, it is less likely to be outsourced (Kremic et al, 2006).

Another thing to consider is integration. This refers to in which degree the function is linked into other functions and systems within the organization, in the sense that it will have a big impact on other activities the company performs. In addition to this there will be a lot off interactions and communication channels to maintain and monitor between the company and the supplier if the function is integrated. By outsourcing an integrated function it can be difficult to maintain sufficient communication and coordination. So if a



function is heavily integrated it will not be a good candidate for outsourcing (Kremic et al, 2006).

It will also be sensible to consider the actions of competitors. This refers to the fact that a company often can look at their competitors, and assume that is wise to follow their move. So if a competitor is outsourcing a function, it is more likely to be outsourced (Kremic et al, 2006).

### 3.1.4 Contracts

To make an outsourcing agreement successful it is important to draw a good contract between the client and the supplier (Barthèley, 2003; Platz and Temponi, 2007). According to Platz and Temponi (2007), research suggests that a large part of the problems within the supply chain can be traced back to poorly designed contracts. By having a tight contract it is possible to protect a customer from conflict of interest, provide structure in the relationship and with this minimize the risk of failure, for both parties. A good contract could also ensure that there is a good balance of power between the company and their supplier, in addition to allowing them to set expectations (Barthèley, 2003).

The challenge making contracts with limited leeway is that the two parties have different view on how the agreement should look like, in term of conditions and outcomes of the contract. For instance, the advantages of outsourcing represent the benefits the company wishes to achieve. On the other hand the suppliers' wishes are represented with the disadvantages of outsourcing. These contradictory wishes could be the reason why a client choose to keep the activity in-house instead of outsource to an external source. Because of the different views, it is important that both parties understand what the other wants when they negotiate the contract (Usher, 2004). This is illustrated in the following figure:

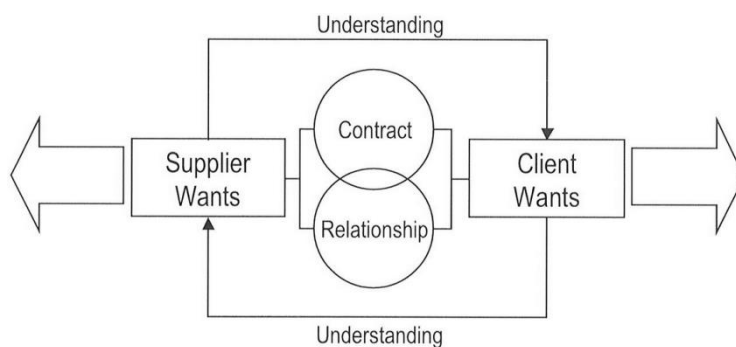


Figure 1: Resolving divergent supplier and client wants (Usher, 2004, 358)

According to Barthèlemy (2003) a good contract should be precise and complete, and it should contain some incentives that help encourage the parties to perform. It should also be balanced so that none of the parties get a benefit, and the contract should be flexible in the sense that it should keep up with changing business conditions and technology. In addition to that Usher (2004) argues that the contract must embody commitment and clearly defined terms. Platz and Temponi (2007) emphasize, among other things, the importance of the contract clearly defining the performance objectives and methods for deciding rewards. These should be desirable for both companies involved. Further, they argue that the contract should include the possibility to terminate the relationship if it becomes unprofitable, to avoid being locked in to a long term contract.

Platz and Temponi (2007) sum up by claiming that a contract should be a product of extensive research, negotiation and sharing of each company's objectives and that contracts need to be customized to specific situations, since using one general contract for different situations could put a company in an unfortunate situation.

According to Herath and Kishore (2009), it is important to consider the duration of the contract. There are different pros and cons to having both long and short term contracts. While a contract with long duration will provide stable and higher revenue and a better base to build a relationship with the vendor it could also create lock-in situations. If a short term contract is being used it will likely earn lower revenue, due to learning curve effects, but the company is in a less risky situation relative to a possible lock in situation. Herath and Kishore (2009) also argue that researchers have found long term relationships to be more successful than short term relationships.

### **3.1.5 Backsourcing**

Even though companies makes their decision based on an analysis, there may be cases where the outsourcing decision leads to difficulties and unfulfilled expectations, which result in the company having to re-evaluate their outsourcing decision (Freytag et al, 2011).

Freytag et al (2011) states that there are different options to consider if a company gets in a situation where they have to re-evaluate their outsourcing decision. One option is to decide

to continue outsourcing, despite their problems. They can also choose to switch supplier, or they can backsource. Backsourcing could be defined as:

*“The act of bringing once outsourced activity back into the organization, with the goal to rebuild internal capabilities”* (Freytag et al, 2011, 2).

McLaughlin and Peppard (2006) argue that under-performance of the vendor is the main reason for outsourcing problems. Even though this is a problem experienced by many companies, McLaughlin and Peppard (2006) states that there are no right answers of how companies should handle such problems. For instance, some say that most companies who experience difficulties in an outsourcing relationship try to solve the problem themselves rather than backsource, while others state that backsourcing is an emerging trend.

Madsen and Slepnirov (2011) states that recent research imply that companies tend to backsource manufacturing activities. According to the research done by Freytag et al (2011) there may be different reasons why a company chose to backsource instead of taking other actions, for instance switching supplier. Before they decide to backsource the company has to consider whether they have the ability and capacity to bring the activity back home. Making a decision to bring something in-house again may be more difficult over time because of changes the company might have done during the time the activity has been outsourced. For example they may have sold the facility they needed, or dismissed employees, which is actions that cannot easily be reversed.

Kakabadse and Kakabadse (2000b) are agreeing with Freytag et al (2011), stating that there may occur situations where the expectations are not fulfilled and the company will consider bringing the activity back in-house. But on the other hand they argue that taking a backsourcing decision is costly and can be quite embarrassing. As a result Kakabadse and Kakabadse (2000b) argue that it is common for companies to renegotiate with their current supplier and/or switch supplier, instead of making a backsourcing decision.

## **3.2 Benefits and risks**

When a company decides whether to outsource or not they should evaluate their options, and weigh the potential benefits up against the risks. Based on this a decision is to be made, and if the benefits are significant larger than the risks the company is most likely to outsource (Freytag et al, 2011).

### **3.2.1 Benefits associated with outsourcing**

This section presents some of the most common reasons for companies to consider outsourcing, based on the available outsourcing literature and earlier research.

**Cost reduction:** Cost reduction is said to be one of the most common reasons for companies to consider outsourcing, at least it has been for the last decade. In an environment where price competition is very common companies have to reduce their prices to keep their customers. To be able to do this the companies are forced to reduce their costs (see e.g. Frost, 2000; Kakabadse and Kakabadse, 2000a; Quélin and Duhamel, 2003; Quinn, 1999). Kremic et al (2006) states that you should only outsource for cost reasons as long as the suppliers' costs are lower than what you are able to obtain yourself. Mechanisms such as specialization and economies of scale are important to achieve the level of efficiency that is necessary to lower the cost. The outsourcing decision can also be based on the desire to save indirect costs. By producing less in-house, you will need fewer employees, which again will require less infrastructure and support systems. This way, the company get a more nimble and efficient organization.

**Focus on core competencies:** When a company considers outsourcing it should get an overview over its capabilities and resources. After considering these, many authors' states that the company should choose to keep their core competencies in-house, and outsource the rest in order to stay competitive. When doing so the company can focus on their core competencies, being able to develop these further (see e.g. Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000b; Kremic et al, 2006; Quélin and Duhamel, 2003; Quinn, 1999; Barthélemy, 2003).

**Access to new and better knowledge:** Buying a service or product from a supplier instead of providing it in-house may in many cases lead to access to new and better knowledge from an external source. This could give the company a competitive advantage. Also,

when a company outsources and gets to focus more on its core competencies, it can devote its time to develop better knowledge on the respective competencies. Greater knowledge may also lead to greater innovativeness (see e.g. Frost, 2000; Kremic et al, 2006; Quélin and Duhamel, 2003; Quinn, 1999).

**Increased flexibility:** Flexibility has become more important as companies are required to react quicker to customer requirements than before, and outsourcing could be one way to achieve the flexibility needed (Kremic et al 2006). Being able to adjust the workforce and production capacity more rapidly than your competitors, will give your company a competitive advantage. This way the company gets better suited to manage demand swings, thus it can react quicker to fluctuating demands (see e.g. Kakabadse and Kakabadse, 2000a; Kedia and Lahiri, 2007; Kremic et al, 2006; Quinn, 1999).

**Make capital available by reduce invested capital:** When a company outsource instead of performing the activity themselves, the company transform their fixed costs into variable costs. This could be explained with the company paying their supplier's for their facilities and knowledge, instead of investing in it themselves. By avoiding these future investments the company also reduces its risk, and become more flexible (Frost, 2000; Quélin & Duhamel, 2003).

**Being more efficient:** If a company realize that a supplier has more knowledge depth and experience within a specific activity than what the company has, it would most likely be more efficient to outsource the activity to the supplier instead of performing it themselves. If a company operates in a fluctuating market, efficiency will be of high importance (Quinn, 1999).

**Quality improvement on the outsourced product/service:** For most services and products there will often be a supplier that has chosen to specialize in it and can offer it more efficient and/or at a lower cost than you (Quinn and Hilmer, 1994). Outsourcing to a supplier that has specialized in a certain activity, the supplier most likely performs on a higher level, which again may lead to higher quality. Using a supplier that is recognized for its high quality is seen as positive and could be good for the company's general reputation (see e.g. Frost, 2000; Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000b; Kremic et al, 2006).

**Quality improvements on core products held in-house:** If a company decides to keep their core products in-house, it usually means that they have the ability to develop the products further without help from external resources and remain competitive in the market. This way companies get the ability to improve the quality of their products without depending on others (Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000a).

The benefits mentioned are listed in the following table:

Benefits	Author(s)
<b>Cost reduction</b>	Frost, 2000; Kakabadse and Kakabadse, 2000a; Kremic et al, 2006; Quélin and Duhamel, 2003; Quinn, 1999
<b>Focus on core competencies</b>	Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000b; Kremic et al, 2006; Quélin and Duhamel, 2003; Quinn, 1999; Barthélemy, 2003
<b>Access to new and better knowledge</b>	Frost, 2000; Kremic et al, 2006; Quélin and Duhamel, 2003; Quinn, 1999
<b>Increased flexibility</b>	Kakabadse and Kakabadse, 2000a; Kedia and Lahiri, 2007; Kremic et al, 2006; Quinn, 1999
<b>Make capital available by reduce invested capital</b>	Frost, 2000; Quélin and Duhamel, 2003
<b>Being more efficient</b>	Quinn, 1999
<b>Quality improvement on the outsourced products/services</b>	Frost, 2000; Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000b; Kremic et al, 2006; Quinn and Hilmer, 1994
<b>Quality improvements on core products held in-house</b>	Gilley and Rasheed, 2000; Kakabadse and Kakabadse, 2000a

Table 2: Possible benefits associated with outsourcing, based on theory

### 3.2.2 Risks

In all situations there is a risk of something unexpected or unusual occurring, and as stated by Johnson et al (2011), every business decision involves risks.

McNeil (1999, 2) define risk as “*random variables, mapping unforeseen future states of the world into values representing profits and losses.*”

While Kallmann (2005, 57) defines risk as “*the variation from the expected outcome over time*”.

According to Olsson (2007) risk has traditionally been seen as a factor or event that is unwanted, and that prevents projects to achieve set objectives, such as to fulfill time requirements and meet budget. Olsson (2007, 745) argue that risk can be defined as “*the negative outcome of an uncertainty*”.

