



Master's degree thesis

LOG950 Logistics

**The Organization of Purchasing in Offshore Supply
Bases**

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Anders Stedding Kristiansen

Abstract

The perception of purchasing and what is included in the term purchasing is to a large extent individual, but on the other hand purchasing is something that affects everyday life, both in private or for different companies. How the purchasing is organized, is to a large extent affected by the development of the markets, besides the various parts that constitute the markets, such as suppliers, products, and customers. Through establishment of products and services, merging and cooperation between companies across borders give basis for different organizational models that arise.

This thesis aims to give insight into how the purchasing can be organized in offshore supply bases by taking two of the bases operated by NorSea Group AS into consideration. This is done by looking at the purchasing for own use and further sale, besides examining the suppliers for different groups of products and services.

This research is taking purchasing for further sale into consideration and seeks to identify if there are differences in the purchasing structures used to acquire different products or services, besides figuring out if there are any adaptations or properties with a product or services that determine how the purchasing is organized. Furthermore, it is interesting to sort out if there are any factors that may be decisive for how the purchase of a product or service is done, in addition to see if any of these factors are common for different groups of products or services.

Based on the case study, review of relevant theories and mapping of the purchasing structure for products and services purchased for further sale, there is detected basis for a purchasing model that has the purpose to purchase groups of products and services on behalf of several offshore bases within the same organization.

Key words: Purchasing, Supply bases,

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1.0 Introduction

Purchasing represents a stage in the evolution of the humans in which way the trade for commodities and products are being obtained, according to this it was only later in the half of the twentieth century that the importance of efficient purchasing was widely recognized (Farrington & Lysons, 2006). And even later was the strategically aim opposite to the operational importance acknowledged with emphasis on the processes for purchasing, relationships and its performance rather than the core product. Van Weele (2010) highlighted when business become more and more competitive, purchasing and supply chain management have to become more important as a business key driver. A key to short-term financial position and a long-term competitive power is an efficient and constructive relationship with suppliers, this because most companies spend more than half of their sales turnover on purchased parts and services (Van Weele, 2010).

Traditionally the purchasing function was dedicated to obtain the proper equipment, material, suppliers and services of the right quality, in the right quantity, at the right place and time, at the right price and from the right source. According to Van Weele (2010) is this very operational description of the purchasing function, and then defined purchasing this way:

The management of the company's external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities is secured at the most favorable conditions. (Van Weele, 2010, 8)

This definition gives purchasing the picture of covering several activities at different levels in the value chain for a company, and not only for the operational level. This definition of purchasing from (Van Weele, 2010) will be the description and basis for purchasing in this thesis.

1.1 Background

The forecast and development of the Norwegian oil and gas industry seems to be good and positive today and in the future. According to Vatne (2013) is there still an increase in employments for the oil and gas sector due to increase in activities related to the North Sea, beside that international companies expand and establish new divisions in Norway. The development of new areas for exploration for oil and gas along the north coast gives indications that an increase in demand for products and services from suppliers and service

providers located in the northern part will arise (Vatne, 2013). The Norwegian Oil- and Energy Ministry and the Norwegian Petroleum Directorate (*Olje- og energidepartementet & Oljedirektoratet*, 2013) provide information about further development and establishment of further exploration areas in the North Sea, where both existing companies and newcomers are taking part. This also requires an increased development of services served from the mainland.

The picture of major development projects is also provided from some of the biggest actors in exploration and development on the Norwegian Continental Shelf. Both Det Norske (*Det Norske*, 2013) and Statoil (*Statoil*, 2013) have big projects under execution, beside upcoming projects that are at an early stage. With such favorable outlook will there also be an increased demand from service providers along the coast, with competition from existing companies, and the resurgence from new actors. From 30th of April 2013 are actors on the Norwegian Continental Shelf that do exploration and production of oil and gas exempted from the rules for public procurement (*Olje- og energidepartementet*, 2013). This means that negotiations and the making of contracts in the petroleum industry don't need to follow the detailed procedural rules or apply so-called alternative procedure, which may have an impact on how actors in this industry from now will obtain products and services.

1.2 Research Problem

The research for this thesis will be based on a case study; Yin (2003) defines the use of case study as a research strategy like:

The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented and with what result. (Yin, 2003, 12)

The case study for this thesis is based on one big actor in the offshore industry which in turn owns several offshore supply bases along the Norwegian coast and operating as a third-part logistic provider from these bases. With basis in several existing theories related to purchasing and the organizing of purchasing, beside qualitative and quantitative method for gather and analyze information and data will this research strive to identify how purchasing in offshore supply bases are organized. In addition will the thesis check if there are essential factors that are decisive for how the purchasing are done, beside see if there are potential for improvements in how the purchasing are organized.

This research is interesting in light of the development of the Norwegian oil and gas sector, the importance in how the purchasing in an organization is structured, and how it can be organized to achieve the best outcome for a company.

The research for this study is based on the following research questions:

Q1: Are there any reasons to assume that tailor-made products and services for customers are purchased from own subsidiaries, and that standardized products and services are purchased from external suppliers?

Q2: Are there any specific factors which may be decisive for how certain products and services are purchased?

Q3: With a starting point in existing purchasing models for a couple of the most traded products and services, is there any basis for making a new purchasing model for the most traded products and services that have a demand at the different offshore supply bases?

1.3 Organization of Thesis

This thesis consist of seven chapters, where chapter one is the introduction to the topic of this research area, beside give some background information about the conditions for the sector the case company are operating within. After presenting the research area are the research question presented. Chapter two present the theoretical framework for this thesis, where several theories regarded purchasing are taken into consideration. The third chapter presents the research methodology for this master thesis, where the research design and data collection are presented. In chapter four will the analysis and discussion be carefully reviewed, by first present the case study and the case company, before each research question will be analyzed and discussed in the light of the theoretical framework and results from the methodological part. Chapter five is forming the conclusion and gives suggestions for further research, in chapter six is the references listed, and in chapter seven is the appendixes attached.

2.0 Theoretical Framework

This second part presents the theoretical framework for the master thesis. In this part are theories gathered in light of the research areas and research question. The theoretical framework from this chapter will be further used in chapter four, the analytical discussion part of this thesis.

2.1 Organize the Purchasing

There exist several theories, and several ways to organize the purchasing within an organization or a firm. First by review some theories about where and how to organize the purchasing, and then secondly look at the location of purchasing in the organization which are often dependent on the manager's view on the purchase (*Van Weele, 2002*). This relative to an operational purchase will be placed relatively lower in the organizational hierarchy. A purchase that managers will consider as a competitive factor or strategically important for the organization, will be placed higher in the organizational hierarchy. The three following factors will in a large extend affect managers view on a purchase.

- The purchasing share in the end-products cost-price, which means that the higher the purchasing content for the end product, the more strategic is the purchasing function considered by the management.
- The financial position for the company, in light of managers in a company who are experiencing time with financial loss will be much more focused on its purchasing operations and purchasing costs.
- To the extent on how dependent the company is on the suppliers market. Managers are usually giving more attention to a supply markets with high ratio of concentration.

For this research is it firstly important to be familiar with general theories about how to organizing purchasing in light of different models, levels and structures. With a basis in general purchasing theories will the analytical discussion part in this thesis become more understandable.

2.1.1 Levels of Purchasing

According to Van Weele (2002) is the allocation of purchasing tasks, responsibility and authority to find at three different levels in the organization. These three levels are strategic, tactical and operational. At which level the different purchasing activities are

located in the organization can give an identification on how important the product or service purchased are for the buying company, or the complexity to obtain products or services in the market. It can be interesting to see if there are any differences from what the theory describe, and how this is organized in the offshore sector.

2.1.1.1 Strategic Level

Purchasing on a strategic level covers decisions that can influence the position in the market for the company in the long run. Decisions of this sort are primarily under the responsibility of the top management (*Van Weele, 2002*), and some examples of decisions are:

- Development, issuing or implementations of guidelines for operational activities.
- Establishing long term contracts with suppliers or customers, partnerships agreement, or other types of market cooperation's.
- Decisions due to supplier strategy or decisions related to different types of policies.
- Major investments related to make or buy, or investments in assets

2.1.1.2 Tactical Level

The next level for doing purchasing involves the purchasing function in light of product, processes, and supplier selection (*Van Weele, 2002*). Some examples on purchasing at this level are:

- Agree or corporate for an agreement with suppliers.
- Prepare or develop analytical programs.
- Adopt and conduct certification programs to improve quality on products or services served by their suppliers.
- Select and make contract with suppliers in general.

