Bachelor's thesis

NTNU
Norwegian University of Science and Technology
Department of Ocean Operations and Civil Engineering

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How can the purchasing department of maritime companies improve efficiency through supplier base reduction and supplier development?

Bachelor's thesis in Shipping Management
Supervisor: Viktoriia Koilo
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Abstract

For shipping firms, having knowledge on how to manage supplier bases and how to develop suppliers is not only useful but also essential. This is due to the fact that major portions of the value creation process frequently take place with the customers of the organization. When operating in a market that is defined by high international rivalry, the potential of suppliers must be leveraged more efficiently in order to maintain their competitiveness. It is possible to do this through the reduction of supplier bases and the development of suppliers, which ultimately leads to an improvement in the overall performance of the supply chain.

This bachelor's thesis focuses on the supplier base and supplier development and will explain the problem *"How can the purchasing department of maritime companies improve efficiency through supplier base reduction and supplier development?".* To answer the problem statement, three sub-questions were made which should help to answer the problem. These three are:

1. *What are the conventional or typical procedures as per the theory, commonly referred to as best practices?*
2. *What are the advantages and disadvantages with supplier base reduction and how is it done?*
3. *How is the supplier development efforts done by the procurement department and what are the most critical factors for it to be a success?*

In order to establish a reliable foundation for comparison, I conducted interviews with a total of five shipping businesses operating within the offshore shipping. I then compared the findings from the interviews with the literature review that had been conducted in advance.

The literature emphasizes the potential advantages of reducing the supplier base, as well as the reasons why this can enhance a company's competitiveness. However, there is a limited quantity of published material that specifically addresses the technique. This study will improve our understanding of the reasons that are given priority when reducing a supplier base. It may provide an approach to the process and identify key success criteria. The

literature on supplier growth is considerable; nevertheless, most of it focuses on the perspective of the purchaser.

NTNU

Sammendrag

For rederier er det ikke bare nyttig, men også essensielt å ha kunnskap om hvordan man styrer leverandørbaser og utvikler leverandører. Dette skyldes at store deler av verdiskapningsprosessen ofte skjer med organisasjonens kunder. Når man opererer i et marked preget av høy internasjonal konkurranse, må potensialet til leverandører utnyttes mer effektivt for å opprettholde konkurranseevnen. Dette kan oppnås ved å redusere leverandørbasen og utvikle leverandører, noe som til slutt fører til forbedring av den generelle ytelsen i forsyningskjeden.

Denne bacheloroppgaven fokuserer på leverandørbasen og leverandørutvikling og vil forklare problemet "Hvordan kan innkjøpsavdelingen i maritime bedrifter forbedre effektiviteten gjennom reduksjon av leverandørbasen og utvikling av leverandører?". For å besvare problemstillingen ble det formulert tre delspørsmål som skal hjelpe til med å finne svar på problemet. Disse tre er:

1. Hva er de konvensjonelle eller typiske prosedyrene i henhold til teorien, vanligvis referert til som beste praksis?
2. Hva er fordelene og ulempene med reduksjon av leverandørbasen, og hvordan gjøres det?
3. Hvordan gjennomføres innsatsen for leverandørutvikling av innkjøpsavdelingen, og hva er de viktigste suksesskriteriene?

For å etablere et pålitelig sammenligningsgrunnlag gjennomførte jeg intervjuer med totalt fem rederier som opererer innenfor offshore shipping. Deretter sammenlignet jeg funnene fra intervjuene med litteraturgjennomgangen som ble gjennomført på forhånd.

Litteraturen legger vekt på de potensielle fordelene ved å redusere leverandørbasen, samt grunnene til at dette kan styrke selskapets konkurranseevne. Imidlertid er det begrenset mengde publisert materiale som spesifikt adresserer teknikken. Denne studien har potensial til å forbedre forståelsen av grunnene som prioriteres ved reduksjon av en leverandørbase. Den kan gi en tilnærming til prosessen og identifisere sentrale suksesskriterier. Litteraturen om leverandørutvikling er betydelig; likevel fokuserer det meste på forbrukerens perspektiv. Denne studien har som mål å gi en grundig perspektiv på utviklingen av leverandører ved å presentere kjøperens synspunkt.

Preface

During the fifth semester of the Shipping Management program, we had an opportunity to write our bachelor's thesis while interning at a relevant company. The aim was to gain practical experience in the shipping industry while receiving guidance from teachers in writing the assignment. Over the last two years of study, we took many exciting subjects with good and inspiring teachers. This provided me with considerable knowledge and a better understanding of the maritime industry. My interest in shipping has also significantly increased, and it was fun to complete an internship at DOF Management AS (DOF) while writing my bachelor's thesis.

I considered potential topics for the thesis for a long time. Eventually, I discovered that I would spend my internship period in the purchasing department at DOF; thus, it was natural for the topic to be relevant to what I would be working on during the internship period. Ultimately, I decided to focus on how the purchasing department could become more efficient through supplier base reduction and supplier development.

I would like to extend a major thank you to the companies that contributed to the interviews as informants. I would also like to thank DOF Management AS for taking me on as an intern and showing me what it is really like to work for a shipping company. Furthermore, I would like to extend a major thank you to my supervisor at NTNU, Viktoriia Koilo, who was a great help throughout the internship period.

Finally, I would like to thank my fellow students, friends, and family, who gave me significant support and motivation during the research project.

5006 Bergen, 17.12.2023

Erlend Mo Rognes

Erlend Mo Rognes

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1. Introduction

The first chapter of this report explores the theoretical background for my research. I examine the design of the research question and provide an overview of the report's structure. Furthermore, I present DOF Management, the company that helped to provide the basis for solving the research problems.

For businesses, it is important to establish good connections not only with major suppliers but also smaller ones. This ensures a smooth supply chain and, in turn, a high-quality final product. Organizations often develop routines for their processes, and there are various theories on how to maintain such relationships. Since there are likely other aspects that do not perform well despite getting considerable attention, it is often difficult to tell if what works can be improved further. It is crucial to understand how a business works. Examining the supplier base or overall supplier development can be useful for uncovering challenges or issues that might otherwise stay hidden.

1.1 Problem statement

With a background in the theme of procurement, I formulated the following problem for the thesis:

"How can the purchasing department of maritime companies improve efficiency through supplier base reduction and supplier development?"

I further divided the main research question into three sub-questions to make the report clearer for readers. These sub-questions helped shed light on various aspects and situations related to the research issue; they are also mentioned in the conclusion. The three sub-questions are as follows:

1. *What are the conventional or typical procedures as per the theory, commonly referred to as best practices?*
2. *What are the advantages and disadvantages of supplier base reduction?*
3. *How does the procurement department pursue supplier development efforts, and what are the most critical factors in their success?*

1.2 Background

DOF Group ASA (DOF) is a prominent and well-established Norwegian global shipping and offshore services company with a significant presence in the international offshore industry. With a history that spans several decades, DOF has earned a strong reputation for its expertise, diverse fleet of vessels, and comprehensive range of subsea and offshore solutions.

DOF was founded as a shipping company in the 1980s. Over the years, it has evolved and expanded to adapt to the changing demands of the offshore industry. During my internship I worked for DOF Management AS, which is a subsidiary of DOF Group ASA. DOF Management is responsible for the operation of the ships.

One of the key strengths of DOF is its extensive and technologically advanced fleet of offshore vessels. The latter serve various purposes and include platform supply vessels, anchor handling tug supply vessels, and construction support vessels. The company's fleet is equipped with state-of-the-art technology and equipment that are tailored to meet the demands of offshore operations, which makes DOF a versatile and reliable partner for a wide range of projects.

DOF´s operations extend across key offshore regions around the world. The company has a significant presence in regions such as the North Sea, Brazil, the Gulf of Mexico, and other offshore energy hubs. Its ability to conduct global operations positions it as a trusted service provider for clients with diverse offshore requirements.

1.3 Limitations

Given the extensive exploration of the theoretical background, problem formulation, and introduction of DOF ASA, it is crucial to recognize certain limitations that are inherent to the scope of this study.

First, its focus on the maritime industry, as exemplified by DOF, may limit its generalizability to other industries. Supplier base and supplier development can significantly vary across sectors, and the specifications of the maritime context may not seamlessly apply to different business landscapes. The research primarily focuses on improving the efficiency of purchasing departments through the reduction and development of supplier bases. However, wider organizational dynamics, external economic factors, and industry-specific challenges cannot be fully captured within this limited focus. It is important to recognize that organizational effectiveness is influenced by multifaceted factors.