### **3.2.2.1 Risk management**

As mentioned in section 1.1, every business decision involves risks, and when a company decides to outsource they get exposed of several risks, which is described in section 3.2.2.4. Poorly managed risks can have consequences affecting the whole supply chain. For instance, it can lead to inaccurate forecasting, loss of reputation, lower product quality, and even poor relationships with other members of the supply chain (Christopher et al, 2011). Risk management is a tool that can be helpful when dealing with risks. Johnson et.al (2011, 329) states that:

*“it takes actions to avoid, mitigate, transfer, insure against, limit or explicitly assume risk”.*

Risk management involves failure prevention. There is always a possibility that something goes wrong, and it is helpful to know what operations can do to prevent such failures. Risk Management is defined as:

*“the process which aims to help organizations understand, evaluate and take actions on all their risks with a view to increasing the probability of their success and reducing the likelihood of failure”* (Slack et al, 2010, 573).

According to research done by other authors there are several steps on how to deal with failures. The steps that are commonly used are illustrated in figure 2, and are further discussed below the following figure.

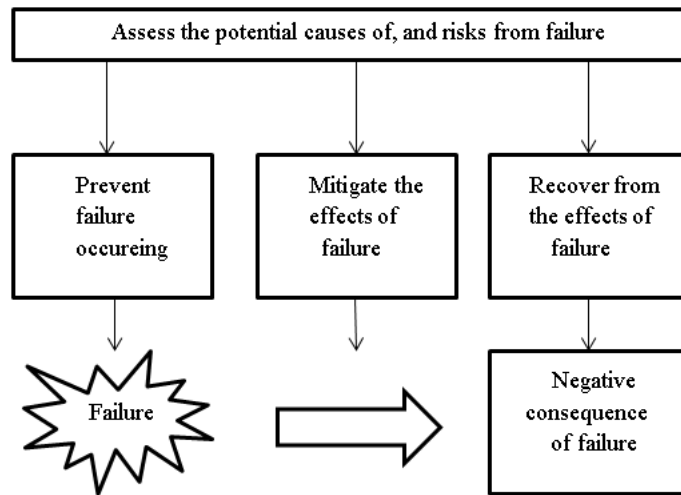


Figure 2, Risk Management (Slack et al, 2010, 573)

First, it is important to understand what kind of failures that potentially could occur and then evaluate how serious the different failures are (Slack et al, 2010). This step is often called risk identification (see e.g. Kern et al, 2012; Khan and Burnes, 2007; Manuj and Mentzer, 2008). The first step has to be conducted to be able to minimize or prevent the effects of those failures that are considered as important potential failures. This is usually done through inspections and auditing operations activities, which require sufficient knowledge and experience by the inspectors (Slack et al, 2010).

The next step consists of examining how to prevent these failures to occur (see e.g. Kern et al, 2012; Khan and Burnes, 2007; Slack et al, 2010). The main purpose of this step is to provide enough in-depth information about the risks that are identified so that it is possible to avoid it, limit or reduce its impact, or prepare contingency plans. To be able to do so, it is important to understand what is causing the occurrence of the specific risk (Kern et al, 2012). This step is called “risk estimation”, where the purpose is to understand the extent of the risks as well as the likelihood (Khan and Burnes, 2007).

According to Slack et al (2010) some failures are caused by random situations or events, making it difficult to predict, but the majority of failures could have been avoided. Supply failure, meaning failure related to timing or quality of goods and services delivered, is one example on a source for failure. This is a source of failure that is considered as important when it comes to outsourcing, due to increased dependence on outsourced activities. Human failure is the most common cause of failure, and can be divided into two main



categories; loss or lack of key personnel, and mistakes made by people doing the job. In addition to this, organizational failure is a potential source of failure and may include the majority of operations and process management.

Slack et al (2010) also states that there are several other causes of failures which may not be as comprehensive, but are still as important to be aware of in order to prevent such failures. Technology such as equipment and IT-systems are all liable to failure, and even though it in some cases can be only partial failure it can affect a large part of the operation. When it comes to product/service design, the design might look ok on paper, but fail in real life. Potential risks should be identified during the design process, but this is not always the case, which the commonality with product-recalls is an example of. Also customers may cause failures. This is often due to misuse of the product or service, and it is therefore common that organizations take on the responsibility to educate the customers in order to minimize such failures.

When an understanding of the causes and effects of failure is established, the operations manager has to try to prevent the failures from occurring. This is shown as the third step in figure 2; “mitigate the effects of failure”. This step is often called risk mitigation (see e.g. Kern et al, 2012; Manuj and Mentzer, 2008; Slack et al, 2010). For instance it is common to have back-up systems in case of failure. Another approach is maintenance, concerning how the organization tries to prevent failure by taking care of their physical facilities. There are different methods on how to perform maintenance. Examples of this could be to perform maintenance only after the failure has taken place, or reducing the chances of failure by cleaning, replacing or checking the facility regularly, as a preventive action (Slack et al, 2010).

According to Slack et al (2010) there are different methods that can be used to mitigate the risks. Which method to use depends on the nature of the risk, and it is not uncommon to establish a classification of risk mitigation actions for the different risks that are likely to occur. These classifications tend to be industry-specific, but there are some generic categorizations that may be applicable. For instance, mitigation planning helps to ensure that all possible cases of failure have been identified. Loss reduction includes any action that helps to remove resources that are likely to suffer disastrous consequences of failure.

In addition to this substitution is a common action to mitigate risk. This is done by providing other resources that can substitute those less effective (due to failure).

Over the past few years, there has been an increase in the impact supply chain disruptions have on company performance. This is a result of more extensive use of single sourcing, low inventories, increased product complexity, and purchasing becoming a more important value creation function allowing little room for errors in this function, leaving many supply chain vulnerable (Kern et al, 2012). Johnson et al (2011) states that by taking a decision about not doing business with suppliers in specific countries, risk can be avoided, while deciding to do dual or multiple sourcing instead of single sourcing will be a way to mitigate risk.

The last step in figure 2 consists of recovery from the effects of failure, meaning that operations managers should decide what actions they will take when failures does occur. Well planned recovery can be helpful since this could mean that the breakdown gets less disruptive than if the manager had no recovery plan. It is not necessarily the failure itself that leads to dissatisfaction among customers, but the organization's response to the failure. A good recovery may even result in frustrated customers becoming loyal ones (Slack et al, 2010).

Based on this chapter it is clear that risk will always be an issue, and the challenge will be to continually assess the different risks and balance the possible risk up against the opportunities for reward (Johnson et.al 2011).

### **3.2.2.2 Supply chain risks**

As for risks in the supply chain, these can be classified into three main categories:

Operational risk, financial risk and reputational risk. According to Johnson et al (2011), operational risk is the risk of the flow of goods or services being interrupted due to factors that is out of the purchasers and the supplier's control, as floods and hurricanes.

Operational risk also includes the risk of supply flow being disrupted by factors directed at the supplier's capability to choose its own suppliers, managing internally and its distribution. Kern et al (2012) divides the risk somewhat different and argues that operational risks include the daily management of the supply chain, while hurricanes and other factors out of anyone's control are called disruption risks.

The financial risks are the risks directly associated with price fluctuations on purchased goods or services. One example could be changes in the oil-prices. An increase in oil-prices would affect the prices for fuel and energy, in addition to prices on products or services that require oil for raw material, or uses it as a key ingredient. Other factors that may affect the price on products and services are currency exchange rates, threat of shortages, supply interruptions and arbitrary supplier pricing decisions. In addition to this, changes in taxation, tolls, fees, duties and tariffs could have an effect on prices and costs (Johnson et.al 2011).

Based on this, it seems that both supply interruption and price/cost risks will affect an organizations ability to accomplish its goals and execute their strategies. It is therefore important that supply chain risks are managed properly, whether they are external or internal. It is also important to remember the risk of a company losing its reputation, since this could be even more serious than operational and financial risks. The reputational risk could be affected by both legal and ethical supply issues, and adverse publicity can be extremely damaging (Johnson et.al 2011).

### **3.2.2.3 Risks in Global Supply Chains**

Organizations in global supply chains operate in environments that are complex and have a high degree of uncertainty, which increases the risks (Monczka and Trent, 1991).

According to Johnson et.al (2011), a recent study at Michigan State University stated that supply chain disruptions and supply chain risk are some of the most critical issues supply chain managers are facing. As the supply chains have become more global, they have been facing the risks of supply interruptions, financial and exchange rate fluctuations, lead time variability in addition to security and protection of intellectual property rights. Monczka and Trent (1991, 3) have defined global sourcing as:

*“the integration and coordination of procurement requirements across worldwide business units, looking at common items, processes, technologies and suppliers”.*

Because of demanding customers and competitive pressure, businesses today are operating on global basis. Operating globally often include economic, logistical, competitive, and cultural differences, which in total can result in having potentially greater uncertainties,

which again result in the need for greater coordination, communication, and monitoring (Manuj and Mentzer, 2008).

Manuj and Mentzer (2008) states that globalization and consolidation of firms are two trends that are affecting the dynamics of global supply chains, and these changes increases the uncertainty for both the firm making the changes as well as its competitors.

Uncertainty of lead times and supplier reliability are two factors that are critical to the performance of a global supply chain, thus these may affect all logistic activities.

According to Manuj and Mentzer (2008) companies should identify potential risks for so developing a strategy in order to deal with the potential risks. When you are to select and implement risk management-strategies it's important to take the entire supply chain, across all countries, into consideration. An issue to be aware of is that it has become more difficult to identify risks, due to the supply globalization and the supply networks getting more complex. It is therefore quite clear that risk management also in the future will be an area of growing concern (Johnson et.al, 2011).

#### **3.2.2.4 Risks associated with outsourcing**

This section presents some of the most common risks companies consider when outsourcing, based on the available outsourcing literature and earlier research.

**Become too dependent on the supplier:** When a company outsource, there is a risk of becoming too dependent on the suppliers as a result of no longer having total control (see e.g. Hoecht and Trott, 2006; Quélin and Duhamel, 2003; Quinn, 1999).

**Being exploited by the supplier:** When companies consider outsourcing they should be aware of the risk that they can be exploited by the supplier. When outsourcing to an external source the company in most cases lose some of the control to the supplier, which gives him the opportunity to act opportunistically. For instance, the supplier could use this position to exploit the company and gain advantages on his own behalf (see e.g. Kedia and Lahiri, 2007; Kremic et al, 2006; Leavy, 2001). Barthélemy (2003) argues that firms that selects the right supplier and write up good contracts are less likely to be exploited.

Kremic et al (2006) states that to avoid situations like this the company should keep the

products/functions that are important to them in-house instead of outsourcing to a supplier where there is high potential for conflict of interest.

**Loss of knowledge/skills and/or corporate memory (core competencies):** When a company outsource, the supplier perform the activity for them, which could result in loss of skills and knowledge for the company that used to have the activity in-house. The risks of losing skills and knowledge can then be connected to the risk of becoming too dependent, thus the company no longer can provide the activity itself (see e.g. Hoeh and Trott, 2006; Kakabadse and Kakabadse, 2000a; Kremic et al, 2006; Leavy, 2001; Quélin and Duhamel, 2003; Quinn, 1999).

**Poor quality:** When outsourcing, it is important that there is a clear, mutual understanding between the buyer and the seller in the case of quality specifications. If there is a misunderstanding about quality specifications it can become quite costly to correct this, especially if the supplier is located far away and the lead time is long. There could also be problems according to interpretation of drawings and specification. In addition to avoiding misunderstandings about the quality and specification, it is important to agree on which type of quality control or acceptance procedures are to be used (Johnson et.al, 2011).