Decisions of this sort have a medium impact and duration for normally one to three years. These decisions can also be seen as cross functional in the way that they deal at a coordinating and co-operational level in the company based on decisions including engineers, manufacturers, logisticians etc.

2.1.1.3 Operational Level

At this level we find activities related to ordering and expediting functions in the company. Activities at this level include materials ordering, monitoring, deliveries, and checking

quality on incoming materials (*Van Weele, 2002*). Examples on specific tasks at this level are:

- Follow up ordering processes.
- Expediting orders
- Monitor and evaluate suppliers performance
- Solving problems in relationships with the suppliers if something occurs.

2.1.2 Structures for Purchasing Organizations

In this part will different theories about how to organize the purchasing structure in an organization, be taken into consideration. In the approach for supply chain is purchasing seen as an organizational process, but often is purchasing seen as a separate part of the entire organization rather than an integrated activity (*Farrington & Lysons, 2006*).

This subsection will address theories about horizontal and vertical integrated organizations beside theories about organizational models for the purchasing processes. What can be interesting to see are if there exist several models for purchasing within one company in the offshore industry, and how this is hierarchically organized, in addition to if there are any factors that determine how the purchasing is organized. It will also be interesting to see if the organizing of the purchasing within a company or sector seems similar to what the theory review reflect, or if the organizing of the purchasing structure has an own unique development.

2.1.2.1 Horizontal or Vertical Organization

First, how the hierarchical structure for the organization seems to look like, have an impact on how the purchasing processes are organized, in light of horizontally or vertically integrated organizations. *Farrington & Lysons, (2006)* explain that horizontally organizations consist of fewer layers but are not completely flat. A horizontal organization is more characterized with core processes and team works, beside these characteristics:

- It is not the task but the process that the company is organized around.
- The hierarchy is lowered, by lowering number of divisions and non-value adding activities
- Assigning the ownership of processes and process performance to the employees.
- Evaluation and performance objectives that are linked to customer satisfaction.
- Design of the organization is built around teams and not individuals.
- Managerial and non-managerial activities are often combined.

- Use people with multiple competences.
- Employees are trained to perform on “just in time”.
- Get the most out of the supplier and customer contact.
- Individual skill development and team performance is rewarded, not skilled performance.

Compared to a horizontal organization, is a vertical organization giving some advantages by using what is called a functional department. In the vertical organization it is easier to set the different specialist to different tasks, training new people and, control performance and operate more efficient with each task. Beside that the morale among the department staff is getting higher due to ownership in their own tasks (*Farrington & Lysons, 2006*). This is called functional departmentalization, and involves placing employee with the same tasks, and who contribute to the same business area together in the same departments. Other characteristics with vertical organizations are:

- Work is structured, divided and organized into functions, departments and tasks.
- Primary room for performance is individual for each employee.
- Decisions authority goes up in the organization.
- Managers’ responsibility is to find the right people, give them the rights tasks, measure, evaluate and give feedback to them.

On the other side *Farrington & Lysons (2006)* also highlight some disadvantages by using vertical organization. Some of the disadvantages are that the employees can be rather concerned about authority than creating value for the customers through the organization work flow. Each individual view can be seen as narrow and very department specific, with ignorance of other colleagues knowledge or performance, and in the same way if something occur in the department that are not under the control area for an single employee are there less willingness to contribute to solve the problem.

An organization can consist of multiple business units, different divisions or business areas. Both kind of organizations horizontal, vertical or something in between have an strong impact on how the purchasing are structured in the company (*Farrington & Lysons, 2006*).

2.1.2.2 Organizational Models

The examples and theories with organizational models will be limited to multi-unit companies, due to the company this master thesis is based on. According to Van Weele

(2010) is it several alternatives available for organizing purchasing in multi-unit companies:

- Decentralized purchasing structure
- Centralized purchasing structure
- Hybrid structure
- Cross functional sourcing teams

2.1.2.2.1 Decentralized purchasing structure

Van Weele (2010) explains that this structure can be found in business with a unit structure, which means that every business manager is responsible for their own financial results. This structure is particularly attractive to conglomerates that have a business unit structure where each of the business units work independently, with different products and do their purchasing in different markets. In a case where the business units produce similar products, can a case scenario arise where the different business units are sourcing for the same products in the same market, which can give limited saving or advantages for the entire organization. The worst case scenario arises if the different divisions in an organization operate as real competitors in the supplier market.

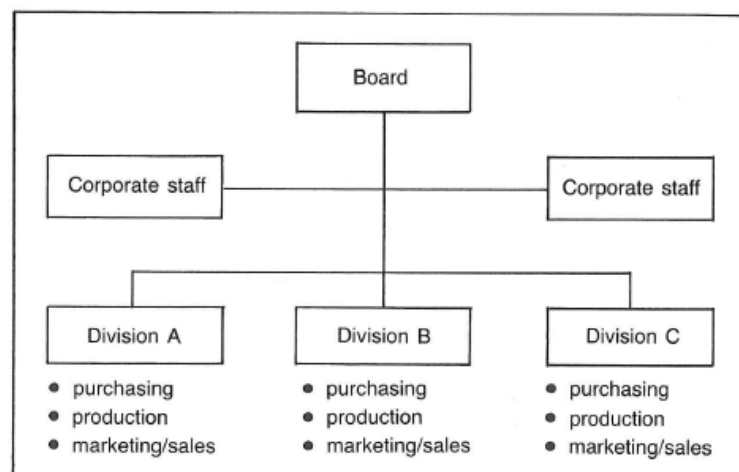


Figure 1: Decentralized purchasing organization structure, (Van Weele, 2002)

2.1.2.2.2 Centralized purchasing structure

According to Van Weele (2010) is the purchasing department found centrally in the organization on a corporate level, where corporate contracting is finding place on a strategically and tactical level. Decision due to product specifications are made centrally often in close relation to a central engineering, or a research and development apartment.

Negotiations and contracts with suppliers are often agreed upon with pre-selected suppliers stated for several years. The main advantage of this structure is that through co-ordination of purchasing better conditions in terms of price, costs, service and quality from the different selected suppliers can be achieved. Beside that the effort can give product and supplier standardization. The disadvantage can occur if managers in the different divisions or business units are convinced that they are able to reach better conditions by acting individually and undermine the position of the central purchasing department. This business structure is appropriate in cases where several business units buy the same products which are at the same time strategically important for them.

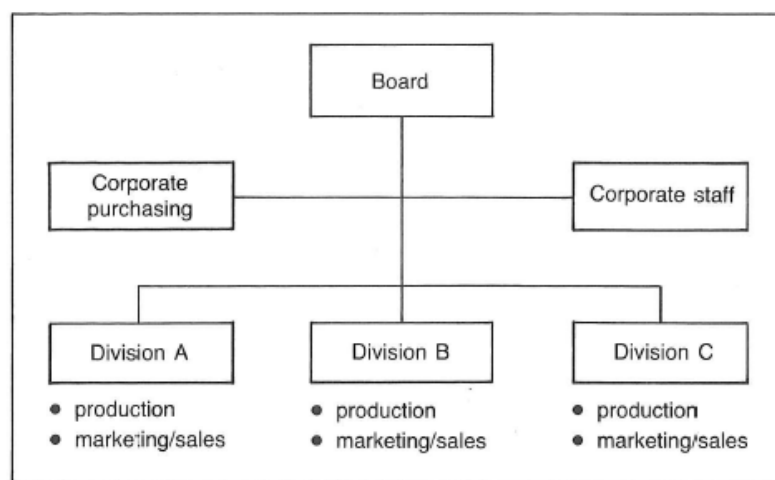


Figure 2: Centralized purchasing organizational structure, (Van Weele, 2002)

2.1.2.2.3 Hybrid Structure

Van Weele (2002) explain that in some major manufacturing companies a corporate purchasing department are existing on a corporate level, but were also individually business units also conduct strategically and tactically purchasing activities. A structure like this usually deals with a corporate purchasing department that designing procedures and guidelines for purchasing for the different business units. Beside that they can facilitate or solve coordination issues between the different divisions or business units. The purchasing activities are all delegated in the organization to each of the division or business units. The corporate purchasing department in an organizational structure like this may be the part that are responsible for the human resource management in purchasing and supply.