Second, although the study provides valuable insights, its timeframe may not encapsulate the long-term effects and sustainability of the proposed strategies. Long-term trends and companies' adaptability to supplier base reduction and supplier development over time may require further investigation. Third, although the emphasis on DOF in this thesis provides a rich case study, it may introduce some bias. The company's unique characteristics and operational context may affect the transferability of findings to companies with distinct structures or operational models.

Fourth, although comprehensive, the literature review and theoretical background may not cover all potential perspectives or new theories in the rapidly developing field of procurement.

2. Theory

In this chapter, I present the theoretical approaches that provided the foundation for understanding the research question. This theory formed the basis for the argumentation and discussion of my findings in chapter four and five. In the first part of this chapter, I explain the basic literature on purchasing to provide a basis for the literature on supplier bases and supplier development. Then, the literature on supplier bases and supplier development are presented.

2.1 Purchasing function

Within an organization, the purchasing function is of great strategic and financial importance, as it directly affects the company's profitability, efficiency, and competitiveness. Procurement goes far beyond a simple transaction of goods and services; it represents a complex process that influences several aspects of business operations. Over the years, research and practice have emphasized that a well-functioning procurement function is crucial for organizational success.

The procurement function not only concerns cost reduction but can also influence an organization's strategic goals, market position, and sustainability. The book published by Monczka et al. (2015) emphasized that effective procurement management is associated with improvements in a company's competitiveness and sustainability. This connection is attributed to the purchasing function's role in managing the supply chain, developing supplier collaboration, and ensuring access to critical resources.

In addition to cost efficiency, risk management is a critical dimension of the purchasing function. By evaluating and managing supply chain risks, the purchasing department can help minimize the negative impacts of events such as supplier failures, price fluctuations, and natural disasters. This aspect becomes particularly relevant in categories such as bottleneck items, in which shortages of even small components can cause significant production disruptions and increase costs.

Furthermore, the purchasing function plays a central role in supporting innovation and product development. By working closely with suppliers, the purchasing department can influence the design, material selection, and technological aspects of products. This is particularly relevant in the category of strategic articles, in which collaboration between suppliers and buyers often results in tailor-made solutions that provide a competitive advantage for the maritime companies.

In addition to handling external conditions, the procurement function plays a role in ensuring internal efficiency. By implementing best practices for process optimization, standardization, and digitization, the purchasing department can reduce administrative costs and increase productivity. This helps to free up resources that can be used more strategically (e.g., handling strategic and bottleneck items).

2.2 Kraljic model

The publication of Peter Kraljic's article "Purchasing Must Become Supply Management" in the *Harvard Business Review* in 1983 marked a significant shift in how companies viewed purchasing. Kraljic introduced a simple but powerful matrix that provided organizations with a framework for analyzing and classifying their purchasing portfolio. This matrix is based on two central variables: the financial importance of the purchase and supply risk (Brynhildsvoll, 2019).

The first dimension, the financial importance of the purchase, included criteria such as the proportion of purchasing costs in relation to total costs, the degree of value creation linked to the product, and the profitability profile. This variable allowed companies to assess the criticality of a particular purchase to its business based on financial factors (Webb, 2017).

The second dimension, supply risk, included criteria such as the delivery situation, the type of market for the product, and technological developments. This variable addressed the risk associated with the supply chain, which could be affected by factors such as supplier reliability, product availability on the market, and technological obsolescence.

When combined, these two dimensions form the matrix presented in Figure 1. This matrix allowed companies to place each procurement element into one of four quadrants based on its financial importance and supply risk. They could then use these quadrants to group the entire purchasing portfolio into four categories, non-critical, heavyweight, bottleneck and strategic items.

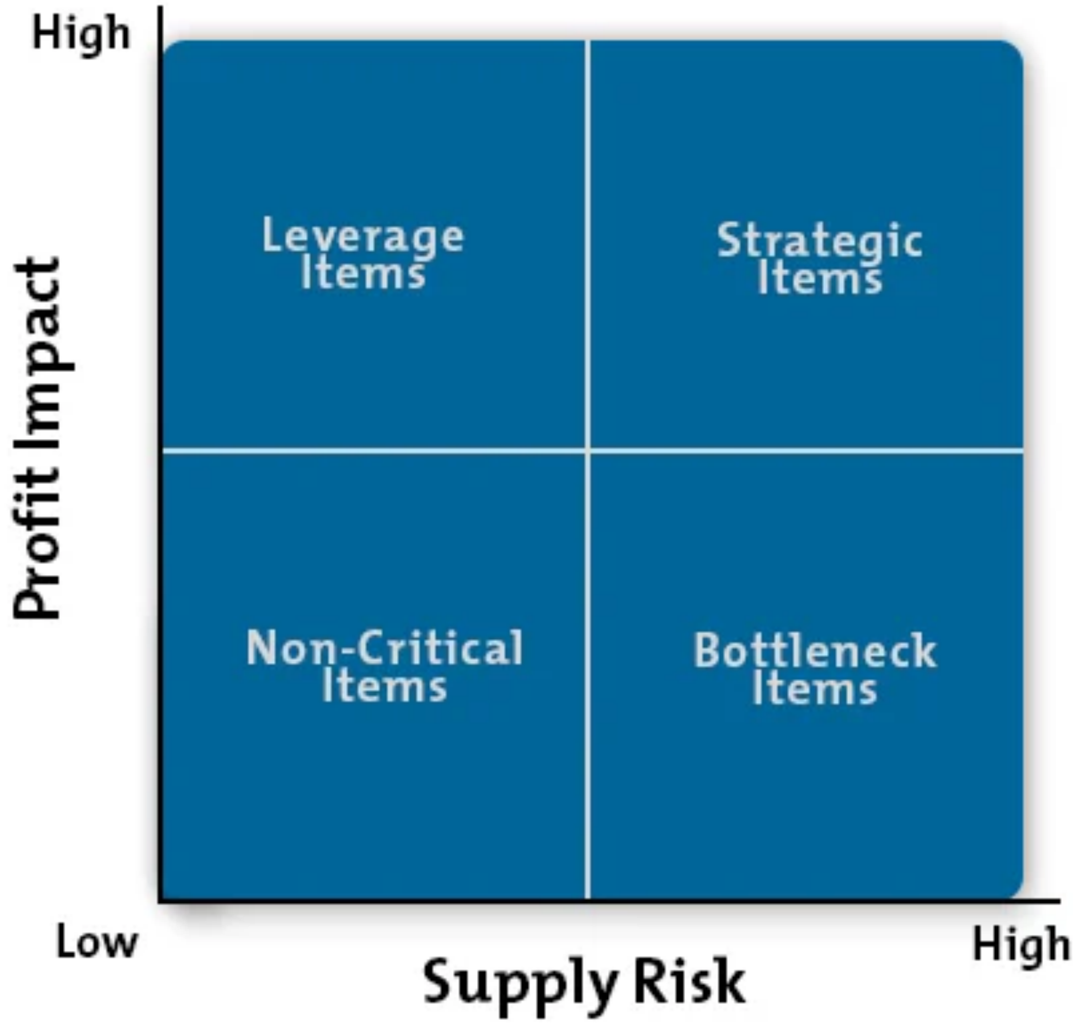

Figure 1 - Kraljic model (MindTools, 2023)

By using this model, companies could analyze and classify all of their purchases, including materials, components, services and products. The matrix enabled a differentiated approach to dealing with different suppliers and helped companies to adapt their relationship with each supplier based on the specific characteristics of that procurement.

2.2.1 Non-critical items

Non-critical items form a category of the purchasing portfolio characterized by low economic importance and minimal supply risk. They mainly include standardized products that are easy to acquire based on technical and commercial criteria. Examples of such products include office furniture, personal computers, and tools (Webb, 2017).

The number of transactions in this category is high, which means that products are frequently ordered. At the same time, the unit cost is low, and there are several alternative suppliers available for each product. Costs in this category comprise a small proportion of total procurement costs, which makes it a less critical part of the procurement function to spend significant time on.

An effective approach to handling non-critical items is to rationalize the work associated with them. This can be achieved by implementing framework agreements with a duration of one to three years with suppliers. These agreements regulate volume and price and thus provide predictability and stability in the supply chain. Using this strategy, the purchasing function can free up time and resources that can be directed towards more critical supplier matters (Webb, 2017).