**Cultural distance:** Outsourcing to a supplier that is located in a foreign country, companies should be prepared for possible problems caused by cultural differences. Different cultures may have different ways of doing business, which again can create problems if they are not taken into consideration (Kedia and Lahiri, 2007). Distance, language, and cultural diversity could also increase the risk for misunderstandings between the buyer and supplier (Johnson et.al, 2011).

**Hidden costs:** When a company outsources, the cost saving may not be as high as anticipated. Reasons for this could be that there are unforeseen costs associated with; drawing up the contract, finding a new vendor, higher need of communication or more frequent quality controls (Gilley and Rasheed, 2000). Barthélemy (2003) mentions two main types of hidden costs that may arise as a result of outsourcing. The first is the cost related to finding a vendor and contracting. The cost of searching for and assessing possible vendors, and the following cost of negotiating and writing the contract, can often be more costly than anticipated. The second main type of hidden costs is the vendor

management costs, which have three different dimensions. The first dimension concerns monitoring of the supplier, to make sure that they fulfill their contractual obligations. The second dimension relates to the situation where the vendors do not perform according to the contract and there have to be taken actions to solve the problems. While the third dimension concerns the renegotiating of the contract if unforeseen circumstances were to arise.

**Uncertainty:** Another risk that could be associated with an outsourcing decision is the risk of volatility and unpredictability in the market place due to changes in availability, technology, price and other possible disruptions to the market as currency exchange rate fluctuations (Ellram et.al, 2008; Herath and Kishore, 2009). For example, it will be attractive to outsource to a foreign supplier if the suppliers wage is relatively low while the buying company’s currency is strong. But this can change over time as the market changes, making it less attractive (Gilley and Rasheed, 2000). According to Kremic et al (2006), the higher the uncertainty, the more difficult it could be to outsource. If several of the variables are uncertain, it will be difficult for the supplier to consider what will be a fair price, and thereby demanding a higher price to take on the extra risk. This uncertainty could also make it more difficult to define the requirements and expectations.

The discussed risks are listed in the following table:

<b>Risks</b>	<b>Author(s)</b>
<b>Become too dependent on the supplier</b>	Hoecht and Trott, 2006; Quélin and Duhamel, 2003; Quinn, 1999
<b>Being exploited by the supplier</b>	Barthélemy, 2003; Kedia and Lahiri, 2007; Kremic et al, 2006; Leavy, 2001
<b>Loss of knowledge/skills and/or corporate memory (core competencies)</b>	Hoech and Trott, 2006; Kakabadse and Kakabadse, 2000a; Kremic et al, 2006; Leavy, 2001; Quélin and Duhamel, 2003; Quinn, 1999
<b>Cultural distance</b>	Kedia and Lahiri, 2007
<b>Hidden costs</b>	Barthélemy, 2003; Gilley and Rasheed, 2000
<b>Uncertainty</b>	Ellram et.al, 2008; Gilley and Rasheed, 2000; Herath and Kishore, 2010; Kremic et al, 2006

*Table 3: Possible risks associated with outsourcing, based on theory*

## 4. Research Methodology

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*This chapter describes the research approach, looking at research design and how the data is collected and analyzed in order to answer the research questions.*

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### 4.1 Research design

The aim of this study is to explore the outsourcing tendencies in the maritime industry in Møre & Romsdal, looking at what decisions the industry have made and how they consider different aspects associated with outsourcing. The research in this thesis is designed to answer the research questions in section 1.2. Research is defined as:

*“a systematic process of collecting, analyzing, and interpreting information (data) in order to increase our understanding of a phenomenon about which we are interested or concerned” (Leedy and Ormrod, 2010, 2).*

To be able to achieve research of high quality, it is important that the research design is thorough. According to Yin (2009) the research design is a description of how to conduct the research process to be able to answer the research questions, and in the end, reach a conclusion. Yin (2009, 26) defines research design as:

*“a logical plan for getting from here to there, where here may be defined as the initial set of questions to be answered, and there is some set of conclusions (answer) about these questions”*

When performing research on a subject there are two different approaches; quantitative and qualitative. Leedy and Ormrod (2010, 94) state that:

*“quantitative research involves looking at amounts, or quantities, of one or more variables of interest”.*

According to Leedy and Ormrod (2010) the quantitative approach will be best suited if there is an objective reality that can be measured.

Leedy and Ormrod (2010, 94) defines qualitative research as:

*“looking at characteristics, or qualities, that cannot easily be reduced to numerical values”.*

Further it is stated that the qualitative approach is best suited if there are multiple possible realities constructed by different individuals.

Quantitative and qualitative research design answers, to some extent, different types of questions. By not being limited to just one approach when conducting the research it can increase the overall understanding (Leedy and Ormrod, 2010).

#### **4.2 Data Collection**

To be able to perform an analyze data was collected from several sources. The data collected can be divided into primary- and secondary data. This distinction between these is based on the source the data is collected from (Walliman, 2001).

According to Ringdal (2001) primary data is collected by the researcher, or planed by the researcher, for the purpose of the project. Primary data is in most cases questionnaires, interviews or observations. Hox and Boeije (2005, 593) defines primary data as:

*“data that are collected for the specific research problem at hand, using procedures that fit the research problem best”.*

Secondary data will in most cases be books, newspaper reports, articles and other publications. Hox and Boeije (2005, 593) defines secondary data as:

*“data originally collected for a different purpose and reuse for another research question”.*

Both primary and secondary data can be divided into two categories; qualitative- and quantitative data (Hox and Boeije, 2005). The primary data for this thesis was collected through a survey and interviews. The secondary data was collected from literary books and



research papers. The following table shows the different methods used for collecting data in this thesis.

	<i>Primary</i>	<i>Secondary</i>
<i>Quantitative</i>	Questionnaire, Face-to-Face interview, Phone interview	
<i>Qualitative</i>	General information	Literary books, Web-pages, Annual reports, Scientific research papers

*Table 4: Data collection methods used in this master thesis*

The use of questionnaire and interviews will be described more closely in section 4.3.

### **4.3 Data Collection Methods**

According to Leedy and Ormrod (2010) there are several strategies that can be used performing a quantitative research. In this thesis the main data collection method is survey research. Leedy and Ormrod (2010, 187) defines survey research as:

*“acquiring information about one or more groups of people by asking them questions and tabulating their answers”.*

There are two categories of survey research; Questionnaires, and interviews (Leedy and Ormrod, 2010). Both categories are used in this thesis in order to collect as much information as possible, and thereby provide a better basis for answering the research questions.

#### **4.3.1 Questionnaires**

Fink (2003) say that self-administered questionnaires can be mailed or completed “on site”, for instance on a computer or by hand in a classroom. Other types of self-administered questionnaires could be web-based, e-mail, and computer-assisted surveys (Fink, 2003).

The survey was sent out by e-mail containing a link to the web-edition. In this e-mail the background for the research was stated. The respondents were encouraged to answer the web-based questionnaire, or take contact to arrange meetings or phone interviews. For the respondents that chose to answer through interviews, structured interviews were performed. During the interviews the respondents gave some additional information to clarify their answers in the questionnaire and answered follow-up questions that arose.

Conducting a questionnaire online has some clear benefits. It is often more cost-efficient, and the questionnaire can easily be sent out to a large number of potential respondents with less of an effort than sending it by mail or using the phone. Possible drawbacks with this method are that people tend to overlook them. If they choose to answer, there is a possibility that they interpret one or more of the questions wrong, leaving the researchers with distorted information. It also has the disadvantage of low return rate (Leedy and Ormrod, 2010).

### **4.3.2 Interviews**

Face-to-face interviews are usually structured, asking the respondents a standard set of questions which tend to be formal and emotionally neutral. In some cases these questions could be followed up with one or more individually tailored questions. This way the researcher gets the ability to adapt the questions to the specific respondent and this way get more thorough answers. Interviews tend to have high response rates, but the time and expense involved might come as a disadvantage, especially if there are long distances to travel to get the interviews done. Telephone interviews are less time-consuming and are in most cases less costly. The response rate is usually lower than for face-to-face interviews, but higher than for using e-mail (Leedy and Ormrod, 2010).

### **4.3.3 Quality of the research**

It is important to consider the validity and the reliability of the research in order to evaluate the quality of the methods used. The degree of reliability and validity tell whether something can be learned about the phenomenon studied, if there is any probability that the analyzed data is statistically significant, and if it is possible to draw meaningful conclusions from the data. Both concepts reflect whether there is some degree of error in the measurements (Leedy and Ormrod, 2010).

Fink (2003, 50) defines validity as:

*“the degree to which a survey instrument actually measures what it purports to measure”.*

Reliability is defined as:

*“the consistency with which a measuring instrument yields a certain result when the entity being measured hasn't changed”* (Leedy and Ormrod, 2010, 29).

## 4.4 Questionnaire development

*This section presents the choice of research area and explains how the questionnaire was constructed, and what was measured.*

### 4.4.1 Population and sample size

The main research area for this thesis is the maritime industry in Møre & Romsdal. This was chosen because of limited research associated with outsourcing within this population.

According to Walliman (2001, 232), population is:

*“a collective term used to describe the total quantity of cases of the type which are the subjects of your study”. While a sample is: “a selected number of cases in the population”.*

As basis for the sampling area a list over members in the maritime forum (Maritimt forum Nordvest, 2012) for this region was used. This list was cross-checked with internet-research and information from people in the industry. This gave a sampling size of 48 possible respondents for the chosen population.

Respondents		
	Number	%
Potential respondents	48	100,0
Electronic answers	9	18,8
Phone interviews	2	4,2
Face-to-face interviews	4	8,3
Non respondents	33	68,8
Response rate	15	31,3
Incomplete answer	1	2,1

Table 5: Respondents

Distribution		
	Number	%
Respondents	14	100,0
Shipyards	4	28,6
Suppliers	10	71,4

Table 6: Distribution of suppliers and shipyards

The questionnaire was sent out to all 48 possible respondents. Out of the 48 companies, the questionnaire was sent to 8 shipyards and 40 suppliers.

After a month, nine answers were received electronically. In addition to that, four answers were collected through face-to-face interviews and two through phone interviews. All interviews were conducted by the end of week 15. A total of 15 answers were collected, giving a response rate of 31.3%. Out of these answers four were from shipyards and ten from suppliers. One of the answers was incomplete and thereby excluded from the further analysis. Out of the 14 complete answers, two of the interviews were with two different

facilities within the same company. Because their answers appeared quite similar, these two answers are seen as one in rest of the analysis, which means that 13 respondents remain as the foundation for the analysis.

#### **4.4.2 Questionnaire construction and measurements**

Before constructing the questionnaire, a literature review on outsourcing and other related subjects was performed. The literature review focused on outsourcing and the risks and benefits associated with outsourcing. This formed the basis for the questionnaire. To adjust the questionnaire to the maritime industry, there was performed research on general literature about the industry, in addition to web-research.

When making questionnaires it is common to use checklists and/or rating scales. Using a rating list can give the researcher more information, since it gives the respondent the opportunity to range the statement on a scale from, for example, “not agree” to “agree”. These scales are usually called “Likert scales” (Leedy and Ormrod, 2010). According to De Leeuw et.al (2008) it has been found that, in general, increasing the number of categories in a rating scale up to at least seven, improves the quality of measurement. In the questionnaire developed for this thesis a scale ranging from 1 – 7 were used, where one represented not agree, seven represented agree, and four represented neither agree nor disagree.

The main research question in this thesis is to explore whether the respondents outsource core competencies. To answer this, the questionnaire had to be constructed so that the respondents were able to differentiate their answers for different products/services. This could support the assumption that the respondents have different considerations for different products/services.