Van Weele (2002) describes this hybrid structure theory as a centralized / decentralized purchasing organization, while Van Weele (2010) describes this theory as a line / staff organization.

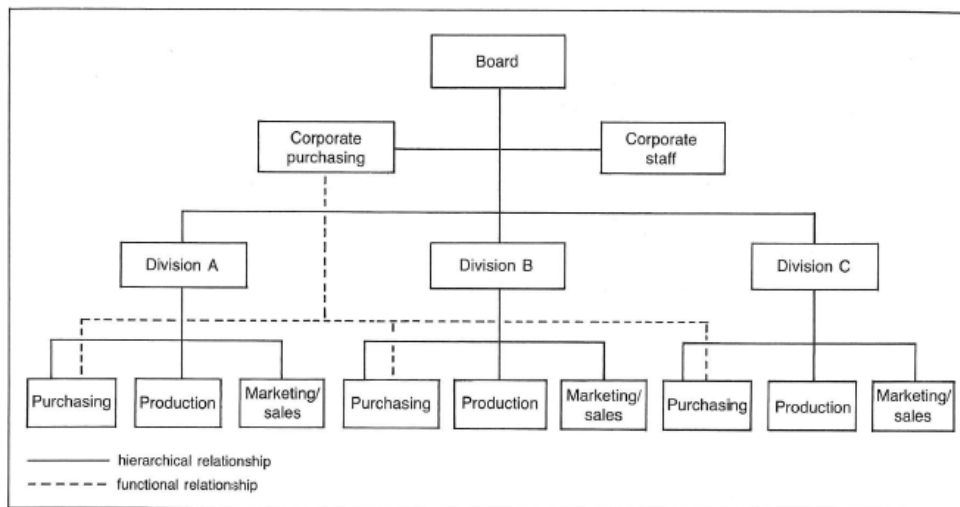


Figure 3: Centralized / decentralized purchasing organizational, (Van Weele, 2002)

The hybrid structure according to Van Weele (2010), represent a combination of the previous two organizational structures, and that the terms “hybrid”, “pooling”, and co-ordination” are used interchangeably. The concept in general is to aim the effort of combining common material requirements among two or more operation units with the objective to improve the leverage of the company in order to reduce the overall material cost or to improve the service obtained from the suppliers (Van Weele, 2002). According to Van Weele (2002) and Van Weele (2010) exist probably a lot of variants in practice, depending on the type of commodity. In some cases may the pooling be of a more voluntary character, and in other cases forced upon the business units. Under follow three examples on polling structures: (Van Weele, 2002), and (Van Weele, 2010).

- Voluntary coordination: This is a structure where the operating units are voluntary to corporate with contracts given from their purchasing department, or operate individually, and where the contracts are formed by a purchasing coordination committees that consist of the largest purchasers within the organization
- Lead buyer ship: The business unit with the largest consumption of one or several specific commodities have the responsibility to source and negotiate to a corporate agreement with those suppliers involved for this product. This business unit has the responsibility to collect the demand from the other operating units within the company, and negotiate on behalf of those. Later the different operating units can

purchase direct from the chosen suppliers based on the agreements made in the contract with that specific suppliers.

- Lead design concept: This kind of co-ordination is co design for an operation unit or a division within the organization. These means that the division who are responsible for the design of a component in the organization also has the responsibility for negotiation and contracting for all those materials that are needed for this product. An example from the automotive industry can be a division or department that has the responsibility for developing a new gearbox, where this division also has the responsibility to source and purchase the needed materials and components.

The pooling and co-ordination may occur at different levels of aggregation such as article level, supplier level, business unit level, division level, or according to geographical characteristics of the purchase market. The organizing of the purchasing structure is dependent of a large number of variables, which make it difficult to compare companies (*Van Weele, 2010*).

According to the theories of Van Weele (2010), has also Flynn, Johnson & Leenders (2011) described and illustrated this theory. For example an organization can consist of multiple business units, different divisions or business areas, which means that different products or services are related to these different areas, and in that way requires a different mix of items to purchase. These different business units are often operated as a profit center, and linked to the organization as an own division that are measured out of its profit. For divisions like this is purchasing the largest single controllable cost to measure, and have a direct effect on the profit. In case of that has divisions of this kind got the direct authority over their own supply. Different organization has developed a decentralized-centralized supply or a hybrid organizational structure. The idea and reasons behind this is to focus on maximizing the advantages of the organizational structure and minimizing the disadvantages. (*Flynn, Johnson & Leenders. 2011*)

In this hybrid structure are the supply function partially centralized at the corporate or head office and partially decentralized to the different business units. Flynn, Johnson & Leenders (2011) explain that the hybrid organizational structure capturing benefits from both centralized and decentralized structure, besides neither being completely centralized

nor decentralized. In this organizational form for the corporate company, will the supply organization work together with the different business units' supplier departments in tasks that are more efficient handled on a corporate basis such as

- Establish policies, procedures and different systems.
- Recruiting and training new personnel.
- Coordinate the purchase of more common and standards products and services.
- Measure and follow up the supply performance.
- Develop corporate supply strategies.

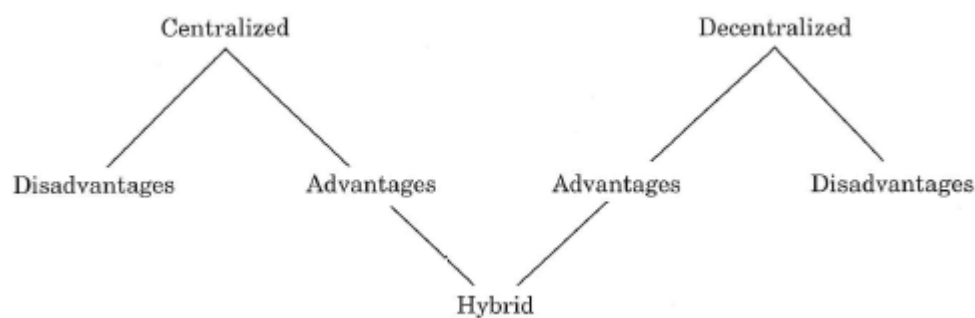


Figure 4: Illustration of the hybrid model, (Flynn, Johnson & Leenders. 2011)

2.1.2.2.3.1 Divisionalisation

Keeping the theories about hybrid structures for a purchasing organization in mind, *Farrington & Lysons (2006)*, explain that it is common to use divisionalisation in larger organizations that are highly diversified. When doing divisionalisation focus can be set to the product or service, geographically or to the final customer (*Farrington & Lysons, 2006*). When each division is established, each division is getting formed and organized with its own structure for a day to day operation. In divisionalised organizations it is easier to show the profitability and contribution from each division, compared to centralized organizations. But on the other hand *Farrington & Lysons, (2006)* complain that divisionalisation itself will probably not increase performance, but on the other side show in which way resources are allocated and where in the organizational structure the different decisions are taken.

According to *Farrington & Lysons (2006)*, depending on how the organization is structured, the purchasing part can be either centralized or decentralized.

For an organization where the purchasing is done centralized it implies that the purchasing are done from headquarter, or from some regional or divisional levels in the company. Farrington & Lysons (2006), emphasize that by concentrating the coordination of purchasing for the entire organization in a central department gives advantages such as economic of scale, beside better coordination and control over the activities.

When looking at economies of scale while doing centralized purchasing the most significant factors Farrington & Lysons (2006) presents are:

- Forecast for totally quantity of different items in the organization can be better prepared for a given time period. This can also give large scale effects for the organization while negotiate for quantity discounts or rebates.
- From the suppliers' point of view will dealing with a centralized purchasing department give better incentives to keep the customer in the long run, and make the opportunities to negotiate for a long term relationship for supply. This can also lead to better benefits for both parts, and better prices on the products since the supplier will have the opportunity to spread the overhead for the products over a longer production run.
- The purchasing organization can reduce its supplier base by getting a better agreement with some few suppliers. Centralization also permits for professionalization within the purchasing department in light of specialization in sourcing regionally or globally for different materials, and following markets trends.