By using effective management tools such as framework agreements, organizations can optimize their procurement of non-critical items. This not only frees up resources but also facilitates a more strategic approach to managing supplier relationships, especially for those maritime companies with greater financial importance and higher supply risk. In this way, businesses can achieve balance in the purchasing function by proportionately dedicating resources according to the importance and risk of each part of the purchasing portfolio (Brynhildsvoll, 2019).

2.2.2 Heavyweight items

Heavyweight items are a category of the purchasing portfolio characterized by significant financial importance but low supply risk. This category included a mix of standard and special products and constitutes a significant proportion of an organization's total purchasing costs. Examples of heavyweight items include production machines and plastic raw materials.

A characteristic of this category is that small changes in the purchasing price of heavyweight items can have a significant impact on the total cost of the final product. This reflects the importance of carefully monitoring and managing costs associated with heavyweight items, as they can form a key part of a business's finances (Webb, 2017).

Due to their low supply risk, the most common procurement strategy for heavyweight items is to expose suppliers to competition. This involves a call for tenders and competitive offers to ensure optimal terms and prices. As the market for such products is often buyer-dominated, organizations have an opportunity to influence and negotiate favorable agreements (Brynhildsvoll, 2019).

2.2.3 Bottleneck items

Typically, there is a monopolistic market for bottleneck items (i.e., there is only one supplier available). This can lead to high prices, long delivery times, and low service quality. Therefore, it is necessary to continuously secure the supply of bottleneck items to prevent the company from being left without important components in production, which can entail significant additional costs.

In such situations, it is common to work closely and develop close relationships with suppliers of bottleneck items. This may involve negotiating agreements that ensure reliable deliveries and better conditions. At the same time, it is important to proactively diversify the supply chain by searching for alternative sources and investigating possibilities for substitutes.

Since bottleneck items are often specialty products that operate in monopoly-like markets, the seller has a strong position. Strategies that involve changes in specifications, a search for substitutes, and constant improvement of the supply chain can reduce the vulnerability of this category. In the Kraljic matrix, moving products to the left, as described, means the reduction of both economic importance and supply risk through strategic efforts (Webb, 2017).

Thus, the effective management of bottleneck items is critical for ensuring agile production and reducing potential supply challenges that can affect the business's bottom line.

2.2.4 Strategic items

Strategic articles are the most challenging category in the purchasing portfolio, as they are characterized by high financial importance and high supply risk. This category contains a limited number of crucial suppliers that provide products that are often tailored to the customer, such as special ores. In many cases, these products are created through a close collaboration process between the customer and the supplier and can be considered special products.

The unique and tailored nature of strategic articles necessitates the development and maintenance of long-term and strategic relationships with suppliers. This often means that companies and suppliers work together to develop innovative solutions, adapt products to specific needs, and ensure continuous improvement of the products (Webb, 2017).

Due to the significant economic importance and high supply risk of strategic items, risk management and continuous monitoring of the supply chain become critical. This may include developing emergency plans, diversifying supply sources, and implementing technological solutions to ensure transparency and traceability throughout the supply chain.

Since strategic items are often unique and tailor-made products, a challenge also lies in finding alternative sources or substitutes. At the same time, it is important to maintain close cooperation with existing suppliers to ensure continuity, quality, and innovation.

In summary, managing strategic items requires a balanced approach that combines long-term strategic partnerships with careful risk management and continuous innovation. This helps to ensure reliable access to critical materials and products that have a significant impact on the business's success and competitiveness (Brynhildsvoll, 2019).

2.3 Supply base management

Supply base management (SBM) provides a foundation for efficient and strategic supply chain operations. The current overview presents the core tenets of SBM and lays the groundwork for a comprehensive exploration of supply base reduction and supplier development.

Tan et al. (1998) emphasized the importance of strategic supplier selection, moving beyond transactional engagements. SBM involves the meticulous segmentation of suppliers based on criticality, strategic relevance, and risk exposure. This strategic alignment sets the stage for nuanced supplier strategies and emphasizes differentiation and symbiotic relationships.

Informed by Ogden (2006), SBM addresses the imperatives of risk mitigation and resilience. Geopolitical uncertainties and unforeseen disruptions necessitate proactive risk management. Diversifying the supplier base, assessing financial stability, and implementing contingency plans have emerged as critical strategies for fortifying supply chains against potential disruptions. According to Van Weele's insights (2009), SBM fosters collaboration and innovation. Beyond transactional interactions, cultivating open communication with suppliers encourages knowledge sharing and innovation. Thus, strategic partnerships with key suppliers can become catalysts for continuous improvement and drive innovation throughout the supply chain.

Brandon-Jones et al. (2014) addressed supply base complexity, which they defined as complexity that exists upstream in the supply chain. The intricate nature arises from numerous providers, each of which embodies distinct attributes. They vary with respect to their geographical location, lead time, size, and technical proficiency. Brandon-Jones et al.'s (2014) research focused on four criteria that are indicative of complexity, which can lead to supply disruptions (e.g., delayed delivery and inability to meet demand): geographic dispersion complexity, delivery difficulty, differentiation complexity, and scale complexity.

This basic grasp of SBM prepares the ground for looking into cutting down the supply base and helping suppliers grow. SBM is crucial for fostering flexible, strong, and competitive supply chain systems. Reducing the supply base trims suppliers smartly, which increases the efficiency of operations, while developing suppliers builds important partnerships to achieve long-lasting value. Essentially, this overview sees SBM as the main point in managing supply chains strategically, giving the background to dig into later talks about cutting down the supply base and developing suppliers.

2.4 Supplier base

As described by Sarkar and Mohapatra (2006), reducing the supplier base involves decreasing the number of existing suppliers. Differentiating between supplier base rationalization and supplier base reduction is crucial. According to Sarkar and Mohapatra (2006), supplier base rationalization is a two-phase process that involves identifying the optimal size of the supplier base and deciding which suppliers to include in it. Optimal size can involve both increasing and decreasing the supplier base (Böris & Hall, 2015).

This section thoroughly examines the supplier base, the aim of decreasing the number of suppliers, and what is needed for this to be successful. As a strategy, reducing the supplier base is based on working more together with suppliers. Supply base reduction can simply be said to be: "To carry out measures and activities to reduce the number of suppliers an organization cooperates with" (Ogden, 2006, p. 29). It shows that a company tries to work more closely with a smaller number of suppliers.

Many large companies choose to reduce the number of suppliers as part of their supply management strategy. The ultimate goals of this exercise include cost reduction, quality improvement, increased responsiveness and flexibility, and other significant outcomes (Cousins et al., 2007). As previously mentioned, decreasing the number of suppliers is regarded as helpful for supply management because it makes the supply chain easier to monitor. Ogden (2006) asserted that having fewer suppliers has two major benefits: cheaper expenses and better supplier service. He also noted several other advantages based on a case study, including more transparent connections in which the supplier provides access to new technologies, better quality, higher availability of items, ideal stock levels, and the potential to use supplier-managed stock solutions.

Ogden (2006) also subdivided the terms; supplier base reduction means reducing the number of existing suppliers, while supplier base rationalization may involve both reducing and increasing the supplier base. Research has shown that supplier base reduction can have different effects on the value chain. Studies by Cai et al. (2010) identified customer responsiveness, reduced transaction costs, lower supply risk, and increased innovation among suppliers and economic benefits as potential consequences.

Advanced sourcing strategies require close cooperation between buyers and suppliers, which can be challenging when the supplier base is excessively large (Böris & Hall, 2015). Therefore, it is important to carefully assess and optimize the size of the supplier base to achieve the desired results in the value chain.

Supplier base reduction, a strategic approach employed by organizations to streamline and optimize their network of suppliers, presents both advantages and disadvantages. This practice involves minimizing the number of suppliers that a company engages with to enhance efficiency and achieve various strategic goals. The following discussion explores these advantages and disadvantages and draws on relevant sources to provide a comprehensive understanding of the topic.

2.4.1 Advantages of supplier base reduction

This subsection dive into the advantages and disadvantages of reducing the supplier base and aims to show how this choice can shake things up in a business. We'll break down the pros and cons, giving a clearer picture of how it affects how a company runs and keeps its costs in check.