The questionnaire was sent out to both shipyards and their suppliers, giving a high product variety. When developing the list, the objective was to make it applicable for the majority of the respondents. The list of product/services was developed based on web-research on the industry and potential respondents. The complete list of products/services used in the questionnaire is shown in the following table.

Products/services Categories
Propellers/Thrusters
Gear
Engines
Hull
Ship outfitting/Interior (Accommodation)
Pipe/pipe systems and installation
Smaller steel constructions/Mechanical components (winches, vents)
Design
Ship consult/Project management services
Electrical installations
Automation solutions
Ship equipment
Deck machinery (all mechanical equipment/aids on deck)
Repair/Maintenance/Reconstruction of ships (Aftermarket)
IT-Services
Administrative services (law, accounting, canteen etc.)
Other

Table 7: Products/services categories in the questionnaire

#### 4.4.2.1 Consideration measurements

In order to answer the second research questions in this thesis, which concerns the respondent's consideration regarding risks and benefits associated with outsourcing, there was developed several questions that will be further explained in this section.

Based on the literature research several possible risk and benefits associated with outsourcing were discovered. With the maritime industry in mind, a selection of these was chosen to be the basis for the questionnaire. Several statements were developed as an attempt to measure the respondents' consideration of different factors concerning risks and benefits. The main factors measured are shown in the following table.

Measured factors	
Benefits	Risks
Costs	Quality
Flexibility	Knowledge
Capacity	Dependency
Knowledge	Hidden costs
Focus on core	Cultural distance
Efficiency	Uncertainty
Quality	

Table 8: Measured factors in the questionnaire

The following table gives an overview over which factors the different statements, concerning benefits, were intended to measure. Some factors are measured by more than one statement based on the assumption that different actions might lead to the factor being affected. These statements were used in question 6 and 25 (see appendix 1) to explore if there was a change in the respondents consideration from their initially decision compared to how they will consider it if they are to outsource in the future.

We outsourced..	
Statement	Measures
To get lower labor cost	Costs
To reduce future investments in knowledge	Costs
To avoid investing in new facilities	Cost/Flexibility
To get access to new and better knowledge from an external source	Knowledge
To have greater focus on our core competencies	Focus on core
To better adapt our workforce to the demand	Capacity/Flexibility
To better adapt the production capacity to the demand	Capacity/Flexibility
To get increased capacity within the production	Capacity/Flexibility
Because someone else could perform the activity more efficient	Efficiency
To improve the quality on core activities held in-house	Quality
To achieve higher quality than we could achieve ourselves	Quality

*Table 9: Factors measured through statements concerning benefits*

By having the respondents consider the benefits of getting lower labor cost, reducing future investment in knowledge and avoid investing in new facilities the intent was to measure how highly the respondents consider cost-savings as a benefit when outsourcing. The consideration of the latter statement could also show how flexibility was considered, in the sense that by not investing in facilities, a company will have variable costs instead of fixed costs. How the respondents considers the benefit of getting access to new and better knowledge gives an indication of whether they outsource to get access to external knowledge.

The statement of outsourcing to have a greater focus on core competencies is included to compare the samples results with the theoretical statement that companies outsource to increase the focus on core competencies, as mentioned in section 3.1.1. How the respondents consider the statements of outsourcing to better adapt workforce and production capacity to demand and to increase capacity within the production will indicate whether higher capacity and increased flexibility are highly considered reasons for outsourcing. The statement of outsourcing because others could perform the activity more

efficient could give an indication of the respondents focus on efficiency when they consider outsourcing. The two last statements presented in table 9 attempts to measure how important high quality is for the respondents.

The following table gives an overview over which factors the different statements concerning the risks with outsourcing were intended to measure. These statements were used in question 7 and 26 (see appendix 1) to explore if there was a change in the respondents consideration from their initially decision compared to if the respondents were to outsource in the future.

We considered the risk..	
Statement	Measures
Of becoming too dependent on the supplier	Dependency
That the supplier would use its position to exploit us and gain advantages on its own behalf	Dependency
Of losing knowledge/skills and/or corporate memory (core competencies)	Dependency
That the cultural distance would cause problems	Cultural distance
Of extra costs due to drawing new contracts	Hidden costs
Of extra costs associated to the selection process of new vendors	Hidden costs
Of higher management costs due to greater communication needs	Hidden costs
Of extra costs because of more frequent quality controls	Hidden costs
Of getting poorer quality	Quality
Of unexpected changes in demand in the market we operate in	Uncertainty
Of financial instability in the country we trade in	Uncertainty
Of currency changes	Uncertainty

*Table 10: Factors measured through statements concerning risks*

Asking the respondents if they considered the risk of becoming too dependent of the supplier and/or being exploited by the supplier and losing knowledge is intended to measure the respondents' fear of becoming dependent and the dangers related to this. To measure if the respondents fear problems with cultural distance they were asked to range how they consider this. The statements concerning costs are different ways of measuring the fear of hidden costs. The statement related to the risk of poorer quality was intended to measure how highly the respondents fear poor quality. The last three statements intends to measure how the respondents consider the risk of market uncertainty.

In addition to the risks and benefits, there were asked additional questions to explore if there were other considerations that have affected the respondents outsourcing decisions.

Question 9, 10 and 11(See appendix 1) was asked to explore how the respondents considered the complexity, integration and specialization of the products they outsourced. This was based on the theory stating that products and services that are defined as either one of the mentioned terms will be a less adequate candidate for outsourcing (Kremic et al, 2006). To clarify the terms for the respondents' complexity and integration was defined in the questionnaire (See appendix 1).

To explore whether or not the respondents believe their main competitors outsource the same as them, and if this affected their own outsourcing decision, question 21 and 22 was asked (See appendix 1).

As the questionnaire is directed towards a specific industry, there were asked some general questions to provide a better understanding of the respondents risk and benefit considerations. Question 12 and 13 (See appendix 1) covered the average contract lengths and frequency of switching supplier. In addition to this, question 5 (See appendix 1) was added to explore how long the respondents had outsourced. The respondents' answers were intended to give an impression of the industry norm.

#### **4.4.2.2 Experiences**

In order to answer the third research question in this thesis, concerning the respondents' experiences with outsourcing, there was developed several questions for the questionnaire that will be further explained in this section.

Question 8 (See appendix 1) was based on the statements developed for the risks and benefits in an attempt to measure the respondents' experiences with these. Some of the experience-statements are slightly adjusted but the intention is that they still measure the same factors.

Question 15, 16, 17 and 20 (See appendix 1) were asked in order to map if the respondents own facilities in other countries and, if this was the case, how many facilities they owned, where they were located and why they chose to buy them. Based on this, it could be explored if there is a tendency towards buying facilities in other countries, instead of outsourcing.



Through question 14, 27 and 28 (See appendix 1) the intention was to find out which countries the respondents mainly outsource to now, and if they consider to outsource to other countries in the future. This could give an impression of whether there is a tendency towards choosing high-cost or low-cost countries when outsourcing.

To explore if there were any tendencies towards back-sourcing, question 18 and 19 (See appendix 1) was asked. Here it was asked if the respondents had reconsidered an earlier outsourcing decision and decided to backsource any products/services, and why.

## 5 Results

*This chapter presents the results from the sample.*

As explained in chapter 4.4.1, 13 respondents is the foundation for further analysis. The main research question in this thesis is to explore if outsourcing tendencies in the maritime industry in Møre & Romsdal challenge the theory, in the sense that the industry bases their decisions on cost, in addition to outsource core competencies.

Outsource	
Respondents	13
Respondents that outsource	12
Percentage that outsource	92,3

*Table 11: Respondents that outsource*

Outsource core competencies	
Respondents that outsource	12
Respondents that outsource core competencies	9
Percentage that outsource core	75,0

*Table 12: Respondents that outsource core competencies*

Out of the 13 answers, 12 of them said that they outsource one or more activities today. And out of these 12 companies, 9 said that they outsource their core activities.

Since this thesis focuses on how companies have experienced earlier outsourcing decisions and how they consider risks and benefits in different situations, the results got analyzed, and checked for tendencies. To see if there were any clear correlations between the respondents' answers, factor analysis was conducted. The results showed that there were no clear correlations, which seems reasonable since the sample consists of both shipyards and their suppliers. The factor analyses were also conducted to see if there were any clear differences between the answers from the shipyards and the suppliers, which there was not.

The total number of respondents in the following results varies because it reflects the fact that one company can outsource more than one product/service and have ranged the statements independently for each of these. When answers from the "New Risks" and "New Benefits" tables are used, the respondents have answered based on a general assumption for only one product/service they consider to outsource in the future. Looking at the answers, the respondents that have ranged more than one product/service had approximately equal ratings on the different product/services. Based on this, it could still be possible to compare the before and after situation, even though the number of responses is not equal.

## 5.1 Considerations

The following results will attempt to answer the second research questions in this thesis, which concerns the respondents' considerations regarding risks and benefits when outsourcing.

### 5.1.1 Benefits

The table below presents the results on the respondents considerations of the different benefits associated with outsourcing.

Benefits in percentage									
	1	2	3	4	5	6	7	Total	n =
Lower labor cost	8,7	26,2	0,0	0,0	21,7	21,7	21,7	100,0	23
Reduce future investment in knowledge	47,8	43,6	4,3	0,0	4,3	0,0	0,0	100,0	23
Focus on core competencies	20,8	0,0	8,3	0,0	12,6	33,3	25,0	100,0	24
Access to new and better knowledge	45,8	12,5	4,2	4,2	25,0	8,3	0,0	100,0	24
Adapt workforce to demand	21,7	13,0	0,0	13,0	30,5	21,8	0,0	100,0	23
Adapt production capacity to demand	13,0	8,7	4,3	13,0	39,2	21,8	0,0	100,0	23
Increase production capacity	0,0	4,3	21,7	8,8	4,3	39,2	21,7	100,0	23
Make use of others being more efficient	8,3	12,5	8,3	8,3	4,3	25,0	33,3	100,0	24
Improve quality core, in-house	16,7	12,4	0,0	16,7	4,2	33,3	16,7	100,0	24
Achieve higher quality than we could achieve ourselves	30,4	34,9	0,0	4,3	4,3	4,3	21,8	100,0	23

Table 13: Benefits associated with outsourcing, based on results in percentage

As for the benefit of outsourcing to achieve lower labor cost there are divided opinions. Close to 35% of the answers implies that the respondents considered this benefit quite low, while 65% of the answers implies that they considered this benefit quite high. From the table it appears that the benefit of outsourcing to reduce future investments in knowledge was of low consideration for the respondents, based on 95% of the answers being in the lower range.

One benefit which the respondents seems to have considered is that they outsourced to have a greater focus on their core competencies, as 70% of the answers have agreed upon this statement. Looking at the benefit of getting access to new and better knowledge, it was of low consideration for the respondents, since over 60% of the answers were in the lower range. The benefits of being able to adapt workforce and production capacity were considered benefits for the respondents, based on 50-65% of the answers agreeing to this statement. Over 60% of the responses imply that the respondents highly considered the benefit of outsourcing to someone more efficient.

When it comes to outsource to increase quality, over 50% of the answers implies that the respondents considered outsourcing to improve quality on their core, while 65% of the answers imply that the respondents' did not consider outsourcing to achieve higher quality than they could achieve themselves.

Based on the respondents' earlier experience with outsourcing, it was explored whether there are any differences in how they consider the possible benefits if they were to outsource something now or in the near future.