About coordination and control Farrington & Lysons (2006) complain that the strategic focus tends to be greater for a centralized purchasing organization compared to a divisionalised purchasing organization. Uniform policies can be formed such as single sourcing. Some important topics related to this are:

- A purchasing department or a team can be separated to be a cost center, an activity cost pool or a profit center, dependent on the task that are given. It is also easier to follow up the control of budget both for the purchasing function and the total expenditure for the supplies. While it's getting easier to standardize the cost when the prices is obtained of one purchasing department.
- It can be easier to follow up and control the inventories, beside reduce the loss of capital tied up in stock.

Compared to centralized purchasing are decentralized purchasing traditionally referred to purchasing done by different division or plants. Farrington & Lysons (2006) has found some of the advantages and disadvantages by using decentralized purchasing. Some of the advantages for the purchasers are that they are closer to the user and will in that way have a better understanding of local needs. The response time can be reduced, and the same with the transportation. The company will have an opportunity to a closer relationship with the suppliers. When having a decentralized purchasing organization it can be easier to adapt to geographical, cultural, political, and social dimensions.

But on the other hand, the disadvantages with decentralization is that the purchasing organization can be too local focused instead of working operational and strategic. This can lead the purchasing down to a lower organizational level. The expertise can be limited in requirements and there can be few opportunities for cross-functional collaboration. And the purchasing cost can be relatively high due to a lack of standardization that can arise beside that the local purchasing staff will have restricted career opportunities.

While decentralization implies that the organizational activities are spread over a number of plants and locations, is centralization giving the picture who explains that all the organizational activities are gathered into one location. From this, an issue about centralization or decentralization for the organization may arise. Due to that, there are three models that Farrington & Lysons (2006) has present for procurement for multiplant organizations. I will shortly describe these three models.

The first model, describe a total centralized purchasing organization, with no independent purchasing department or staff within the different business units. This means that procurement strategy, policy, systems and standards are controlled centrally. The different purchasing activities are also done from a central department.

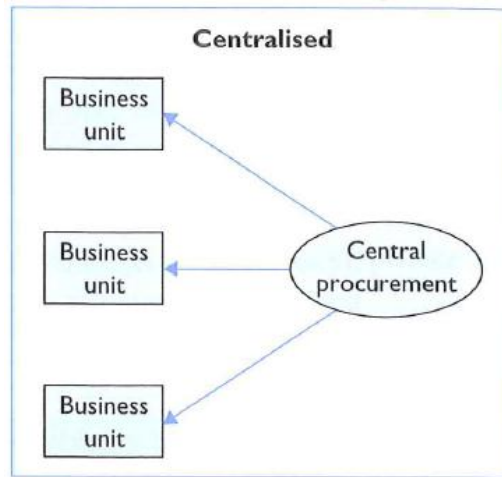


Figure 5: Centralized purchasing in a multiplant organization, (Farrington & Lysons, 2006)

In the model where coordination is devolved are most of the different purchasing activities carried out to different business units or operational divisions within the organization, but they are coordinated by a purchasing function that is centralized. Centrally, purchasing strategies, policies, systems, and standards are controlled. The same with products and services that are common for more than one of the business units within the organization are also centralized.

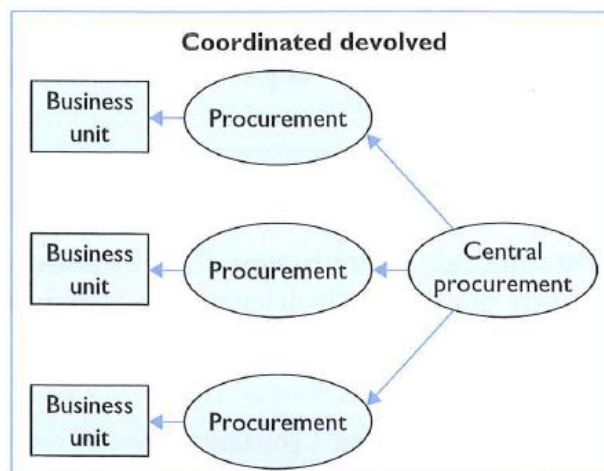


Figure 6: Coordination devolved for purchasing in a multiplant organization, (Farrington & Lysons, 2006)

In the consultative model are purchasing activities of both strategic and operational art carried out to the different business units or operational divisions, with guidance and advices from a purchasing function that are centralized. Still there are a central purchasing department that takes the overall strategy with policies, systems and standards.

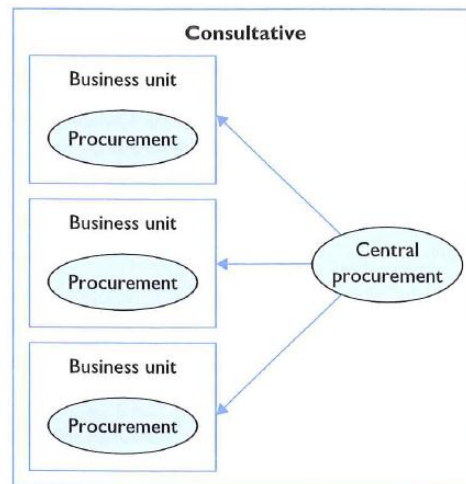


Figure 7: Consultative purchasing in a multiplant organization, (Farrington & Lysons, 2006)

2.1.2.2.4 Cross-functional Sourcing Teams

Van Weele (2002), and Van Weele (2010) describes this organizational form as relatively new regarded purchasing, and describes this through a case analysis of IBM that experiences financial loss in 1992, and reorganized their purchasing department. Through a new purchasing structure was a consolidation of all needs of components provided for the entire company through one single point of contact. This single point worked as commodity teams for the suppliers. Contracting was done centrally at corporate level, but the operational purchasing activities were decentralized to the different divisions.

Purchasing of components and other production-related goods were organized through a division for global procurement executives. These executives had the responsibility for sourcing, purchase and fix the supplier policies for the entire organization for a defined group of components. With help of reports, meetings and information sharing where purchase and supplier's issues are discussed and solved new decisions for the entire company can be agreed upon. In this order a relatively big company could get the corporate purchasing strategy to meet with the need for the individual units. This resulted in a thorough integration of the purchase and suppliers policy in the organization and gave IBM an enormous purchasing power in combination with maximum flexibility (Van Weele, 2010).

By gather corporate commodity plans in an organization, send this further to procurement executive councils, and then get them prepared to a cross-functional commodity teams can be seen as an advantage for bigger organizations doing sourcing and purchasing in a global

setting. This because the team who can consist of professionals in example product development, research and development, marketing, production, distribution and finance can beside purchasing professionals through a virtual network source for suppliers all over the world for a specific service or commodity (Van Weele, 2010).

The focus for IBM is to select suppliers who offer products and services at a world-class level from suppliers who have a global presence. After they pursued uniform purchasing procedures, ways of working, defined purchasing requirements, how to prequalify suppliers, beside how to select suppliers and what the contracts should include due to corporate rules and guidelines gave some positive remarks for the entire organization. The result was lower price and cost level, higher quality and better service beside lower inventory. Include that the numbers of suppliers was narrowed, but the commitment to those suppliers that was retained start to grow. Out from this *it is stated that:*

More attention can be given to the relationship with an individual supplier in the value chain and a relationship based on continuous performance improvement can be developed. (Van Weele, 2010, 287)

Some important key factors to consider to realize, and improve a global sourcing process are strong leadership, active involvement of management, formalized supplier management, corporate commodity plans, cross-functional teams and standardization of logistics and delivery processes.

2.2 Purchasing in a Strategic view

This subsection will deal with purchasing and strategy by take a look at steps and models that has to be taken into consideration while organize the purchasing for a company on a corporate or strategic level. There are several factors that contribute to the decision of the importance of a product or service. Dependent of business sector or industry will these have a big impact on how the specific products are being obtained for the buying company. For companies in the offshore industry will probably several strategies exist for how to purchase different products or service. Before we define different purchasing strategies for products or services in the analysis and discussion part of this thesis is it important to have an overall picture over the theories about purchasing strategies.