1. **Cost savings:** Reducing the supplier base can lead to cost savings through economies of scale and improved negotiation power. A streamlined supplier network allows organizations to negotiate better terms, bulk discounts, and more favorable pricing structures (Cai et al., 2010).
2. **Simplified management:** A smaller supplier base simplifies the management and monitoring of supplier performance. This enables organizations to focus on building stronger relationships with a select group of suppliers, which improves collaboration and communication (Sarkar & Mohapatra, 2006).
3. **Risk mitigation:** A reduced supplier base can lower the risk of disruptions in the supply chain. With fewer suppliers, organizations can more effectively manage and mitigate risks associated with factors such as geopolitical events, natural disasters, and market fluctuations (Böris & Hall, 2015).
4. **Enhanced quality control:** Having a smaller supplier base enables more stringent quality control measures. Organizations can invest more resources in ensuring that the products or

services provided by a limited number of suppliers meet or exceed quality standards, which improves overall product quality (Ogden, 2006).

5. **Innovation and collaboration:** A focused supplier base facilitates closer collaboration and innovation. Organizations can work more closely with a select group of suppliers, which fosters a collaborative environment that encourages the sharing of ideas and the development of innovative solutions (Cai et al,. 2010).

2.4.2 Disadvantages of supplier base reduction

1. **Dependence on fewer suppliers:** One of the primary drawbacks of supplier base reduction is the company's increased dependence on a limited number of suppliers. If an issue arises with a key supplier, it can have a significant impact on the entire supply chain, which leads to potential disruptions (Sarkar & Mohapatra, 2006).

2. **Reduced competitive bidding:** A smaller supplier base may limit opportunities for competitive bidding and potentially result in less favorable terms for the purchasing organization. The absence of competition can hinder its ability to secure the best possible prices and terms (Böris & Hall, 2015).

3. **Loss of innovation and diversity:** While collaboration is enhanced with a reduced supplier base, there is a risk of losing diversity in innovation. Relying on a select number of suppliers may limit exposure to a wide range of ideas and approaches and potentially stifle creativity and innovative solutions (Ogden, 2006).

4. **Strain on supplier relationships:** Intense competition for limited slots in the reduced supplier base between suppliers may strain relationships. Suppliers may feel increased pressure to conform to the buyer's terms, which potentially leads to dissatisfaction and strained partnerships (Cai et al., 2010).

5. **Market changes and flexibility:** A dynamic market requires adaptability. A reduced supplier base may limit the organization's ability to quickly adapt to changing market conditions and ability to take advantage of emerging opportunities, as flexibility may be compromised (Böris & Hall, 2015).

In conclusion, while supplier base reduction offers significant advantages such as cost savings, simplified management, and risk mitigation, it is crucial for organizations to carefully weigh these benefits against potential disadvantages, such as a dependence on fewer suppliers and reduced competitive dynamics. The successful implementation of supplier base reduction requires a strategic approach that considers the specific needs and challenges of the organization in its industry context.

2.5. Supplier development

There are various opinions on how to pursue supplier development. The best approach for one company may not work for another, especially if they have different supplier markets. Thus, maritime companies must evaluate their chosen supplier and determine the method that is best-suited to their relationship with the supplier.

Value management is a crucial component of supplier development. Analyzing value can help maritime organizations to identify opportunities for cost reduction, faster time to market, and environmental and product quality improvements. Usually, one or more of these goals are incorporated into supplier development projects, but they do not provide many details. The buying company's main concern is that supplier development should improve the overall value provided by the supplier. Otherwise, the supplier's development efforts might be unnecessary.

2.5.1 Supplier development approach

The study of supplier development best practices began in 1996 with the Global Procurement and Supply Chain Benchmarking Initiative. This report divided different methods into two categories: programs that aim to improve the capability of the entire supply base and programs that focus on particular suppliers. Either the process level or the product level can be the focus of attention. Two primary approaches were identified from this data: reactive supplier development and strategic supplier development. While strategic supplier development targets long-term improvements, reactive supplier development addresses specific shortcomings in the immediate term. According to Handfield and Bechtel (2002), an organization that employs a reactive strategy typically engages in development activities following a major crisis or failure on the part of the provider. Furthermore, Wagner and Johnson (2004) argued that strategic approaches are designed to identify significant items and suppliers that require improvement to develop a top-tier supply base, which provides a long-term advantage over existing competitors. By contrast, reactive systems are driven by subpar performance, as identified through evaluations. Reactive organizations tend to have a less structured approach to assessing suppliers and only identify improvement needs when a problem arises (Krause et al., 1998).

2.5.2 Supplier development process

It was advocated by Krause and Ellram (1997) that a 10-phase strategic supplier development approach should be implemented. In order to confirm their findings, the researchers conducted a statistical analysis of quantitative data. The model that they developed was based on a survey that consisted of open-ended questions.

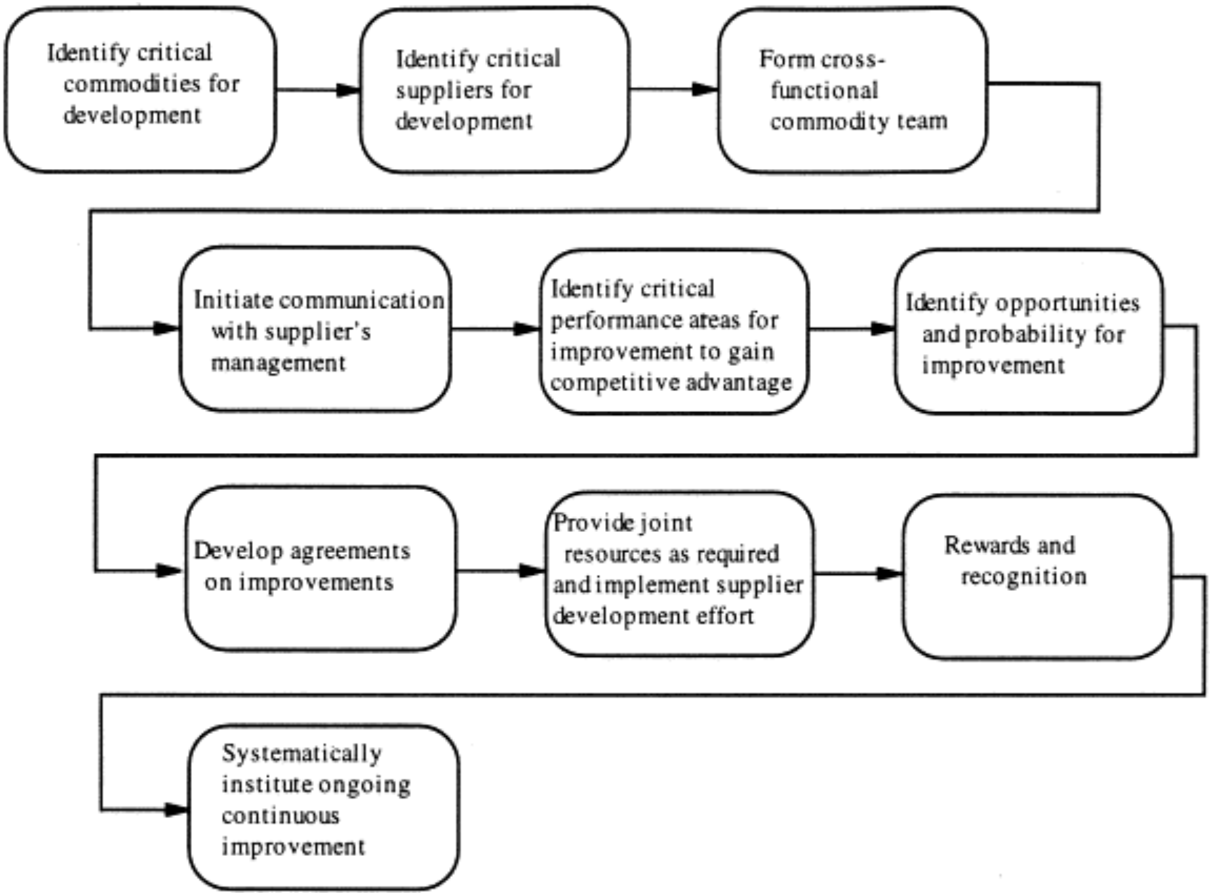

Figure 2 - supplier development process (Krause et al., 1998)

Strategic supplier development involves an assessment of the relative importance of each item and the development of a portfolio of resources that are essential to the market segment. By contrast, reactive supplier development omits this step in the process. Important suppliers are identified by reviewing supplier performance data from this portfolio, while reactive firms only discover essential suppliers after poor performance. Form a cross-functional development team to manage development. Strategic organizations use permanent cross-functional teams, whereas reactive firms use ad hoc teams that are dissolved when the issue is addressed. No substantially different findings have been shown.