New Benefits in percentage									
	1	2	3	4	5	6	7	Total	n =
Lower labor cost	0,0	27,3	9,1	0,0	0,0	27,3	36,3	100,0	11
Reduce future investment in knowledge	45,5	27,2	18,2	9,1	0,0	0,0	0,0	100,0	11
Focus on core competencies	0,0	0,0	9,1	27,3	27,3	36,3	0,0	100,0	11
Access to new and better knowledge	18,2	36,3	18,2	18,2	0,0	9,1	0,0	100,0	11
Adapt workforce to demand	0,0	25,0	0,0	25,0	8,4	33,3	8,3	100,0	12
Adapt production capacity to demand	0,0	16,7	8,3	16,7	16,7	33,3	8,3	100,0	12
Increase production capacity	0,0	0,0	8,4	33,3	16,7	33,3	8,3	100,0	12
Make use of others being more efficient	18,2	27,2	0,0	18,2	9,1	9,1	18,2	100,0	11
Improve quality core, in-house	9,1	9,1	18,2	27,2	18,2	9,1	9,1	100,0	11
Achieve higher quality than we could achieve ourselves	18,2	36,3	18,2	18,2	0,0	0,0	9,1	100,0	11

Table 14: New Benefits associated with outsourcing, based on results in percentage

As for outsourcing to achieve lower labor cost in the future there are divided opinions. Close to 40% of the answers show that the respondents consider this benefit quite low, while over 60% of the answers indicates that the respondents consider this benefit quite high. Looking at the table, the benefit of outsourcing to reduce future investments in knowledge is of low consideration for the respondents, based on 90% of the answers being in the lower range.

One benefit which the respondents seem to consider in the future is that they outsource to have a greater focus on their core competencies as over 60% of the answers have agreed upon this statement. Looking at the benefit of getting access to new and better knowledge, it seems to be of low consideration for the respondents, since over 70% of the answers disagree to this statement. The benefits of being able to adapt workforce and production capacity seems to be considered benefits by the respondents, based on 45-55% of the answers being in the upper range.

When it comes to the benefit of outsourcing to someone that is more efficient, 45% of the answers indicate that this will not be looked at as a highly considered benefit in the future. When it comes to outsourcing to increase quality, the answers are split on the middle, with just as many considering outsourcing to improve quality on their core, as not considering it. Over 70% of the answers imply that the respondents do not consider outsourcing non-core products to increase the quality.

### 5.1.2 Risks

The following table presents the results for how the respondents considered the different risks of outsourcing.

Risks in percentage									
	1	2	3	4	5	6	7	Total	n =
<b>Loss of knowledge/skills</b>	0,0	4,5	4,5	59,1	9,1	9,1	13,7	100,0	22
<b>Cultural Distance</b>	18,2	40,9	27,3	0,0	9,1	4,5	0,0	100,0	22
<b>Poorer Quality</b>	9,1	0,0	9,1	4,5	36,4	27,3	13,6	100,0	22
<b>Extra cost, frequent quality controls</b>	22,7	4,5	9,1	4,5	31,8	13,7	13,7	100,0	22
<b>Currency changes</b>	22,7	31,9	22,7	0,0	18,2	4,5	0,0	100,0	22
<b>Financial instability</b>	31,9	40,9	4,5	13,6	0,0	9,1	0,0	100,0	22
<b>Changes in the market demand</b>	27,3	27,3	18,1	9,1	0,0	9,1	9,1	100,0	22
<b>Being too dependent on the supplier</b>	0,0	37,5	4,2	12,5	4,2	20,8	20,8	100,0	24
<b>Being exploited by the supplier</b>	21,7	30,4	17,4	13,1	8,7	8,7	0,0	100,0	23
<b>Extra cost, new contracts</b>	27,4	13,6	9,1	9,1	13,6	13,6	13,6	100,0	22
<b>Extra cost, new supplier</b>	22,7	13,6	27,4	9,1	4,5	9,1	13,6	100,0	22
<b>Extra cost, communication</b>	13,6	4,5	4,5	27,3	22,7	13,7	13,7	100,0	22

Table 15: Risks associated with outsourcing, based on results in percentage

When it comes to the risk of losing knowledge and skills, most of the companies seem to have considered it, but it does not seem to have been one of their main concerns, based on 60% of the answers being ranged four on the “Likert-scale”. Cultural distance seems to have been of minor concern for the respondents since over 80% of the answers were in the lower range. 75% of the answers imply that the respondents considered the risk of poorer quality when they outsourced. This could be seen up against the risk of higher costs associated with more frequent quality controls, which seems to be of concern since 60% of the answers were in the upper range.

77% of the answers indicate that the risk of future currency changes seems to be of minor concern for the respondents. Looking at the table it appears that the respondents did not consider the risk of financial instability in the country they trade in, or were concerned

about unexpected changes in the market, since respectively 80% and 70% of the answers ranged these risks low.

Concerning the risks associated with supplier relationship, the distribution of the answers is split in two when it comes to the risk of becoming too dependent on the supplier. As for the risk of being exploited by the supplier, 70% of the answers ranged this low, implying that this was not a feared risk for the respondents. As for the risk of extra cost, 50-60% of the answers indicate that the respondents did not fear the risks of this concerning new contracts and finding new suppliers, or the risk of getting extra cost due to higher communication needs when outsourcing.

Based on the respondents' earlier experiences with outsourcing, it was examined whether there were any differences in how they would consider the possible risks if they were to outsource something in the near future. The results are shown in the following table.

New Risks in percentage									
	1	2	3	4	5	6	7	Total	n =
<b>Loss of knowledge/skills</b>	0,0	0,0	27,3	18,2	45,4	0,0	9,1	100,0	11
<b>Cultural Distance</b>	36,4	18,2	9,1	9,1	27,2	0,0	0,0	100,0	11
<b>Poorer Quality</b>	9,1	0,0	9,1	0,0	45,5	27,2	9,1	100,0	11
<b>Extra cost, frequent quality controls</b>	9,1	9,1	9,1	27,2	36,4	0,0	9,1	100,0	11
<b>Currency changes</b>	18,2	27,3	36,3	0,0	18,2	0,0	0,0	100,0	11
<b>Financial instability</b>	18,2	36,3	9,1	18,2	18,2	0,0	0,0	100,0	11
<b>Changes in the market demand</b>	9,1	9,1	27,2	36,4	18,2	0,0	0,0	100,0	11
<b>Beeing too dependent on the supplier</b>	0,0	27,3	9,1	9,1	27,3	0,0	27,2	100,0	11
<b>Beeing exploitet by the supplier</b>	18,2	9,1	18,2	9,1	18,2	9,1	18,1	100,0	11
<b>Extra cost, new contracts</b>	27,3	27,2	9,1	18,2	9,1	9,1	0,0	100,0	11
<b>Extra cost, new supplier</b>	18,2	45,5	27,2	0,0	0,0	9,1	0,0	100,0	11
<b>Extra cost, communication</b>	9,1	9,1	36,4	27,2	9,1	9,1	0,0	100,0	11

*Table 16: New Risks associated with outsourcing, based on results, in percentage*

When it comes to the risk of losing knowledge and skills the majority of the respondents seem to consider this in the future as 54% of answers are rated above four on the "Likert-scale". Cultural distance seems to be of minor concern, since over 60% of the answers imply that the respondents do not consider this a risk when outsourcing in the future. As for the risk of poorer quality when outsourcing, over 80% of the answers are ranged in upper scale, implying that the respondents fear this risk quite high. This could be seen up against the risk of higher costs associated with more frequent quality controls, which

seems to be of concern for the respondents, since over 50% of the answers are ranged in the upper scale.

The risk of currency changes in the future seems to be of little concern for the respondents, as over 80% of the answers disagree to this statement. Looking at the table, over 60% of the answers implies that the respondents do not consider the risk of financial instability in the country they trade in. While 45% of the answers imply that the respondents are not concerned about unexpected fluctuations in the market. Concerning the risks associated with the supplier relationship, the distribution of the answers is split in two when it comes to the risk of being exploited by the supplier. While 55% of the answers imply that the respondents are concerned about becoming too dependent on the supplier.

As for the risks of hidden costs, over 60% of the answers were ranged low for the risk of this occurring when drawing new contracts, while 90% of the answers were ranged low for this occurring when finding new suppliers. This implies that these risks are of low consideration for the respondents. 50% of the answers imply that the respondents do consider the risk of getting extra cost due to higher communication needs when outsourcing.

### 5.1.3 Additional considerations

In the following section, the results of other considerations that could have affected the respondents outsourcing decisions are presented.

It was examined whether the companies considered the product/service they outsource as complex, integrated and specialized. The following table shows the results.

Complex, intergrated and specialized, in percentage									
	1	2	3	4	5	6	7	Total	n =
<b>Complex</b>	0,0	37,5	12,5	20,8	8,3	8,3	12,5	100,0	24
<b>Integrated</b>	8,7	4,3	4,3	8,7	8,7	21,7	43,5	100,0	23
<b>Specialized</b>	0,0	12,5	25,0	8,3	33,3	16,7	4,2	100,0	24

*Table 17: Consideration of complexity, integration and specialization of products/services, in percentage*

50% of the answers show that the respondents' does not consider the product/services they outsource to be particularly complex. Over 70% of the answers imply that the respondents

do consider the product/services they outsource as highly integrated, while close to 55% of the answers implies that the respondents consider the product/services they outsource as quite specialized.

It was also explored how the companies considered their competitors outsourcing decisions, and whether or not this had an effect on their own decision. The results for this are shown in the following table.

Competitors outsource the same, in percentage									
	1	2	3	4	5	6	7	Total	n =
<b>Competitors outsource the same as us</b>	0,0	4,3	4,3	13,0	4,3	47,8	26,1	100,0	23
<b>This affected our decision</b>	21,7	34,8	21,7	4,3	4,3	8,7	4,3	100,0	23

Table 18: Consideration of competitors outsourcing decision and its effect, in percentage

For competitors outsourcing the same as them, the results show that 70% of the respondents' answers were ranged in the upper part of the scale, meaning that the respondents recognize that their main competitors outsource the same as them. As to the competitors decisions affecting the respondents decisions, close to 60% of the answers implies that the respondents decisions concerning outsourcing was not affected by their competitor's decision.

The following table presents the results concerning contract periods:

Average contract period		
	Number	%
<b>Responses</b>	23	100,0
<b>0-1 year</b>	10	38,5
<b>1-2 years</b>	6	23,1
<b>2-3 years</b>	6	23,1
<b>3-4 years</b>	1	3,8

Table 19: Average contract periods when outsourcing

Here it is shown that 38% of the answers imply that the respondents' average contract period are 0-1 years, and only 4% of the answers shows that they have contract periods exceeding three years. 23% of the answers imply 1-2 year contract periods, while 23% of the answers imply 2-3 year contract periods. The following table shows how frequent the respondents switch suppliers.



Switching supplier, in percentage									
	1	2	3	4	5	6	7	Total	n =
<b>Always switch supplier</b>	41,7	45,8	4,2	8,3	0,0	0,0	0,0	100,0	24
<b>Always consider other supplier</b>	8,3	12,5	0,0	29,2	12,5	4,2	33,3	100,0	24
<b>Always renew contracts</b>	20,8	33,3	16,7	4,2	12,5	8,3	4,2	100,0	24

Table 20: Frequency of switching suppliers, in percentage

With almost 90% of the answers being in the lower range it seems like the majority of the respondents are not eager to switch suppliers every time a contract period is over, and that this is not done on a general basis. Over 35% of the answers imply that a large part of the respondents often consider other possible suppliers at the end of a contract period, while few respondents rarely consider other suppliers. Over 50% of the answers imply that approximately half the respondents will not renew contracts with the supplier.