2.2.1 Purchasing Strategies in the Kraljic Matrix

Kraljic (1983) argue that a firm supply strategy depends on two factors which a company really needs to take into consideration. First the strategic importance of the purchase in terms of the value adding to the products line, percentage of raw material in total cost and the products impact on profitability. The second factor is the complexity of the supplier market for this product, such as scarcity of the supply, pace of the technology or substitution for materials, barriers for entry in markets, or logistics cost or complexity, beside market conditions such as monopoly or oligopoly.

If a company maps the situation according to these two factors, top management or purchasing executive can get help to sort out which kind of supply strategy the company should stick to, to exploit its purchasing power, beside sort out important suppliers, and reduce risk. Or they can find attractive new options, or map vulnerabilities. Kraljic (1983) describe five questions that should be taken into account and consideration.

1. Does the organization make good use of their opportunities, such as gather and combining the different requirement for supply for different divisions or subsidiaries? In this way the entire organization purchase can be displayed.
2. Does the organization have opportunities to avoid anticipated supply bottlenecks or interruptions in the supply chain? Are there factors that can interrupt the supply from the organization of suppliers?
3. How much risk is acceptable for the organization to take? This in light of vendor mix, the extent of contractual coverage, are the supply sources regionally distributed, and what are the availability of strategic components or products. To lessen unacceptable risk can a company meet annual materials requirement through long term contracts. For a manufacturer that relies solely on purchasing in a spot market, may reduce the risk by making a mix of purchase on supply contracts and spot.
4. Does the organization know what balance between make or buy give the best result in light of cost and flexibility? Compared to competitors, a company that purchase a larger percentage of supplies from own sources are standing in a better negotiation positioning when it comes to cover the reminding requirements from suppliers, than companies that are less integrated. Except in situations where suppliers has chronic overcapacity.
5. Is there any opportunity to cooperate with suppliers or even competitors to strengthen long-term supplier relationship, or capitalize on shared resources?

Kraljic (1983) present a figure in a matrix-format where he classifies the different stages for purchasing in an organization. There are four stages that are presented in the matrix according to Caniëls & Gelderman, (2005). These four stages are purchasing management, materials management, sourcing management and supply management.

Profit impact	Supply risk	
	Low	High
High	<i>Leverage items</i> Exploit purchasing power	<i>Strategic items</i> Form partnerships
Low	<i>Non-critical items</i> Ensure efficient processing	<i>Bottleneck items</i> Assure supply

Figure 8: The Kraljic purchasing portfolio model, (Caniëls & Gelderman, 2005)

According to Caniëls & Gelderman (2005), further research and studies done in relation to use of the matrix by professional purchasers has clarified that the purchaser makes a clear distinction between several strategies within each of the quadrants. Gelderman & Van Weele (2003) Follow this up by explaining that the purchaser first identify strategies to hold their position in the quadrant, and then secondly strategies to move to another position. But according to Caniëls & Gelderman (2005) is it still unclear which conditions that determine the choice for a specific purchasing strategy within a quadrant.

Gelderman & Van Weele (2002) provided a case study based on the Kraljic matrix where they have gone more in depth on the four squares in the matrix. They found the main movements within the matrix for goals and strategies beside identified and described circumstances and conditions which are leading to the goals for a company strategy.

2.2.1.1 A Closer Look at the Kraljic matrix

Caniëls & Gelderman (2005) has mapped the different strategies within each square of the Kraljic matrix. Different strategies related to the different squares will be shortly described in light of Caniëls & Gelderman (2005) findings.

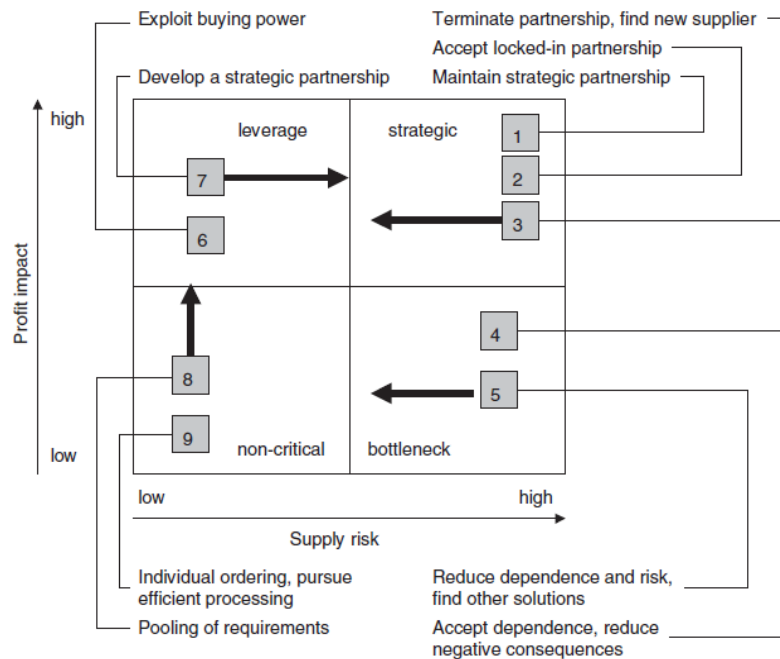


Figure 9: Overview of purchasing strategies for all portfolio quadrants, (Caniëls & Gelderman, 2005)

2.2.1.1.1 Strategic Items

Items in this group represent a considerable value to the organization in terms of large impact on the profit, and a high supply risk. Common is that in several cases there are few or maybe one supplier, which increase the supply risk. General recommendation in this quadrant is to maintain a strategic partnership for the supplier management, in order to counterbalance the supply risk, and build a partnership relationship with its supplier. But according to this are Buvik (2011), mentioning that it is important to distinguish between unilateral and mutual adaption in relation to specific investments in a strategic partnership. Mutual adjustments between the purchasing organization and the supplier require that both parties coordinate the design a utilization of investments in the developing of products, processes, technology and competence to get the value creation more efficient in both companies (Buvik, 2011). Another solution is that purchasing practitioners employ two additional purchasing strategies in this quadrant, such as a looked-in partnership and terminate a partnership, find a new supplier. A locked-in partnership is a strategy that often occurs when the buyer is subjected to unfavorable conditions of the supplier and is unable

to pull out of the situation, which means that the total interdependency is expected to be lower. The strategy of terminating a partnership occurs when a supplier's performance has become unacceptable and incorrigible (*Caniëls & Gelderman, 2005*).

2.2.1.1.2 Bottleneck Items

This kind of products have a more moderate influence on the financial results for a company, but they are vulnerable due to their supply, and the suppliers have a more dominant power in their position for this products. There are two strategies that can be taken into consideration (*Caniëls & Gelderman, 2005*). The purchasing organization can accept the dependence and reduce the negative consequences and have their main focus for their strategy to assure supply, and if necessary even to additional cost. The second strategy can be to reduce the dependency and risk by finding other solutions. This strategy deals with the idea about reducing the dependency on the one or few suppliers. According to Buvik (2011) is the purchasing organizations main task to secure continues supply for bottleneck items by source for alternative suppliers or substitutes for their purchasing products. The purchasing organization should involve in development of the products together with suppliers or adopt some production by themselves of these products to reduce the risk for access to the products, although the unit cost for such production probably will be high.

2.2.1.1.3 Leverage Items

This group consists of products that in general can be obtained from different suppliers. Although the products represent a relatively large share of the end product cost price beside a relatively low risk of supply. The purchasing organization has many possibilities and incentives for negotiation since small percentage of cost savings will involve bigger cost savings. Strategies related to this group are exploit buying power and develop a strategic partnership. In the strategy for exploit buying power are there no reasons for long-term supply contracts since suppliers and products are interchangeable and competitive bidding occurs. The second choice in this category is to develop a strategic partnership where practitioners choose to abandon the leverage position and start a strategic partnership with its suppliers. This is a cooperative strategy that is only pursued when the supplier is willing and able to contribute to the competitive advantage of the buyers firm (*Caniëls & Gelderman, 2005*). In scenarios like this it is expected to find a balanced power position between the buyer and supplier.