Identifying objectives and crucial areas for performance improvement distinguishes strategic supplier development initiatives from reactive supplier development initiatives. According to Krause and Ellram (1997), companies that focus on strategic supplier development are more inclined to Establish Criteria for supplier development, develop benchmarks for supply base improvement, and implement supplier-focused total cost management programs to eradicate non-value-added costs. Further on, Improvement opportunities and probabilities are identified.

Time-phased milestones are the most important aspect of an improvement and performance metrics agreement. Deploying resources and starting development. Development requires finance, capital, and manpower from both organizations (Handfield et al., 1999). Strategic organizations prioritize mutual improvements over supplier improvements, according to the study (Handfield et al., 1999). If the buying organization commits to equal resources, the supplier is more likely to succeed. Certain strategic businesses develop a liaison to prevent parties from breaking their promises. According to the study, strategic companies deploy and obtain more resources than reactive enterprises (Krause et al., 1998).

Supplier development initiatives are equally likely to employ incentives and recognition to stimulate continued development once the development process has already begun. Monitor progress over time. Supplier development is first employed to address poor performance, according to the report. As supplier performance improves, the buying organization strategically develops them to gain a competitive edge. Poor performers are more likely to be eliminated when assessing a supply base and eliminating unnecessary vendors. However, this examination will identify underperforming providers in the supply base that require growth.

To boost the buying firm's long-term competitiveness, all remaining suppliers should be developed. In this way, suppliers are strategically developed rather than developed in response to bad performance.

2.5.3 Lean supplier development

The current subsection examines the lean philosophy in more detail and its application in supplier development. To better understand lean supplier development, we review some lean concepts and methods. Lean adoption is regarded as a crucial strategy for overcoming fierce rivalry in the global marketplace. It requires more intelligent and effective business practices throughout the supply chain and within the organization (Harris et al., 2017). To find and eliminate sources of redundant resources in manufacturing processes, lean production refers to both a concept and a set of instruments and methods.

The lean procurement philosophy aims to locate suppliers with whom the business can form long-term alliances. Improved supplier connections enable the timely delivery of a suitable quantity and quality, reduces coordination, and increases process efficiency. Because the goal of lean manufacturing is to develop more productive processes, which can also result in lower operating costs and more capacity, lean manufacturing can be financially advantageous for the maritime companies (Harris et al., 2017). This aligns with the previously described goals of narrowing down the supplier base and supporting existing suppliers, which are to maximize benefits by focusing on a smaller number of suppliers and creating stronger connections with them.

2.5.4 Success factors for supplier development

This subsection examines key factors contributing to success in supplier development initiatives. Collaborating with suppliers offers advantages for both buyers and suppliers, but it comes with significant time and cost implications. Therefore, a thorough evaluation of the potential and benefits associated with developing specific suppliers is crucial, along with the identification of challenges requiring attention.

Supplier development, as described by Handfield et al. (2006), involves providing financial, capital, and people resources to both sides, promoting open information exchange, and implementing an efficient performance evaluation system. This entails establishing commitments at many levels and acknowledging the obstacles that need to be addressed.

Handfield et al. (2006) research revealed that, while many organizations recognize the importance of supporting certain suppliers, only a few actively engage in supplier development activities. They delved into understanding the reasons behind this discrepancy, identified potential challenges, and proposed a seven-phase supplier development process. Notably, most issues arise in the final four stages, underscoring the significance of communication with suppliers. Challenges are categorized into supplier-specific pitfalls, buyer-specific mistakes, and buyer-supplier interface issues.

The maritime companies must prioritize specific aspects and evaluate the cost of ownership to understand overall expenses. The report emphasized the setting of achievable goals and managers' prioritization of their dedication to professional objectives. Issues related to buyer-supplier interaction often arise from a lack of trust and coordination between corporate cultures. Effective communication is vital for building trust in buyer-supplier relationships and achieving successful supplier development (Handfield et al., 2006).

3. Methodology

In this chapter, I thoroughly explore the approaches that are used to collect the necessary empirical data. The goal was to systematically acquire new insights that were essential for my research and approach solutions to the problem. In every research process, awareness is a central part at a higher academic level (Busch, 2021). The choice of methods has an impact on a study's research design, how the data collection takes place, and how the data are analyzed.

3.1 Qualitative and quantitative research methods

Traditionally, data collection methods have been broadly classified into qualitative and quantitative approaches (Larsen, 2017). The chosen methods dictate the type of data obtained. Qualitative data are often referred to as "soft" data, primarily in textual form. Qualitative data are well-suited to capturing participants' subjective thoughts and experiences of a phenomenon and offer flexibility without being confined to predefined variables (Busch, 2021). On the other end of the spectrum, quantitative "hard" data are numerical in nature, lend themselves to generalization, and often involve larger sample sizes compared to qualitative methods (Larsen, 2017).

While quantitative methods are commonly employed to address the breadth of an issue, qualitative methods aim to explore and elucidate the depth of an issue. Despite their distinct purposes, these methods are not mutually exclusive, as most phenomena involve both quantitative and qualitative aspects (Larsen, 2017). For example, in a specific context, qualitative approaches can be used to understand how shipping companies adapt their strategies to address uncertainty and changes in the market. At the same time, quantitative methods can provide an overview of purchases made in various Norwegian shipping companies. This illustrates how multiple methods can be used to capture various facets of the same phenomenon. However, as Busch (2021) highlighted, resource limitations and project deadlines often necessitate the selection of one method over another, and prioritization and careful assessment are required to determine the most suitable data collection approach for a given project (Busch, 2021).

In this study, I decided to use qualitative methods because this approach can reveal reflections, opinions and experiences that quantitative data alone cannot capture. These data were crucial to the research, as they shed light on specific conditions that provided answers to the research question. The issue also warranted discussions that could be conducted more easily through a qualitative approach (Busch, 2021).

3.2 Choice of methods

The choice to use qualitative methods in this research was justified by several significant factors. The aim of conducting in-depth interviews was to gain more thorough insight into the research subjects' attitudes towards the research question. Much of this insight is based on the ability to further develop the information shared during the interviews. Furthermore, the interpretation of participants' body language and attitudes enabled a deeper understanding that could not necessarily be captured through quantitative analyses. Therefore, this type of research emphasized insight rather than overview, and a desire for understanding precedes the need for explanation (Tjora, 2021).

3.3 Procedure

In light of the problem, it quickly became clear that the interview subjects for this research should primarily work with purchases in the offshore shipping segment in relatively large companies. This is due to my own association with DOF, a significant company in the offshore segment.

3.4 Selection and interview guide

Tjora (2021) suggested the use of an interview guide for organizing interviews. As described by Larsen (2017), qualitative interviews can vary in their degree of structure. While structured interviews, which involve a predetermined set of questions asked in a specific order, offer a sense of security to the interviewer and facilitate processing and comparison, the present study required a semi-structured approach. In semi-structured interviews, there is a flexible interview guide with some predetermined questions, which allows the interviewer to ask follow-up questions or rearrange the question sequence to delve deeper into the participants' responses (Larsen, 2017).

During the interviews, a module was used with the employee of the company that I was with and a module with the external representatives. The only difference between the modules was that the general questions slightly differed; otherwise, the questions were the same. The modules consisted of 15 to 17 questions divided into four sections: general questions, the supplier base, supplier development, and conclusions and thoughts about the future.

Before the interviews began, I took a moment to introduce the project, explain its purpose, provide a brief overview of how to make sound recordings. Additionally, none of the participants objected to being audio recorded.

3.5 Conducting the interviews

A total of five interviews were conducted, and all of them took place as one-on-one conversations. One of the interviews was with a purchaser from DOF, and four were with representatives of other offshore shipping companies. I contacted the respondents either via e-mail or telephone. Originally, I planned to hold two more external interviews, but the participants withdrew and I was unable to find replacements due to a lack of time. The interviews lasted between 20 and 35 minutes. In the interviews, I aimed to assess the participants' attitudes towards supplier bases and supplier development; therefore, I did not send them the interview guide in advance. The interview with the purchaser from DOF was conducted face to face, while the external interviews were held over Microsoft Teams. Although it would have been ideal to conduct all of the interviews in person, this was not possible because participants were based in other cities. According to Tjora (2021), the location of an interview can influence how the informant performs.