Further, it was explored for how long the respondents have outsourced product/services, and the results were as follows:

Length of outsourcing		
	Number	%
<b>Responses</b>	12	100,0
<b>0-1 year</b>	2	16,7
<b>1-2 years</b>	1	8,3
<b>2-3 years</b>	2	16,7
<b>3-4 years</b>	0	0,0
<b>More than 4 years</b>	7	58,3

Table 21: Length of outsourcing

The majority of the respondents have outsourced for more than four years, while some respondents have shorter experience with outsourcing.

## 5.2 Experiences

The following results attempt to answer the third research questions in this thesis, which concerns the respondent's experiences with outsourcing.

The following table presents the results of the respondents' experiences after their earlier outsourcing decision.

Experiences, in percentage									
	1	2	3	4	5	6	7	Total	n =
Cost savings was not as high	27,3	22,7	31,8	13,6	0,0	4,6	0,0	100,0	22
Became too dependent on the supplier	41,0	31,8	13,6	0,0	0,0	9,1	4,5	100,0	22
The supplier took advantage of us	54,6	22,8	4,5	13,6	4,5	0,0	0,0	100,0	22
Cultural distance	63,6	31,8	0,0	0,0	4,6	0,0	0,0	100,0	22
Poorer quality	31,9	18,2	22,7	22,7	0,0	4,5	0,0	100,0	22
Extra costs, quality control	18,2	4,5	27,3	22,7	13,6	9,2	4,5	100,0	22
Extra costs, finding a new vendor	27,3	36,4	9,1	13,6	13,6	0,0	0,0	100,0	22
Extra costs, new contracts	38,1	38,1	23,8	0,0	0,0	0,0	0,0	100,0	21
Expensive to have sufficient communication with the supplier	47,6	38,1	9,5	4,8	0,0	0,0	0,0	100,0	21
Not profitable because of large currency changes	71,4	28,6	0,0	0,0	0,0	0,0	0,0	100,0	21

Table 22: Experiences associated with outsourcing, based on results in percentage

Based on the table above, over 70% of the answers imply that the cost savings more or less fulfilled the respondents' expectations. Further, around 80% of the answers imply that the respondents' did not experience becoming too dependent on their supplier, or their supplier taking advantage of them. 95% of the answers indicate that the respondents did not experience any problems with cultural distance when outsourcing.

As for poorer quality, over 70% of the answers were on the lower range, meaning that the majority of the respondents did not experience this. When looking at the experience concerning hidden costs there are divided experiences when it comes to the cost of quality controls, as close to 30% of the answers implies that some of the respondents experienced this, while 55% of the answers imply that this was not experienced by the respondents.

Further, over 70% of the answers were ranged low as to experiences with hidden costs associated with finding a new vendor, and 100% of the answers were ranged low for experiences of hidden costs associated with drawing new contracts. This implies that the respondents have had minor experiences with this. As to having sufficient communication, over 80% of the answers imply that the majority of the respondents have not experienced any hidden costs associated with this. When looking at the experience with currency

changes, none of the respondents have ranged this higher than two on the scale, implying that this has not been experienced.

The results of whether the respondents own facilities in another country are shown in the following table.

Own facilities in foreign countries		
	Number	%
<b>Responses</b>	12	100,0
<b>Own one or more facilities in a foreign country</b>	6	50,0
<b>Do not own facilities in a foreign country</b>	6	50,0

Table 23: Do the respondents own facilities in foreign countries?

Six of the respondents own facilities in other countries. Of these respondents two of them established the facility themselves, one of them bought the facility after buying production related products/services from them during a longer period and the last three had done both. As to why the respondents had chosen to buy the facility, there were only four responses, making it difficult to see any tendencies.

As for which countries the respondents have outsourced to, there seems to be a tendency towards using both high-cost and low-cost countries, and the majority seems to have kept their outsourcing within Europe. Frequently mentioned countries were Norway, Germany, Finland, Poland and Romania. Further, the respondents answered whether they are thinking about outsourcing anything in the future and if they then would consider outsourcing to the same countries as before.

Outsource in the future		
	Number	%
<b>Responses</b>	13	100,0
<b>Yes</b>	9	69,2
<b>No</b>	4	30,8

Table 24: Outsource more in the future?

Outsource to other countries		
	Number	%
<b>Outsource in the future</b>	9	100,0
<b>Consider other countries</b>	5	55,6
<b>Do not consider other countries</b>	4	44,4

Table 25: Outsource to other countries?

As the table presents, almost 70% of the respondents consider outsourcing in the future and out of these, 55% consider other countries while 44% do not. As for which countries they consider outsourcing to in the future the former mentioned countries were brought up, in addition to countries in Asia and South-America.

In an attempt to map the respondent's earlier experience with outsourcing, it was explored whether the respondents had ever backsourced anything.

Backsourcing		
	Number	%
<b>Responses</b>	13	100,0
<b>Backsourced</b>	5	38,5
<b>Not backsourced</b>	8	61,5

*Table 26: Backsourcing*

The results based on the sample shows that 38.5% of the companies had backsourced one or several products/services, while the rest had not.

## 6 Discussion

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*This chapter presents the discussion, which is based on the industry description in chapter 2, the theory presented in chapter 3 and the results from the sample presented in chapter 5.*

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According to the theory, there has been a shift in why companies choose to outsource, from cost savings being the main objective towards considering outsourcing as a strategic choice with a focus on core competencies (Caniëls and Roeleveld, 2009; Kremic et al, 2006). When looking at the results from the sample, there seems to be a tendency toward the maritime industry in Møre & Romsdal outsourcing core competencies (See table 12). Based on additional information from the interviews there is reason to believe that they only outsource parts of their core, while keeping the rest in-house. A possible reason for this could be that knowledge and innovativeness is of the main competitive advantages for the maritime industry (Jacobsen, 2011; Rederi, 2012), and by outsourcing only parts of their core, the companies are less likely to lose their knowledge and thereby their competitive advantage. In addition to this, some of the respondents argued that a company is likely to be a better buyer of a product/service if it is not completely outsourced, since they then still possess knowledge about this product/service.

According to theory, a reason why companies choose to outsource is to focus on their core competencies (Kremic et al, 2006). The results from the questionnaire indicate that this is applicable for the respondents, since the majority states that the possibility to increase their focus on core was one of the main considerations in relation to their outsourcing decisions. Even though there is a small decrease in the number of respondents considering this for future outsourcing decisions, there are also fewer respondents not considering it. This might mean that the overall importance of focusing on core competencies is applicable for the maritime industry in Møre & Romsdal.

Looking at the results concerning labor costs when outsourcing, the majority of the respondents consider this as one of the main benefits, but there is not total agreement among the respondents. One explanation why the majority of the respondents consider lower labor cost as one of the main benefits when outsourcing is that the labor costs in Norway are high relative to Eastern-European and Asian countries (see e.g. Halse and Bjarna, 2011; Hervik et al, 2005; Nærings og handelsdepartementet, 2005). By

outsourcing, and getting lower labor costs, they could achieve a more competitive price on their products than if they produced everything in Norway. A possible reason why some of the respondents do not consider lower labor costs as one of the main benefits with outsourcing is the tendency towards a higher degree of automation in the European maritime industry. Higher degrees of automation might result in fewer man-hours needed. If the same process can be completed on less time in a high-cost country than in a low-cost country, differences in labor costs could be of less concern (ECORYS, 2009).

Based on the results from the questionnaire and information from the interviews it is clear that the respondents do not consider reducing future investments in knowledge as a reason to outsource. Quinn and Hilmer (1994) emphasize the importance of looking at the set of skill and knowledge, not the product itself, because a product can more easily be replaced than a set of skills. The maritime industry in Møre & Romsdal is a knowledge-based and innovative industry. Since this is considered one of their main competitive advantages, their knowledge and innovativeness can be considered as a part of their core competencies (Maritimt forum, 2012; Rederi, 2012). This could be seen in connection with few of the respondents outsourcing to get access to new and better knowledge. A possible reason why they don't seem too eager to take advantage over other companies' knowledge could be that they already possess some of the most innovative knowledge in the business. The latter could also explain why the respondents fear the loss of their own knowledge and skills. Simply said, it seems as the respondents are more concerned about keeping what they know in-house than gaining knowledge from others.

Overall, the sample shows tendencies towards higher efficiency not being one of the main reasons for outsourcing in the maritime industry in Møre & Romsdal. Information from the respondents gave the impression that efficiency is a complex term affected by many factors, such as lead time, degree of automation and the use of man-hours. Because efficiency is so complex, it might be difficult to know in advance if someone else is more efficient. Even though a supplier has an efficient production, there is a possibility for longer lead times due to for example transportation challenges or incorrect deliveries. This might give a less efficient solution when looking at the big picture, which could be an explanation why fewer respondents consider this benefit as a main motive for outsourcing in the future.

Cultural distance seems to have caused few problems for the respondents, since this was of limited concern before they took an outsourcing decision, and will be of limited concern in potential new outsourcing decision. In later years it has become more common to trade with foreign countries, which have resulted in the companies gaining more knowledge about foreign cultures and how to interact with these. An explanation could be that companies are more or less acquainted with the potential cultural differences before they go into business relationships, due to globalization. By being prepared, the cultural differences most likely have less impact on their relationships with companies in foreign countries.

The maritime industry has over the years been through crises that have led to demand fluctuations (ECORYS, 2009; Stortinget, 2009). In spite of this, the risk of fluctuations in demand, financial instability and currency changes seems to be of low concern, when looking at the respondents' answers. Considering the industries history, it might be natural to assume that they are aware of the possibility for something similar happening in the future, but the industry know that there is not much they can do about such fluctuations beforehand. The only thing they can do is to keep being innovative and develop their knowledge to stay as competitive as possible and be well prepared if, or when, fluctuations occur. This could partially explain why the respondents do not consider these risks as high as one might believe.

When companies outsource, the cost savings could be affected of unforeseen (hidden) costs (Gilley and Rasheed, 2000). There are some differences in how the respondents considered the risks of hidden costs before, and how they consider them in the future. Initially, most of the respondents considered the risk of hidden cost with finding a new supplier and drawing up contracts as relatively low, while the two other risks of hidden costs, concerning communication and quality controls, were considered to a certain extent. Looking at how they consider the risks of hidden costs in the future, it is clear that the respondents do not fear the risk of extra cost with finding a new supplier in the future. As for the extra cost associated with drawing up contracts and communication with the supplier, there are split opinions, but the majority does not fear this risk. A possible reason why the fear of the hidden costs mentioned is low, could be that the majority of the respondents have outsourced for more than four years, and thereby gained experience that makes them better suited to anticipate the extra costs that might occur.

The risk of hidden cost that the respondents do seem to fear is the hidden costs of more frequently quality controls. Based on information from the interviews, and the report from Hervik et al (2007), high quality is important for both shipyards and their suppliers. A possible reason why the respondents consider the risk of hidden costs associated with more frequent quality controls could be that it is difficult to foresee the quality when acquiring goods or services from external suppliers. Poor quality could have a negative effect on the respondent's reputation, resulting in a low threshold for quality control, which could increase the cost associated with this.