2.2.1.1.4 Non-critical Items

The last quadrant is related to products that usually have a small value per unit, and there are several alternative suppliers available. From a purchaser's view, these items cause few technical or commercial problems for the organization, but as a rule of thumb, these products require 80% of the purchasing department time, but on the other hand, represent less than 20% of the purchasing turnover. In general, purchasers are advised to the strategy where they should pool the purchasing requirements, which means that the handling of non-critical products requires a purchasing strategy that is aimed to reduce the logistics and administrative complexity. The main idea is to enhance purchasing power by standardization and bundling of purchasing requirements. The second category of strategy is individual ordering and efficient processing, that says whenever it is not possible to pool the purchasing requirements, professional purchasers adopt some kind of individual ordering, for instance by means of a purchase card. In this way the indirect administrative activities related to a single purchase can be lowered (*Caniëls & Gelderman, 2005*). According to Buvik (2011) it is important to standardize the product range to reduce the number of suppliers who serve the organization, and due to that make operational supplier contracts for supply for a wide range of products from one supplier.

2.3 Use of Purchasing Consortia

This subsection will illustrate the concept of a consortia and how a consortium can be used in relation to purchasing. Essig (2000) describes consortia as a concept where horizontal relationships and strategic understanding gives a competitive advantage for supply management. Alderighi (2007) explain that in some cases a consortia can make a pro-competitive result, like a reduction in prices not only for the members of the consortia but also for other companies in the market that are not a part of the consortia. In the offshore industry the use of consortia is common, especially in projects where several actors cooperate in the exploration for oil and gas within one licensed area for a given timeframe. In relation to the last subsection about strategies, will this sub-chapter about purchasing consortia be relevant in light of how the purchasing of different products and services are structured today, and how it can be structured due to the organization's strategic positioning.

2.3.1 Buying Consortia

Alderighi (2007) explain that consortia or other types of "demand pool" associations are being created so members can achieve economies of scale besides getting better bargaining power. Reason for companies to participate in a consortium is in most cases based on

economic factors. Due to sectors, there are no sectors that are standing more out of others in light of establishing a consortium. According to Alderighi (2007) are there two main reasons for joining in a consortium. The first reason is to gather common associations into chambers like trade associations and so on. The second reason is related to region, and then specially for districts, to gather companies and organizations that are within the same area.

There are different factors that should be taken into consideration in the choice of joining a consortium or being independent. Alderighi (2007) explains this due to the allocation of the bargaining power for the parties involved and how the switching cost are presented. First five different examples related to bargaining power:

- Differences in prices are related to differences in costs. This due to unit cost of serving large buyers is lower than serving small buyers, and then large buyers get a lower retail price.
- Presence of asymmetric information, due to negotiation and contracting. With presence of larger quantities, there should be a room for discounts.
- If a large buyer has better alternatives than a small buyer it is expected that the large buyer get more bargaining power and pay a lower price.
- Large buyers have to pay a lower unit price if there are some buyers who negotiate separately with a monopolist, or if the total surplus function is concave, or the buyers are risk averse.
- If there is any opportunity that the sellers can collude, the sellers deviate is higher if there is a large buyer. But collusion can only be sustained at lower prices.

Due to switching cost, Alderighi (2007) explains that switching cost between sellers occur when an investment specific to a current seller must be duplicated to a new seller for instance. It is normal that a consortium have lower switching costs than small and mediums sized companies, this is because a consortium is designed for contracting with sellers. Alderighi (2007) explain this like consortia is maybe a substitute for buyers in the light of choosing the cheapest provider.

2.3.2 From a short term view to a long term view

During the last decades have the agenda and research due to purchasing changed from a short term view where price reduction have been an important part, to now a more strategic long term view with focus on supply chain management (Essig, 2000).

Focus on external relationships has from earlier been primarily on strong vertical relationships with the major suppliers therefore Essig (2000) are trying to refocus this view of purchasing from a vertical relationships to horizontally strategically cooperation.

The term that has been mostly in use for purchasing consortia as “cooperative purchasing”, and in relation to industrial companies are “consortium purchasing” been used. According to Essig (2000) is there a reality that there are many sources dealing with purchasing consortia, but still there are not that many adopted in the industrial sector.

The consortium sourcing matrix shows the redefinition according two central dimensions, which means that the conceptual focus of purchasing have to be changed and go in the direction of a strategic perspective, beside that a consortium has to be organized as symbiotic relationships between the different purchasing companies.

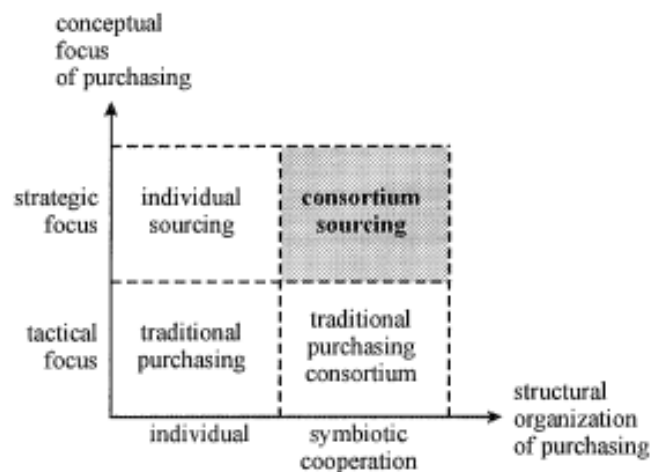


Figure 10: Consortium sourcing matrix, (Essig, 2000)

Essig (2000) explains that to realize a consortium for sourcing, the different members of the consortium have to establish a cooperative structure where purchasing function from at least two companies at the same level of the supply chain has to cooperate together so they can combine their purchasing volume. And further, to get a successful consortium the structure of this consortium has to be a symbiotic one. From a biological idea, Essig (2000) have used the word symbiotic in purchasing context because the symbiotic theory are the basis to show that economic effects are necessary to build up a successful consortium sourcing structure.

2.4 Coordination

When several actors should work together to achieve goals together, they have to organize a kind of cooperation so they can achieve the same goal together, which a single actor don't need to do, to achieve the same goal. This kind of organizing is a way of coordination, such as Malone (1988) present coordination:

...the additional information processing performed when multiple, connected actors pursue goals that a single actor pursuing the same goals would not perform.
(Malone, 1988, 5)

This definition of coordination are also including three components that has to be fulfilled, which are that two or more actors has to be involved, who should do the different tasks and in which order should the different steps be done to achieve the goal.

Crowston & Malone (1994) is defining coordination as: "...managing dependences between activities" (Crowston & Malone, 1994, 90). This definition is simply based upon if there are interdependence is there nothing to coordinate.

Malone (1988) also emphasize that coordination differ from production, and that there are two goal-relevant categories of tasks. One is that the coordination task is the processing of information and how it is performed because there is more than one actor involved. Second is the production task where all the "other tasks" are performed to achieve the goals. According to Crowston & Malone (1994) are group decisions making and communication two processes that need the attention for managing specific dependencies in coordination. The degree of coordination in a purchasing process will also be affected of which actors that are involved in the process and how they are connected. Related to the offshore sector will there for instance be different forms for coordination between different actors, suppliers and customers. In addition to acquire different products and services for own use or for further sale, exist there several ways of coordinate these activities between different actors in the chain.

2.5 Specific Investments and Transaction Cost Analysis

Buvik (1995) mentioning that traditional spot markets has been changed over years and into what is called domesticated markets which have been taking over for competitive markets. For industrial firms several of these have started running long-term contracts with one or some few suppliers. A change like that may also change the costs picture in the market. Related to that, three different main groups of transaction costs have been classified due to the way of organizing transactions (Buvik, 1995). These costs are bargaining costs, control and monitoring costs and maladaptation costs. Buvik (2002a) are also including a fourth group called performance verifications costs where he include costs such as product quality assessment. Buvik (2002a) are also looking at these four groups of transactions costs as ex post due to the fact that these costs could vary due to the problem of hidden actions that can be ongoing in a relationship. According products and services for further sale, or own use, is there an evidence that how the purchasing are organized also have an impact on which investments the involved actors has done.

Before taking a look on what kind of organizing, or governance form, Buvik (1995) explain that when minimizing the total sum of production costs and transactions costs, we should just have in mind two behavioral assumptions on how the humans act. The first is referred to bounded rationality which implies that human's ability to formulate and solve big and complex problems in a rational way is limited by cognitive capacities of the humans. The bounded rationality cause transaction cost because complex contracting is difficult to achieve organizationally when provision for bounded rationality is made (Radner, 1968), quoted from (Buvik, 1995).