3.6 Transcription and coding

All interviews were transcribed to identify any tendencies or patterns, and almost all of them were transcribed immediately after the interviews. This was done to ensure that the interviews were transcribed in a better way since recall is strongest immediately after the completion of an interview. The transcription process involved a systematized review of each interview, during which I identified points, reflections and comments of interest.

However, a challenge associated with this method was the considerable variation in dialects and language use. This was also highlighted as a challenge by Tjora (2021). Thus, I transcribed the interviews into Bokmål to make them easier to understand but also to take into account the necessary anonymity. Finally, I translated the interviews into English.

3.7 Validity and reliability

In research, validity means ensuring that the measurements align with the intended variables (Dahlum, 2022). Throughout the research process, it is crucial to establish a logical link between the collected data and the research objectives (Tjora, 2021). The formulation of questions for the interview guide was a critical aspect and emphasized the need for careful design. Ensuring the accuracy of the questions was vital for uncovering the desired information. To enhance validity, multiple iterations of the interview guide were developed. The questions underwent testing, which enabled the identification and elimination of questions that were beyond the research scope or ambiguously formulated. Adjustments were made to maintain a high level of validity in the research design.

Relative pertains to both reliability and accuracy (Larsen, 2017). In the context of an investigation, an evaluation is conducted to determine whether the information can be deemed reliable and accuracy formed the foundation for the research design. Within this thesis, five diverse interviewees were engaged and yielded somewhat varied responses. The differences may be attributed to their distinct perspectives and individual transportation needs. Despite these distinctions, several analogous statements on the subject emerged. To enhance reliability, the face-to-face interview took place on the informant's premises, which fostered a secure environment for candid responses. The statements presented in the results chapter were transcribed verbatim to maintain as much accuracy as possible.

3.8 Method criticism

According to Larsen (2017), it is often challenging to apply findings to a broader context when qualitative methods and in-depth interviews are used. Although the surveys conducted may have some transferable value, Larsen noted that much of the gathered data tend to be subjective. This lack of statistical generalizability makes it difficult for the data obtained in this thesis to establish a shared understanding of supplier base and supplier development usage in the maritime sector. Additionally, the use of this approach is seen as a disadvantage, particularly due to the lack of control over the impact during the strategy implementation. The interview process and questions can directly influence the outcomes, which calls into question whether the data, which were primarily based on the informants' opinions, attitudes, and thoughts, are entirely accurate. Informants can provide misleading information; responses that reflect what they believe is expected or obscure ignorance or facts; or responses that aim to create a positive impression, as indicated by Larsen (2017).

As the interviewer, I could have influenced the informants' responses by observing their actions or external traits. In other words, displaying my reactions to the informants' responses may have caused them to revise or amend their responses. Moreover, it is possible to receive different replies depending on external factors such as gender. To prevent informants from feeling pressured to modify their responses, I focused on providing unbiased confirmations during the interview process. Moreover, I attempted to avoid asking leading questions by using the same questions as in prior interviews but adding keywords from the interview guide that indicated what I needed responses to. To steer us onto the right path, I offered open-ended follow-up questions when I did not exactly receive the responses that I "needed." Additionally, I made a point of treating the informants with respect and professionalism. The researcher's attitude and behaviors can influence the tone of a conversation; therefore, I tried to maintain a casual yet professional tone to make informants feel comfortable and motivated to provide the best responses (Larsen, 2017).

4. Results

This chapter focuses on presenting the results of the interviews. Participants were labeled "O1" to "O5" to maintain their anonymity; they all worked at different shipping companies.

4.1 Supplier base

Maritime offshore shipping companies face a reality characterized by varying raw material prices, geopolitical events, and other factors that can affect market conditions.

Regarding the process of reducing the supplier base, opinions about processes and strategic actions to strengthen the organization varied among interviewees. It was the issue of cost that initiated the supplier base reduction according to some of the interview objects. The objective was to reduce administrative expenses and establish more robust strategic alliances with the suppliers that remained. The process of consolidating the supplier base will occur throughout multiple divisions of an organization.

O3 explicitly stated that acquiring customers in the supplier base was not a primary goal, emphasizing that a decrease in numbers might compromise the organization rather than fortify it. The concept of discontinuing partnership with suppliers purely due to their small scale and restricted range of products was challenged, arguing that it should not be the exclusive rationale for terminating cooperation. Simultaneously, O3 mandated that deliberately escalating volumes with specific suppliers to secure better terms could lead to the exclusion of a supplier from the supply base, as outlined in the user manual.

Moreover, O4 and O5 highlighted the importance of negotiating better terms and prices in purchasing. Furthermore, O4 indicated that a reduction of the supplier base facilitates closer cooperation with suppliers that the business considers appropriate to focus on. O2 said that reducing the supplier base not only enables long-term relationships with specific suppliers but also provides benefits, such as better logistics solutions and reduced workload related to the follow-up and monitoring of suppliers.

O1 demonstrated a well-defined understanding of the purpose behind reducing suppliers and expressed confidence in the company's holistic approach to managing this process. They articulated clear guidelines for identifying suppliers to be removed from the supplier base within each product group, by product group O1 means the four categories from the Kraljic model presented in Chapter 2. Furthermore O1 gave an example, if a supplier consistently failed to meet quality standards or was not in in line with the company's sustainability goals, O1's guidelines would lead to their removal.

In contrast, other interviewees conveyed that they did not have a predetermined or specific number of suppliers to remove from their respective supplier bases. Their approach seemed more flexible, with decisions driven by situational factors rather than pre-established criteria. For example, they may consider removing a supplier based on performance issues, delivery delays or failure to adapt to evolving industry standards.

4.1.1 Success factors for supplier base reduction

The interviewees cited several factors that they believed to be necessary to successfully reduce the supplier base. Judging suppliers objectively was a challenging task and thus a decisive factor in choosing the most suitable suppliers. When a company works with a supplier over a long period of time, it develops a special relationship with it that can be difficult to examine from a new perspective. The capacity to discern the specific items obtained from various suppliers was also seen as an important factor in identifying which providers should potentially be eliminated from the supplier base.

Various tools have been used to reduce a company's supply base, including obtaining historical data from different systems, audits conducted by suppliers, and experience from employees who have worked in the organization for a long time.

Reducing the number of suppliers can also mean ending a collaboration. When participants were asked if there were clear guidelines for terminating supplier cooperation, all of them replied that no specific procedures had been established. This is a complex topic that has recently attracted considerable discussion. O3 suggested that clear guidelines should be established and indicated that the challenge lies in ending a collaboration in a professional manner. He encouraged for terminating a partnership with a provider amicably, considering the possibility of using the supplier's services in the future. 02 also emphasized the need of terminating a relationship with a supplier in a systematic manner, ensuring that the supplier is provided with a clear justification for the termination. Overall, the informants held the belief that their respective organizations might enhance their performance in this particular area. They unanimously agreed that it is necessary to establish a formal system to address this matter. O5 presented two ways of addressing this issue: (1) gradually allowing the relationship to decline through a simple transaction and (2) giving notice to the supplier that the relationship is ending. O5 shared that their company preferred the first solution.

4.2 Supplier development

Evaluation and feedback play a crucial role for maritime companies in pinpointing the development goals of their suppliers. When deficiencies are identified, it triggers the initiation of the supplier development process. These identified shortcomings have the potential to undermine the purchasing firm's performance across various business factors. For instance, subpar product quality can directly impact the operational efficiency of a ship.

However, it's important to note that the supplier development process itself may carry risks, particularly if it fails to secure future cooperation. Resources invested in assisting suppliers cannot be recovered, underscoring the need for careful selection and collaboration with suppliers capable of reaching the required development level. Consequently, shipping companies should allocate time and financial resources to thoroughly evaluate and choose suppliers, especially when planning for long-term partnerships. This strategic approach ensures that the investment in supplier development aligns with the company's goals and safeguards against potential negative impacts on future collaborations.

All participants unanimously emphasized the central role of supplier development, and shared a collective perspective on its most important importance. The primary driving force behind their respective companies' emphasis on supplier development was the necessity to reduce costs and improve product quality, which is critical to maintaining competitiveness in the marketplace.