According to the theory a product/service is a less suitable candidate for outsourcing if it is complex, integrated or specialized (Kremic et al, 2006). Looking at the results from the sample, a majority of the respondents consider the products and services they outsource as quite integrated and relatively specialized, challenging this theory. The fact that most of the respondents outsource products and services, even though they have ranged them as specialized and integrated, could be explained by the maritime industry being a complex industry where the majority of the products/services are specialized and integrated. As stated earlier, in section 2.1.2, the maritime industry in Europe seems to have taken a specialization strategy where the focus is on innovation and development of new products (ECORYS, 2009). In the Norwegian maritime industry this can be shown by the focus on more specialized vessels, which have a high degree of customization (Rederi, 2012). By outsourcing integrated and specialized products and services, the fear of becoming too dependent on the supplier, and being exploited by the supplier, might increase. An example of this could be that a highly integrated product/service, that is outsourced, affects the buyer's total production, making the company quite dependent on their suppliers in order to avoid delays (Kremic et al, 2006). This could be an explanation to why the results shows a tendency towards the respondents considering the risk of the supplier taking advantage of them and the risk of becoming too dependent on the supplier to a certain extent.

The majority of the respondents answered that their main competitors outsource the same as them, making it apparent that the foundation for which products and services they outsource is similar across the industry. Through information from the respondents it appears that the shipyards have different views on how much to outsource and how, based on how they are organized and their strategic objectives. So even though they outsource



similar products and services as their competitors, they are not highly affected of their competitor's actions. Based on the results it appears that shipyards and suppliers have quite similar answers, on the questions regarding this, which give reason to believe that this might be applicable for the suppliers as well.

The majority of the respondents' states that increased production capacity and the ability to adapt workforce and production capacity to demand are considered as benefits when taking an outsourcing decision. Capacity flexibility is important for the companies to quickly adjust to fluctuations in demand (see e.g. Kakabadse and Kakabadse, 2000a; Kedia and Lahiri, 2007; Kremic et al, 2006; Quinn, 1999). As explained in section 2.2 the maritime industry in Møre & Romsdal has been exposed to demand fluctuations several times. Based on this, it is natural to assume that demand swings could be one reason why the respondents are concerned with staying flexible, and thereby looks at flexibility in their capacity as a benefit with outsourcing.

There are different benefits associated with having long- or short-term contracts. While a long contract period gives the opportunity to build a relationship with the supplier, a short contract period gives flexibility (Herath and Kishore, 2009). Looking at the results, the majority of the respondents do not use contracts periods that exceed two years. As learned through interviews, a large portion of the contracts in the maritime industry is attached to projects. Since most projects last around one year it is natural that the contract periods are short, which corresponds with the results from the questionnaire. Another effect of the contracts being attached to projects is the difficulties of predicting demands more than two years ahead. This makes it natural to use short-term contracts. Some of the respondents gave the impression that they, in addition to having short contracts, deliberately chose not to include volume specifications in their contracts because of unpredictable demand. The unpredictable demand creates a need for flexibility that might be achieved through short-term contracts without volume specification.

In the results, based on the sample, it is not given that the respondents will renew the contract with the supplier when the contract period is over. A reason for this could be that some of the respondents have several suppliers for one product/service. They then have the possibility to alternate between suppliers they already have a relationship with, using different suppliers on different projects, or try someone new. By having more options, they

might become more flexible and secure themselves against becoming too dependent on one supplier. Based on information from the respondents, dual sourcing could also be used as an incentive to increase their suppliers performance, since none of them then can take it for granted that they get their contract renewed.

According to the experiences the respondents have had with outsourcing, few respondents have had negative experiences. The only statement that stood out was the experience of higher costs due to frequent quality controls, which could be seen together with the majority of the respondents fearing poorer quality when they outsource. Based on information from the interviews, it appeared that several of the respondents initially had problems with the quality on products they chose to outsource. These experiences might be one of the reasons why the majority of the respondents do not consider the possibility of improving quality as a motive for outsourcing. In most cases problems with poor quality adjusted over time, but in some cases it led to companies' backsourcing large parts of the products they initially outsourced. One reason why companies' backsourced seemed to be that they felt the quality was too poor, and the cost savings associated with outsourcing disappeared as a result of increased costs due to quality controls. In addition to this, more similar wages and other social and economic benefits, due to globalization, might lead to backsourcing being more common (Halse and Bjarnar, 2011). An explanation for this might be that more similar wages leads to lower cost savings, when outsourcing, resulting in the products/services outsourced to save costs being backsourced.

About 50% of the respondents own facilities in foreign countries. There are no clear tendencies on how these were established and why, but it is proved that it is not uncommon for the maritime industry to have ownership in foreign countries. A reason for this could be that the maritime industry is a global industry, with customers spread all over the globe and where closeness to customers could be important in order to maintain customer relationships. By owning facilities in foreign countries the companies can achieve benefits, such as lower labor cost, while maintaining control over the production and the quality.

Looking at which countries the respondents outsource to there seem to be a mix of low-cost and high-cost countries. Low-cost countries that were frequently mentioned by the respondents were mainly eastern-European countries, such as Romania and Poland. For

future outsourcing decisions Asia and South-America seems to be considered as options. The most mentioned high-cost countries were Sweden, Finland, Germany and Norway. Through the interviews, it appears that a possible reason why companies consider outsourcing more to both high-cost and low-cost countries could be that the differences in costs may decrease over time. The basis for this is that if high-cost countries succeed in automating their processes and becomes more efficient using less man-hours than low-cost countries, they could be able to partially weigh up for the lower labor cost. Another reason mentioned in the interviews was that the choice of country is also based on which country has the highest knowledge about the product/service acquired, and not just on who has the lowest price. As most of the high-cost countries geographically are closer to Norway, this could also mean cost savings associated with transportation and lead time. But as made clear in the interviews, closeness do not automatically give shorter lead times, and because of the complexity of the term efficiency, it might be difficult to know how this evolves.

## 7 Conclusion

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*This chapter presents the conclusion for this thesis, based the industry description in chapter 2, the theory presented in chapter 3, and the results from the sample presented in chapter 5.*

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This study has explored the outsourcing tendencies in addition to the considerations and experiences associated with outsourcing, for the maritime industry in Møre & Romsdal. The aim for the study was to explore whether the maritime industry in Møre & Romsdal challenge the theory and base their outsourcing decisions on cost, in addition to outsource their core competencies. Further, the objective was to explore the considerations that were taken in association with an outsourcing decision, concerning risks and benefits, and which experiences had been made.

As this thesis is aimed at a specific industry in a limited geographical area and the population is relative small, the sample size used in this thesis is relative small. Even though the sample size limits the possibility to draw general conclusions, the sample consists of some of the largest operators within the industry in this geographical area, which strengthen those respondents' answers. In addition to this, the response rate for the sample was 31.3%, which is relatively high. This gives reason to believe that the results of this thesis might be representative for the population, but a larger sample is needed to confirm the results. Since the results in this thesis are based on answers from the maritime cluster in Møre & Romsdal, there is reason to believe that the results could be representative for other similar maritime clusters.

In the results, based on the sample, there seems to be a tendency towards the maritime industry in Møre & Romsdal outsourcing their core competences. But according to the additional information, there is reason to believe that they still try to keep a part of the core in-house to not lose knowledge, which is one of their main competitive advantages. This is supported by the results indicating that the respondents outsource to focus on their core competencies, in addition to fear the loss of knowledge when outsourcing.

Based on the samples' experiences with outsourcing, the companies seem to outsource to both low-cost and high-cost countries. This might indicate that price no longer is the main benefit for outsourcing. Based on the results the cost savings is still of high consideration when outsourcing, but it is not the sole reason why the respondents outsource.

Based on the maritime industry being highly exposed to demand fluctuations, the benefit of achieving higher flexibility seems to be of great consideration when outsourcing. This is supported by the use of short-term contracts and capacity flexibility being a highly considered benefit with outsourcing.

In addition to this, the maritime industry in Møre & Romsdal is a knowledge-based and innovative industry. They already possess some of the most innovative knowledge in the business and it seems as the respondents are more concerned about keeping what they know in-house than gaining knowledge from others. One of the main considerations when outsourcing is the risk of poorer quality, which is natural since the maritime industry in Møre & Romsdal believes that high quality is one of their competitive advantages.

## 8 Further research

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*This chapter presents suggestions for further research.*

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This thesis was aimed at a specific industry in a limited geographical area, which gave a relative limited population and thereby a limited sample size.

As this thesis has focused on parts of the maritime cluster in Møre & Romsdal, an approach for further research could be to explore if the tendencies found in this thesis is applicable for other Norwegian clusters that delivers products and services to the maritime/oil and gas industry. It could also be explored whether there are differences between the outsourcing considerations of companies situated in clusters and the companies that are not.

In order to draw more general conclusions of the Norwegian maritime industry's considerations when outsourcing, the population size could be expanded to include the entire Norwegian maritime industry. This could make it possible to compare the Norwegian maritime industry's outsourcing tendencies up against the maritime industry in other countries. The population could also be expanded to include the entire maritime industry in Europe in order to compare this to the maritime industry in other continents, such as Asia.

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## 10 Appendix

### 10.1 Questionnaire

We are two Norwegian students who studies Master of Science in logistics at Molde University College. In our final master thesis we have chosen to look at outsourcing in the maritime industry in Møre & Romsdal.

Through this survey we hope to map what the maritime industry most commonly outsource, experiences companies within this industry have developed in this context, as well as assessments they have made regarding this.

In this context we have decided to define outsourcing as:

*“Acquiring an activity from an external source instead of it being performed by the organization itself”*

We can assure you that the information you give us will be part of anonymous report, and no individual respondents will be identified. Your answers will be seen combined with the answers from other respondents, and will only be used for statistical analysis and general discussion.

Thank you in advance for your help. Sincerely, Karina Skeide & Anne Høystakli.

## Questionnaire

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1. Does your company want to receive a summary of the results from the questionnaire?

Yes	
No	

2. General information

Name of the company	
Year of establishment	
Country of origin	
Number of employees	
Annual sales	
Your title/function	

3. In the following alternatives; which type of industry does your company belong to?

<b>Shipyard</b>	
<b>Equipment vendor</b>	
<b>Service provider</b>	
<b>Others</b>	

4. Which of the following product/services do you consider as your company's core activity (ies)?

*Please mark all relevant categories*

<b>Propellers/Thrusters</b>	
<b>Gear</b>	
<b>Engines</b>	
<b>Hull</b>	
<b>Ship outfitting/interior (Accommodation)</b>	
<b>Pipe/pipe systems and installation</b>	
<b>Smaller steel constructions/Mechanical components (winches,vents)</b>	
<b>Design</b>	
<b>Ship consult/ Project Management services</b>	
<b>Electrical installations</b>	
<b>Automation solutions</b>	
<b>Ship equipment</b>	
<b>Deck machinery (all mechanical equipment/aids on deck)</b>	
<b>Repair/maintenance/reconstruction of ships</b>	
<b>It-services</b>	
<b>Administrative services (law, accounting, canteen etc.)</b>	
<b>Other</b>	

5. Which of the following product/services do you have other companies to perform instead of performing them yourself, and for how long have you outsourced it?