The next behavioral assumption is opportunism. The important issue in this case, according to Buvik (1995), is that not everybody is actually behaving opportunistically, but there are some actors that might behave opportunistically. And it is difficult to separate honest actors from dishonest actors. Buvik (2002a) also describe direct opportunity cost as ex ante costs.

Buvik (1995) illuminate three dimensions that have a major influence on transaction costs. The first dimension is transaction of specific assets that are related to physical and immaterial assets in a specific relationship which means that it cannot be used for other purposes. There are six kinds of assets we can distinguish between according to Williamson (1991).

- Specificity of site, such as close localization of successive production units.
- Physical asset specificity, like tools that are required for production of a single specific component.
- Human asset specificity, such as human knowledge and experience.
- Brand name capital like sales promotion and advertising.
- Assets that are dedicated, such as different production equipment deployed by a specific customer.
- Temporal specificity, like assistance for production to improve on-time deliveries.

To invest in specific assets give costs in order to organize, handle dependency and protect against opportunism. But there should also be kept in mind that by carry out transaction specific investments will create economic value for the organization. These six main types of assets specificity encompass a large majority of what is referred to as assets specificity in light of transaction cost analysis (*Forker, Hanna & Patterson, 1999*). But these authors also explain that this list not include all factors, and beside that each of these six categories falls under the main ideas for assets specificity in an organization, and each of the components mentioned has its own unique impact.

The second dimension that Buvik (1995) are illuminating is due to uncertainty and complexity. First, external uncertainty is related to the environment where the transaction between the actors is taking place. Complexity refers to difficulties to specification and evaluation of terms in a trade for the actors to fulfill their contracts. Complexity in contracts for the involved partners in cooperation can also be shown as an internal uncertainty for the partners involved. This means that uncertainty and complexity call for mechanism to handle unpredicted events (*Buvik, 1995*).

The third and last dimension is the frequency of exchange between the economic actors involved. Buvik (1995) explain this by:

“...the frequency of exchange between the parties involved has to be sufficient high to recover potential costs for special arrangements if mediation of transactions outside the convential market mechanism is to take place.”

(Buvik, 1995, 14)

Beside that an increased frequency of exchange will reduce the unit costs for a specialized governance structure. According to Buvik, (1995) are the interaction between these three dimensions, and how they are connected to a transaction determining comparative

advantages of different types of governance structures. Billington & Ellram (2001) also arguing for these three factors, or dimensions. This by explain that the level of transaction cost depends on the frequency of transactions, uncertainty and the level of transaction specific investments, and that the transaction cost that result in the market are essentially the cost of running the system. And here are the vertical integration representing the failure in the free market to handle an exchange efficiently in a business relationship. Aas, Buvik & Cakic (2008) are also arguing that under some conditions the cost of conduct an economic exchange in a market may be higher than the cost of organizing this exchange within one company. These authors are also categorizing three basics kinds of transactions costs, then solely as adaption cost, performance evaluation cost and safeguarding.

Buvik & Reve (2002) are combining resource-dependency theory and transaction cost analyses, and found three elements that constitute the dependency an organization have regarding its trading partners. The first element is the importance of the specific resource that is exchanged, and to which extend the other part need this. Second element is the extent to which one of the partners that has the control over these resources. The third and last element is if there are alternatives or substitutes available for these resources.

The aspect of costs will probably be essential in all kind of decisions making for an organization, and especially in how an organization should organize their purchasing in a best suitable way. In light if the offshore sectors will the governing market form, and the degree of relationships between buyer and suppliers have a direct link to the organization`s transaction cost.

2.6 Organizational Structure of Markets

The nature for products and services, beside the market conditions has a great impact on the transaction between buyers and suppliers (*Andersen & Buvik, 2011*). Heide (*1994*) also illustrate that management of relationships in the marketing channels are rapidly becoming an important part. In this theoretical part, governance form for a hybrid market will be discussed. To start with governance, it can be described very broadly as the mode of organizing transactions (*Heide, 1994*). Related to the offshore industry, the degree of complexity of products and services provided will also make an impact on how these products and services are governed.

Hybrid and market modes for governance are according to Buvik (*2002a*) basically representing discrete governance modes and are vertically coordinated. Coordinated adaption means transactions in a market that earlier was done on an arm's length distance now are transactions that through mutual adaption are mutually done between nominally independent firms. The opposite will be internal organizing, where the organization is vertically integrated and the production will be in-house. Buvik (*2002b*) also refers to hybrid governance as coordinated adaption, and that does imply a movement away from conventional transactions in the market between independent forms in a trade.

Examples of hybrid governance arrangements are joint actions, long-term contraction and coordination that are done vertically (*Buvik, 2002a*).

Aas, Buvik & Cakic (*2008*) explains that the decision on how to govern business to business transaction should be based on the economic outcome. Buvik & Grønhaug (*2000*) explains that firms who are confronted with external uncertainty will together create "negotiated environments" and make inter-organizational arrangements which can be seen as a response to their strategy, and a response to uncertainty in the environment and inter-firms dependency.

How several types of cooperation between different companies and organizations develop over time is to some extent depending on the development of the market they are operating in. The offshore market is a big and complex market characterized with short and long contracts with several actors at different levels, with suppliers and customers as interested parties. Contracts between these stakeholders, and these stakeholders way of negotiate and cooperate will develop over time and give continuous changes in the market.

3.0 Research Methodology

The third part of this master thesis is presenting the research methodology that has been used. Through this chapter it will be explained which research approaches that have been used, and how the research have been conducted. First the research design will be described, before the data collection methods will be presented before and last evaluation of the quality of this research.

3.1 Research Design and the Case Study

The design for this research is a case study which is aimed to the company NorSea Group. According to Ellram (1996) is the case study method been criticized for being the least understood method used. But at least have there been a growing interest in using the case study method in business research. Most of the empirical research that have been done so far in logistics have focused on using quantitative methods such as statically testing of surveys and data (Ellram, 1996). Meredith (1998) explains that it is typically to use multiples methods and tools to collect data and both quantitative and qualitative approaches are included. The case study method is focused to one setting for finding and generalizing results. Further Meredith (1998) has also presented some advantages and disadvantages of using this method, where the three advantages read as follows:

- The study can be done in a natural way by observing actual practice
- It is easier to ask for, and get more information about the actual case
- The method is applicable and flexible to use in in different cases.

Meredith (1998) highlights cost and time, due to do direct observing as a disadvantage, beside the opportunity for errors, poor validation and questionable generalizability. Meredith (1998) sum up this part by: "...case studies are best for generating or extending theory." (Meredith, 1998)

This master thesis is a single case study about NorSea Group, and has both a quantitative and qualitative part. The problem area for this research is done upon organizing of purchasing in the organization, and are selected based on earlier assignments done in relations to this business sector, and a purchasing assignment connected to NorSea Group base in Kristiansund.

3.2 Data Collection Methods

Data material for case studies can be collected in several ways; Ellram (1996) gives several examples on appropriate methodologies in relation to what kind of studies that should be investigated, besides if the objective is explorative, explanative, descriptive or predicative. The research question or the problem area has a big impact on which kind of methods that should be used for gathering data for analyzing.

The figure bellow illustrates the framework for this master thesis. There are three parts which together has a significant impact on how this master thesis has been structured.

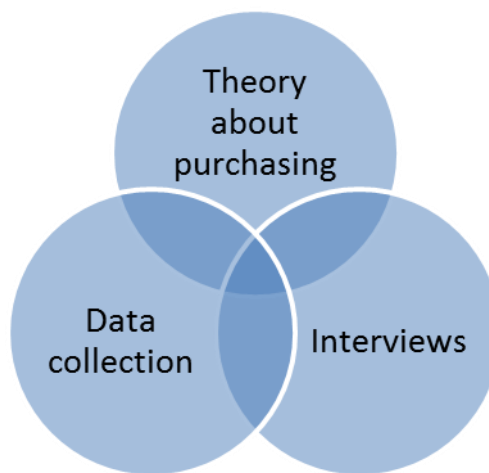


Figure 11: Data collection framework for this study

The theories about purchasing activities and organizing of purchasing that are relevant for this research has been in the last chapter. In the two next sessions will the qualitative and quantitative methods used for gathering primary and secondary data for finding an answer for the research question is presented.