Specifically, O2 expressed a proactive inclination to promote greater transparency by sharing more information with suppliers. This transparency aims to streamline processes to promote efficiency. O2 emphasized the value of building closer cooperation with suppliers and perceived it as an opportunity to collaborate on challenges, optimize processes and utilize the significant contributions suppliers can bring to the table. Furthermore, O3 highlighted concrete positive changes in working methods, which affect both their company and the suppliers. This indicated that collaboration in supplier development produced beneficial changes, fostering an environment of continuous improvement and mutual growth.

O1 shared that, in some cases, their company was forced to work with only one supplier to access a specific product, this is a bottleneck items. In such cases, they had no other option but to make the relationship work with the supplier. In addition, O1 emphasized that there had been a change in how their company interacted with suppliers: with an increased focus on selected suppliers and a dedicated effort towards these partners.

According to O5, the greatest challenge in their collaboration with suppliers was a lack of sufficient resources for active supplier development. Similarly, O3 expressed a need for additional resources to follow up with suppliers in the desired way. All interviewees agreed that it is important to actively invest in resources to develop suppliers, implement sustainable improvements over time, and ensure a successful development process.

Moreover, O1 argued for a more flexible approach to contracts with suppliers. He believed that the supply base should be regularly assessed and adjusted, while the set timeframe should give suppliers sufficient time to develop. O1 said, "I believe adopting a three-year timeframe is a sound approach, allowing for a reassessment at the end of this period. Given the rapid pace of market evolution, this duration provides suppliers with ample opportunity for development." He also emphasized the importance of clear communication with suppliers about the direction of the business. O1 faced difficulties in actively challenging suppliers to address problems that emerged and indicated that it is crucial to make them understand the company's wishes and focus areas.

4.3 Challenges with procurement over the next five years

The shipping industry faces constantly changing dynamics, which are driven by technological advances, increasing regulatory requirements, and changes in market trends. In the future, procurement will play a critical role in improving efficiency and profitability. When participants were asked about the future, there was fairly broad agreement that it will be exciting to see how purchasing develops in the upcoming years.

However, the interviewees shared a common concern related to ever-changing regulations. O5 said, *"We are seeing a wave of new regulations, especially related to emission standards. This means that we have to be extra careful when choosing suppliers that are in line with the new requirements."* This underlines the importance of proactively understanding and adapting to changes in regulatory frameworks.

In addition, the COVID-19 pandemic has highlighted the vulnerability of global supply chains. O3 emphasized this: "We have learned that we must consider risks related to geographical location when choosing suppliers. Proximity to important markets is now more important than ever."

This insight signals the need for a strengthened approach to risk management in the supply chain. COVID-19 has also highlighted the need to reduce the distance between suppliers and important geographic markets to ensure that companies can handle any supply challenges that may arise. Thus, a more robust risk management strategy that focuses on geographic diversification and local presence can help to ensure continuity and reliability in the supply chain, even during unforeseen events such as pandemics.

5. Discussion

This chapter delves into the outcomes presented in Chapter 4, intertwining references to the theory outlined in Chapter 2 throughout the discussion. To shed light on the substantive content of the research questions, the latter are employed. The chapter outlines the most noteworthy findings identified upon the completion of the study.

5.1 Supplier base

As discussed in Chapter 4, the general impression from the interviews is that the main motivation for taking the initiative to reduce the supplier base is to lower costs. According to Choi and Krause (2006), a large number of suppliers in the supply base can lead to high transaction costs. Therefore, several companies in various industries have chosen to limit the supply base to minimize expenses. In addition, a reduced supplier base may lead to closer cooperation with the remaining suppliers. Adjusting the supplier base to align with the distinct divisions within maritime companies is seen as a notable advantage. This adaptation aims to establish a unified supplier base across different divisions, promoting consistency and streamlining procurement processes throughout the organization.

Two different perspectives were identified among the interviewees. Reducing the supplier base was done as an important strategy to cut down on administrative costs and improve ties with the suppliers that stayed. According to Ogden (2006), having fewer suppliers can make an organization more competitive by improving quality, cutting costs, and encouraging innovation. O1, the person providing information, has a clear idea of how many providers should be removed from each product category. However, some people saw reducing the number of suppliers as a potential downside. Getting rid of suppliers just to lower the count might lead to losing valuable ones and weakening the overall group of suppliers. O3 believed that the reduction of the supplier base was not a goal in itself but rather an unintended consequence of their company's connection project. In other words, the reduction in the number of suppliers wasn't a deliberate aim; instead, it occurred as an unplanned consequence of the broader initiative to establish connections or partnerships within the company's operations.

According to O3, their company had an ambitious goal to work with suppliers that are considered up-to-date and strategic. This also entailed the requirement that the suppliers deliver simple and standardized products.

5.1.1 Success factors for supplier base reduction

According to Ogden (2006), reducing the supplier base is a challenging task. This is because it takes time to overcome the cultural barriers between different company functions and departments, and reaching agreement is a complex task. Many interviewed individuals experienced the decrease in the number of suppliers as a process of transformation. According to Ogden (2006), it is crucial to effectively convey the objective of this reduction across the entire business in order to obtain the necessary dedication for a successful implementation. A few participants voiced their opinion that there was a lack of consensus among organizational members regarding the objective of the process. If many employees see supplier base reduction as potentially harmful to the organization, this process can be poorly executed. Since maritime companies operate in innovative environments characterized by rapid changes, it may be necessary to continuously adjust the supplier base in line with changing market conditions, as Choi and Krause (2006) indicated. Therefore, it is important to implement an approach that views suppliers from a neutral perspective to adapt the supply base to such factors.

With the capacity to gain a thorough picture of the supplier base and identify products that are sourced from various suppliers, another element that contributes to the reduction of the supplier base is the ability to. Several respondents emphasized the importance of this aspect and noted that it is a time-consuming process, particularly due to the diverse supplier base of maritime companies that spans various locations and departments. As previously mentioned, this undertaking demands substantial resources, both in terms of time and effort. Maritime companies grapple with constraints in managing these resources effectively due to the complex nature of their supplier networks, spread across diverse geographical locations and organizational units.

Despite facing these challenges, there was unanimous agreement among the participants that implementing a streamlined process to reduce the supplier base is essential for gaining better control. Brandon-Jones et al. (2014) asserted that the intricacy of the supplier base arises from its multitude of suppliers, each with its own distinct characteristics. Thus, streamlining this complexity by phasing out suppliers that are unnecessary to the supplier base can yield valuable benefits.

Various tools have been used to assess supplier performance in maritime companies, including historical data, supplier audits, and employee experiences. According to Ogden (2006), a central challenge in reducing the supplier base is a lack of historical data. All of these three factors mentioned above play a role and are essential mechanisms in preventing the inadvertent phaseout of critical suppliers from the company's supplier base.

5.2 Supplier development

Due to the substantial cost pressures within the maritime sector, engaging in global sourcing is imperative as it allows for the procurement of goods and services at competitive prices. But some of the interviewees stated that they have attempted to move manufacturing back to their home countries, a trend known as "back-sourcing" (Fratocchi et al., 2014) This shift was mainly due to concerns about quality, delivery time, and rising expenses related to labor and transportation (Lanza and Moser, 2014). In the context of the interviews conducted, it was observed that these companies specifically engage with specialized suppliers for technically advanced products. The criteria for these suppliers include demonstrating high competence and quality to meet the defined goals. Notably, the choice of local suppliers is seen as advantageous for both the organization and the suppliers, as highlighted by the interviewees.

5.2.1 Success factors for supplier development

Maintaining a long-term perspective is crucial for supplier development because it is an investment that yields results over time. Forming teams with diverse functions and implementing extended planning are vital aspects of supplier development. Supplier development should be assessed within a reasonable timeframe. Based on practical findings, opting for three-year contracts is a wise decision, as they provide ample time for suppliers to progress. This approach aligns with the success factors outlined by Handfield et al. (2006) and Krause and Ellram (1997) and reflects a focus on the long term.

The findings from this study show that marine companies heavily focus on cutting costs by reducing their supplier base. To achieve this, it is vital for such companies to build stronger relationships with their suppliers. O3 stressed how crucial it is to work closely with suppliers for everyone's gain and to get useful insights. O3 mentioned that this teamwork goes beyond just buying and selling things; it's about building a relationship that helps both sides. The good things that O3 pointed out about this teamwork include saving money by making processes smoother, making the supply chain work better, and agreeing on high-quality standards together. To reduce the supplier base, smarter and more streamlined methods are necessary to manage the supply chain. Using lean principles can offer many advantages for marine companies and suppliers, which makes it crucial for staying competitive at a global level (Harris et al., 2017).