*Please mark all products/services you outsource*

	0-1 year	1-2 years	2-3 years	3-4 years	More than 4 years
<b>Propellers/Thrusters</b>					
<b>Gear</b>					
<b>Engines</b>					
<b>Hull</b>					
<b>Ship outfitting/interior (Accommodation)</b>					
<b>Pipe/pipe systems and installation</b>					
<b>Smaller steel construction/ Mechanical components (winches, Design</b>					
<b>Ship consult/ Project Management</b>					
<b>Electrical Installations</b>					
<b>Automation solutions</b>					
<b>Ship equipment</b>					
<b>Deck machinery (all mechanical equipment/ aids on deck</b>					
<b>Rapair/maintenance/ reconstruction of ships</b>					
<b>Other</b>					

**6. Within the relevant products/services; to what extent do you agree with the following statements? Range all statements on a scale from 1-7, on all products/services your company outsource, where 1=not agree and 7=agree**

	Propellers/Thrusters	Gir	Engines	Hull	Accomodation	Piping	Smaller steal constructions	Design	Ship consultant	Electrical installations	Automation solutions	Ship equipment	Deck machinery	Aftermarket	Other
<b>We outsourced..</b>															
<b>To get lower labor cost</b>															
<b>To reduce future investments in knowledge</b>															
<b>To avoid investing in new facilities</b>															
<b>To get access to new and better knowledge from an external source</b>															
<b>To have greater focus on our core competencies</b>															
<b>To better adapt our workforce to the demand</b>															
<b>To better adapt the production capacity to the demand</b>															
<b>To get increased capacity within the production</b>															
<b>Because someone else could perform the activity more efficient</b>															
<b>To improve the quality on core activities held in-house</b>															
<b>To achieve higher quality than we could achieve ourselves</b>															

**7. Within the relevant products/services; to what extent do you agree with the following statements? Range all statements on a scale from 1-7, on all products/services your company outsource, where 1=not agree and 7=agree**

	Propellers/Thrusters	Gir	Engines	Hull	Accomodation	Piping	Smaller steal constructions	Design	Ship consultant	Electrical installations	Automation solutions	Ship equipment	Deck machinery	Aftermarket	Other
We considered the risk..															
Of becoming too dependent on the supplier															
That the supplier would use its position to exploit us and gain advantages on its own behalf															
Of losing knowledge/skills and/or corporate memory (core competencies)															
That the cultural distance would cause problems															
Of extra costs due to drawing new contracts															
Of extra costs associated to the selection process of new vendors															
Of higher management costs due to greater communication needs															
Of extra costs because of more frequent quality controls															
Of getting poorer quality															
Of unexpected changes in demand in the market we operate in															
Of financial instability in the country we trade in															



**8. Based on your experiences with outsourcing; to what extent do you agree with the following statements? Range all statements on a scale from 1-7, on all products/services your company outsource, where 1=not agree and 7=agree**

	Propellers/Thrusters	Gear	Engines	Hull	Accomodation	Piping	Smaller steal construction	Design	Ship consultant	Electrical installations	Automation solutions	Ship equipment	Deck machinery	Aftermarket	Other
<b>Based on our experiences</b>															
<b>The cost savings were not as high as first anticipated</b>															
<b>We became to dependent on the supplier</b>															
<b>The cultural distance became to big</b>															
<b>The supplier used its position to exploit us to gain advantage on its own behalf</b>															
<b>The quality did not live up to the expectations</b>															
<b>The supplier where not able to adapt expected amount according to our expectations</b>															
<b>We got higher costs due to quality control</b>															
<b>We got higher costs connected to finding a new vendor</b>															
<b>We got higher costs connected to the need for drawing new contracts</b>															
<b>It was difficult to have sufficient communication with the supplier</b>															
<b>It was too expensive to have sufficient communication with the supplier</b>															
<b>Large currency changes lead to the outsourcing decision no longer beeing profitable</b>															

**9. Out of the products/services your company outsources, do you consider them as complex?** (In this case we think of complex as: The product is expensive to produce, require a lot of resources, consists of several components, and are highly technical)

*Range on a scale from 1-7 where 1= not complex and 7= highly complex*

*Please mark all products/services you outsource*

Propellers/Thrusters	
Gear	
Engines	
Hull	
Ship outfitting/interior (Accommodation)	
Pipe/pipe systems and installation	
Smaller steel constructions/Mechanical components (winches,vents)	
Design	
Ship consult/ Project Management services	
Electrical installations	
Automation solutions	
Ship equipment	
Deck machinery (all mechanical equipment/aids on deck)	
Repair/maintenance/reconstruction of ships	
Other	

**10. Out of the products/services your company outsources, do you consider them as integrated?** (In this case we think of integrated as: The product we have outsourced highly affects our own production, and because of that it requires good and frequent communication between us and our supplier)

*Range on a scale from 1-7, where 1= not integrated, 7= highly integrated*

*Please mark all products/services you outsource*

Propellers/Thrusters	
Gear	
Engines	
Hull	
Ship outfitting/interior (Accommodation)	
Pipe/pipe systems and installation	
Smaller steel constructions/Mechanical components (winches,vents)	
Design	
Ship consult/ Project Management services	
Electrical installations	
Automation solutions	
Ship equipment	
Deck machinery (all mechanical equipment/aids on deck)	
Repair/maintenance/reconstruction of ships	
Other	

**11. Out of the products/services your company outsources; Do you consider them as specialized?** *Range on a scale from 1-7 where 1=not specialized and 7=highly specialized*

*Please mark all products/services you outsource*

Propellers/Thrusters	
Gear	
Engines	
Hull	
Ship outfitting/interior (Accommodation)	
Pipe/pipe systems and installation	
Smaller steel constructions/Mechanical components (winches,vents)	
Design	
Ship consult/ Project Management services	
Electrical installations	
Automation solutions	
Ship equipment	
Deck machinery (all mechanical equipment/aids on deck)	
Repair/maintenance/reconstruction of ships	
Other	

**12. Out of the products/services your company outsources: How long is an average contract period?**

*Please mark all products/services you outsource*

	0-1 year	1-2 years	2-3 years	3-4 years	More than 4 years
Propellers/Thrusters					
Gear					
Engines					
Hull					
Ship outfitting/interior (Accommodation)					
Pipe/pipe systems and installation					
Smaller steel constructions/Mechanical components (winches,vents)					
Design					
Ship consult/ Project Management services					
Electrical installations					
Automation solutions					
Ship equipment					
Deck machinery (all mechanical equipment/aids on deck)					
Repair/maintenance/reconstruction of ships					
Other					

**13. On a scale from 1-7, to what extent to you agree with the following statements?**

*Range on a scale from 1-7 where 1=not agree 7= agree*

*Please mark all products/services you outsource*

	Propellers/Thrusters	Gear	Engines	Hull	Accommodation	Piping	Smaller steel constructions	Design	Ship consultant	Electrical installations	Automation solutions	Ship equipment	Deck machinery	Aftermarket	Other
We always change suppliers after the contract period is completed															
We always evaluate other alternatives before drawing new contracts															
We always renew contracts															

**14. From which part of the world do you mainly buy the following activities?**

*Alternatives: Norway, Sweden, Denmark, Romania, Poland, Russia, Croatia, Brazil, Singapore, Vietnam, India, China, Australia, other*

*Please mark all products/services you outsource*

Propellers/Thrusters	Country
Gear	
Engines	
Hull	
Ship outfitting/Interior (Accommodation)	
Pipe/pipe systems and instillation	
Smaller steel constructions/Mechanical components (winches, vents)	
Design	
Ship consult/Project management services	
Electrical installations	
Automation solutions	
Ship equipment	
Deck machinery (all mechanical equipment/aids on deck)	
Repair/maintenance/ reconstruction of ships (Aftermarket)	
Other	

**15. Does your company own facility in a foreign country?**

Yes	
No	

**16. If yes, How many facilities?**

\_\_\_\_\_

**17. If you own facilities in a foreign country, which of the following statements are most suitable for your company?**

*Please mark all relevant*

We bought the facility after buying production related products/services from them during a longer periode	
We bought the facility based on its good reputation in the industry	
We established the facility ourselves	

**18. Out of the following products/services; has your company outsourced some of these earlier for so brought in-house?**

*Please mark all relevant products/services where this is the case*

Propellers/Thrusters	
Gear	
Engines	
Hull	
Ship outfitting/Interior (Accommodation)	
Pipe/pipe systems and instillation	
Smaller steal constructions/Mechanical components (winches, vents)	
Design	
Ship consult/Project management services	
Electrical installations	
Automation solutions	
Ship equipment	
Deck machinery (all mechanical equipment/aids on deck)	
Repair/maintenance/ reconstruction of ships (Aftermarket)	
Other	

**19. If yes, why? Specify**

\_\_\_\_\_

**20. Based on your experiences with deciding to buy instead of outsource; to what extent do you agree with the following statements?**

*Range on a scale from 1-7, where 1= not agree, 7=agree*

	1	2	3	4	5	6	7
<b>We bought the facility (supplier) because we became too dependent on the supplier</b>							
<b>We bought the facility (supplier) because the cultural distance became too big</b>							
<b>We bought the facility (supplier) to gain more control over the quality</b>							
<b>We bought the facility (supplier) to gain more control over the information flow</b>							
<b>We bought the facility (supplier) to gain more control over the produced amount (quantity)</b>							
<b>We bought the facility (supplier) to gain more control over the production costs</b>							

**21. To what extent does your main competitor(s) outsource the same products/services as you?**

*Range on a scale from 1-7 where 1= not at all and 7= to a large extent*

	1	2	3	4	5	6	7
<b>Propellers/Thrusters</b>							
<b>Gear</b>							
<b>Engines</b>							
<b>Hull</b>							
<b>Ship outfitting/interior (Accommodation)</b>							
<b>Pipe/pipe systems and installation</b>							
<b>Smaller steel constructions/Mechanical components (winches,vents)</b>							
<b>Design</b>							
<b>Ship consult/ Project Management services</b>							
<b>Electrical installations</b>							
<b>Automation solutions</b>							
<b>Ship equipment</b>							
<b>Deck machinery (all mechanical equipment/aids on deck)</b>							
<b>Repair/maintenance/reconstruction of ships</b>							
<b>Other</b>							

**22. To what extent did this affect your own outsourcing decision?**

*Range on a scale from 1-7 where 1= not at all and 7= to a large extent*

*Please mark all products/services you outsource*

	1	2	3	4	5	6	7
Propellers/Thrusters							
Gear							
Engines							
Hull							
Ship outfitting/interior (Accommodation)							
Pipe/pipe systems and installation							
Smaller steel constructions/Mechanical components (winches,vents)							
Design							
Ship consult/ Project Management services							
Electrical installations							
Automation solutions							
Ship equipment							
Deck machinery (all mechanical equipment/aids on deck)							
Repair/maintenance/reconstruction of ships							
Other							

**23. Does your company plan to outsource anything in the near future?**

Yes	
No	

**24. If yes, what?**

\_\_\_\_\_

**25. Based on earlier experiences; to what extent do you agree in the following statements when you now are going to outsource? Range on a scale from 1-7**

*where 1=not agree and 7=agree*

We outsource..	1	2	3	4	5	6	7
To get lower labor cost							
To reduce future investments in knowledge							
To avoid investing in new facilities							
To get access to new and better knowledge from an external source							
To have greater focus on our core competencies							
To better adapt our workforce to the demand							
To better adapt the production capacity to the demand							
To get increased capacity within the production							
Because someone else could perform the activity more efficient							
To improve the quality on core activities held in-house							
To achieve higher quality than we could achieve ourselves							

26. To what extent do you agree in the following statements when you now are going to outsource? Range on a scale from 1-7 where 1=not agree and 7=agree

We considered the risk..	1	2	3	4	5	6	7
Of becoming too dependent on the supplier							
That the supplier would use its position to exploit us and gain advantages on its own behalf							
Of losing knowledge/skills and/or corporate memory (core competencies)							
That the cultural distance would cause problems							
Of extra costs due to drawing new contracts							
Of extra costs associated to the selection process of new vendors							
Of higher management costs due to greater communication needs							
Of extra costs because of more frequent quality controls							
Of getting poorer quality							
Of unexpected changes in demand in the market we operate in							
Of financial instability in the country we trade in							

27. Do you consider outsourcing to other foreign countries than earlier?

Yes	
No	

28. If yes, which countries? \_\_\_\_\_