5.3 Future studies

This study aimed to investigate ways in which purchasing departments can enhance efficiency, specifically by engaging in supplier development initiatives and streamlining the supply base. The focus was on identifying key methods and success factors associated with these approaches, supported by empirical evidence. Additionally, the research sought to gain insights into the existing workflow of the procurement department concerning supplier development and supplier base reduction.

During this process, a dearth of theoretical studies was identified in some areas of the literature. First, the literature on supplier base reduction was mostly summarized as a crucial procedure to facilitate stronger ties with suppliers. Second, studies that feature the supplier's perspective on supplier development is quite limited; the purchaser's perspective is predominantly addressed in existing research, which means that few studies focus on the process of reducing the supplier base and success criteria for reducing the supplier base. Thus, future studies could examine supplier development from the supplier's perspective. A greater understanding of how supplier base reduction ought to be organized is also possible. To find areas where both parties can enhance and make better use of the relationship, it can be useful to compare the buyer's and supplier's perspectives on supplier development.

6. Conclusion

Throughout the project, I have attempted to explain the problem "How can the purchasing department of maritime companies improve efficiency through supplier base reduction and supplier development?" In addition, I subdivided the issue into three sub-questions:

1. *What are the conventional or typical procedures as per the theory, commonly referred to as best practices?*
2. *What are the advantages and disadvantages of supplier base reduction?*
3. *How does the procurement department pursue supplier development efforts, and what are the most critical factors in their success?*

I then delved into the thesis' theory chapter, where I outlined and explained the theoretical framework linked to the identified problem. In the methodology chapter, I justified my decision to use qualitative research methods. I chose this approach as it allows for a more in-depth exploration of how shipping companies specifically manage their supplier bases and engage in supplier development. Conducting interviews and analyzing qualitative data enables a nuanced understanding of challenges, strategies and effective practices used by these companies in supplier relations and supplier base reduction. concluded the report by tying theory to the key research findings.

The discussion in this thesis sheds light on the complex dynamics involved in improving the efficiency of purchasing departments through supplier base reduction and supplier development at maritime companies. The examination of the supplier base reduction strategy revealed a dual perspective within the maritime industry. While some participants viewed supplier base reduction as a strategy for decreasing administrative costs and enhancing relationships with suppliers, others expressed concerns over its potential harm to valuable supplier relationships. Success factors in supplier base reduction include maintaining a neutral approach, effective communication, and adapting the supplier base to changing market conditions.

The challenges associated with reducing the supplier base were also highlighted. Participants emphasized the need for a comprehensive overview of the supply base and the ability to assess supplier performance. Despite these challenges, there was a consensus on the importance of streamlining the supply base to enhance control and achieve valuable benefits. Supplier development, particularly in the context of global sourcing, emerged as a critical aspect, with an emphasis on building trust and collaboration with suppliers. Long-term perspectives, diversified teams, and extended planning were also identified as crucial success factors in supplier development initiatives.

Overall, the findings underscore the industry's focus on cost reduction through supplier base reduction, which necessitates stronger collaboration with suppliers. The emphasis on lean principles and smarter supply chain management methods reflects a strategic approach to staying globally competitive among maritime companies. The thesis contributes valuable insights on the intricacies of supplier base reduction and development strategies in the maritime sector and provide a foundation for future advancements in procurement efficiency in the industry.

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Attachments

Attachment 1 – Interview guide

Intervjuguide - Semistrukturert intervju

Oppvarmingsspørsmål:

1. Hvem er du (stilt bare til de eksterne)?
2. Hvor lenge har du jobbet med innkjøp?
3. Hva er bakgrunnen din?

Refleksjonsspørsmål:

1. Kan du gi en kort oversikt over rederiets nåværende leverandørbase?
2. Hvilke utfordringer opplever du med innkjøp eller samarbeidet med leverandørene?
3. Hvordan fremmer dere samarbeid med leverandører for å forbedre kvalitet og innovasjon?
4. Er det etablert langsiktige partnerskap med spesifikke leverandører, og i så fall, hvordan opprettholdes disse?
5. Hvordan har leverandørporteføljen utviklet seg de siste årene?
6. Hvordan foretar rederiet strategiske valg når det gjelder å velge leverandører?
7. Hva er de viktigste kriteriene som tas i betraktning ved utvelgelse av leverandører?
8. Hvordan vurderes leverandørene i dag, og hvilke kriterier legger dere vekt på under evalueringen?
9. Kan du dele erfaringer med vellykkede eller utfordrende leverandørforhold?
10. Hvordan håndterer rederiet risiko knyttet til leverandører?
11. Hva er de vanligste utfordringene knyttet til leverandørrisiko, og hvordan håndterer dere disse?
12. Har rederiet implementert programmer eller tiltak for å utvikle leverandører over tid?
13. Hvordan bidrar dere til å styrke relasjonene med nøkkelleverandører?

Avslutning:

14. Hva skulle du ønske å forbedre eller blir bedre på med Innkjøpet? Personlig og som bedrift?

15. Hvilke utfordringer ser du for deg for de neste 5 år med leverandørbase og leverandørrelasjoner?

Attachment 2 - Consent information letter

Informasjonsskriv samtykke

Vil du delta i forskningsprosjektet:

"How can the purchasing department of maritime companies improve efficiency through supplier base reduction and supplier development?"

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å finne ut forhold i hvordan innkjøp i maritime bedrifter jobber for å forbedre effektivitet gjennom leverandørbase og leverandørrelasjoner.

Formål

Formålet med oppgaven er å studere hvordan innkjøp i maritime bedrifter jobber for å forbedre effektivitet gjennom leverandørbase og leverandørrelasjoner.

Hvem er ansvarlig for forskningsprosjektet?

Erlend Mo Rognes, Bachelorstudent i Shipping Management ved NTNU i Ålesund er ansvarlig for prosjektet.
Veilederen for oppgaven er Viktoriia *Koilo, Førsteamanuensis* ved *NTNU Ålesund.*

Hvorfor får du spørsmål om å delta?

Det er en del av oppgaven å finne ut hva teorien/litteraturen sier om hva som skal gjøres for å effektivisere innkjøpsarbeidet. Derfor ønsker jeg å intervjue innkjøpsansvarlige.

Hva innebærer det for deg å delta?

Jeg ønsker å gjennomføre intervju i forbindelse med problemstillingen min. Oppgaven baseres altså på kvalitativ undersøkelse med intervju.

For å kunne differensiere svarene som jeg kommer til å få er det noen personopplysninger som jeg er nødt til å samle inn, som f.eks. navn og stillingen. Intervjuene skal helst tas opp med lydopptak, for å sikre at alle informasjoner som er nødvendig kan tas med i drøftingsarbeidet senere – men dette skjer på frivillig basis og du kan trekke samtykke til dette når som helst, om du velger å delta. Opptakene skal bare brukes for transkriberingen av det innsamlete informasjoner, og skal deretter slettes.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg. For å trekke deg er det bare å sende en e-post til meg, så ordner vi det.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Det er bare jeg som vil ha tilgang til eventuelt lydopptak. De som vil ha tilgang til opplysningene når de er bearbeidet er meg som prosjektansvarlig fra NTNU Ålesund og veilederne mine. Datamaterialet lagres på forskningsserver og forblir innelåst og slettes etter leveringen av arbeidet.

Deltakere som deltar i informasjonsinnhenting til forskningen vil ikke kunne gjenkjennes for andre utenfor virksomheten.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres avsluttes og opptakene vil slettes når prosjektet er ferdig, noe som etter planen er 17. Desember 2023.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- - innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- - å få rettet personopplysninger om deg,
- - å få slettet personopplysninger om deg, og
- - å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra NTNU i Ålesund har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

• *NTNU i Ålesund* ved Erlend Mo Rognes, *Bachelorstudent i Shipping Management ved NTNU i Ålesund. Kontaktopplysninger: e-post erlenmr@stud.nt.no* eller *Viktoriia Koilo*, *Førsteamanuensis ved NTNU Ålesund. Kontaktopplysninger: e-post viktoriia.koilo@ntnu.no*

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med: • NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no)

eller på telefon: 55 58 21 17.

Med vennlig hilsen

Viktoriia Koilo *Erlend Mo Rognes*

(veileder/forsker)

NTNU

Norwegian University of
Science and Technology