3.2.1 Primary Data

Primary data are data that are gathered for the first time, and the researcher is the creator to define what data that are needed for doing the study. Interviews are one of the main techniques with an explorative design and are helpful to understand and interpret the actual phenomena in the best way (Gripsrud, Olsson & Silkoset, 2004).

Primary data for this thesis are based on qualitative research with three interviews of employees in NorSea Group. According to Marshall & Rossman (2006) are qualitative researchers extensively relying on-depth interviewing, and describe interview as a

conversation with a purpose. Yin (2003) explains that the interviewer has two jobs while doing the interview with a respondent. The first is to hold the line of inquiry related to the research and the case, and secondly to ask your actual questions in a conversational way that also serves the needs of your line of inquiry. The most commonly interviews for a case study are of an open-ended nature (Yin, 2003), beside that focus interviews and formal surveys are also well used. Gripsrud, Olsson & Silkset (2004) explains that individual in-depth interviews are done when the respondent's experiences and opinions are of interests. An issue to consider of a more technical part are transcribing and translating (Marshall & Rossman, 2006). After the interview for the research in this thesis was done, the whole interview where transcribed down in details, before the summary of the transcribed document was written in another language. There are three primary issues that should be kept in mind while translating according to Marshall & Rossman (2006), which are, if a text have been translated from one language to another language, which language should direct quotes be written in. Second can translated word be used as a direct quote and how accurate are the translating are in light to capture the subtle meaning of the original language.

The three interviews where done in a structured way in mid-April through phone with recording. Targets for the interviews where purchasing managers at NorSea AS in Stavanger and at least one respondent from the biggest supplier. In which orders the different interviews are done are regarded what time the different respondents was available for doing the interviews. The template for the interviews was carefully considered and reviewed before the interview took place. The respondents received the template through e-mail beside information regarded the research area and topic for the questions they will be questioned about couple of days before the interview took place. After the interview where done the recording where use to transcribing the entire dialog, before an English summary where written. These English summaries are included in the appendix. The next sessions will explain more about the topics for the interviews.

3.2.1.1 First Interview

The first interview was done with the biggest supplier for NorSea AS in Stavanger and this supplier is a subsidiary of NorSea Group AS. The person interviewed was the General Manager for Maritime Logistics Services AS and the interview was divided into four parts:

- Services provided of Maritime Logistic Services AS
- The market and organization form for Maritime Logistic Services AS
- The customers of Maritime Logistic Services AS
- The suppliers of Maritime Logistic Services AS

In appendix 7.1, the summary of each group of topic can be read. The purpose of this interview was to get insight into this supplier organization, and the supplier relation to NorSea AS and if there were several other customers they provided with services.

3.2.1.2 Second and Third Interview

The second and third interview where done with NorSea AS in Stavanger. NorSea AS consists of two bases located at different sites in the region around Stavanger, and the first respondent where Supply Chain Manager at Tananger and the second respondent was Commercial Manager at Dusavik base. The interview where done at different days, and independent from each other, which means that answers from one respondent would not affect answers from the other. The respondents were prepared due to received template for the interview and a letter that described the research area. The quantitative analyze which the interviews were based on will be further explained in the next section about secondary data. The interview was divided into four parts:

- Description of product category: (Vessel services and helicopter services)
- Choice of supplier (This section addresses the two bases for NorSea Group in Stavanger with the bases Dusavik and Tananger, and their choice of suppliers)
- Relationship between NorSea AS in Stavanger and their suppliers
- Choice of suppliers and the customers of NorSea AS

There were two product groups that were taken into account in the interview part, based on the findings from the quantitative survey, vessel services that were purchased from an own subsidiary and helicopter services that were purchased from an external supplier.

A summary of these two interviews are available in the appendix 7.2, and 7.3.

3.2.2 Secondary Data

Secondary data can be used in both explorative and descriptive design, and are data that have been earlier gathered for another purpose. But this data are quite often cheaper and quicker to gather, than primary data (*Gripsrud, Olsson & Silkoset, 2004*). Secondary data can be divided into two groups, data that has the origin from the case company, or data from sources that are located outside the organization. Further Gripsrud, Olsson & Silkoset

(2004) explain that if there is any uncertainty about the quality on the data, it should be rejected.

The first methodological part of this thesis was based on costs due to purchase of products and services from suppliers, categorized after purchase for own use and purchase for further sale. This analyze was done in two different ways, first was the analysis done in favor of the product groups, and then secondly in favor of suppliers. Based on these two analysis where there possible through a activity based cost analysis (ABC-analysis) to detect those product groups and those suppliers that played the most important role in purchase for own use and further sale. The data material where gathered from NorSea AS in Stavanger, and apply for both bases Dusavik and Tanager which have a shared accounting system, and the number where total purchase 2012. The numbers for total purchase were received in a excel file, and had the origin from NorSea AS accounting system. After cleaning the dataset, removed missing values or errors the tests was done independently of each other. Gripsrud, Olsson & Silkoset (2004) define missing values as un-logical values, and that there are several ways to handle such values. They can be removed from the set of data, replaced with a neutral value, handle it as unknown or replace it with a value that follows the pattern for these observations. The findings from the two different analyses will be presented later in the analytical part of this thesis.

Other sources of secondary data provided are annual reports received form the NorSea Group organization, beside homepages and online sources for business data. In the appendix 7,1 and 7,2 are both organizational map downloaded from NorSea Group webpages included beside map over the purchasing process at NorSea AS in Stavanger received from supply Chain Manager attached. For the theoretical part are books related to purchasing been used beside scientific papers found on online sources such as ProQuest, Science Direct, and Google Scholar.

3.3 Quality of Research

According to Ellram (1996) is good research requiring external validity, reliability, construct validity and internal validity whether it is quantitative or qualitative research that are done. In this last subsection these four topics will be shortly discussed due to the quality of the case research.

3.3.1 External Validity

This topic is an issue that must be addressed while designing the research model. External validity is reflecting in which degree the studied phenomena and results that have been found are generalizing. Ellram (1996) explain that lack of generalizability is some of the elements that case studies have been criticized for. The research for this master thesis is taken two of NorSea Group ten supply bases into account. For the bases in the same organization can there be an opportunity to generalize out from the results in an analysis if there are some significant findings that can be transparent for several bases, in addition to generalizability for this sector will remain a question, due to further research and findings needs a positive correlation from several studies to stay valid.

3.3.2 Reliability

The next topic in research design quality is reliability, which is related to the reliability to find or get the same results of the research if experiment was done again in the same manner. Ellram (1996) explain that there are two keys to reliability which are use of a case study protocol or the development of a case study database. This master thesis is using numbers and information from to bases in Stavanger, if the same research was done on two other bases, there would probably be some different findings but interesting to see in which degree similarities would be explored.

3.3.3 Construct Validity

Construct validity are regarding the establishment of proper quality on the operational measures for the concept that has been studies. It is a part of the data collection, and is closely linked to reliability. Ellram (1996) presents three elements that are connected to the establishment of construct validity. These are to use multiple data sources, to establish and maintain a chain of evidence and last get a draft review by key informants. Yin (2003) also reflects over these three principles related to data collection. To ensure construct validity in this thesis there has been used several sources of evidence. By analyzing data, conduct

several interviews, and create a theoretical framework the analytical part of the thesis will gain an advantage in the degree of having several sources for statements and predictions.

3.3.4 Internal Validity

The last issue regarded research design quality is due to internal validity, and is related to making of proper inferences from the data, besides considering alternative explanations, and use of convergent data and tactics that are related (*Ellram, 1996*). This issue is more irrelevant for this master thesis that is more exploratory and descriptive.

4.0 Discussion

This chapter contains the analytical part of this master thesis. Through this part will the three research questions be discussed in light of the already presented theories related to the topic about purchasing, beside the use of the findings from the quantitative and qualitative research. The first subsection is assigned NorSea Group which is the case company for this research, and there will be given a short introduction to the organization of this company and the basis for this research. The three next subsections are structured after the sequence of the research questions.

4.1 *The case study: NorSea Group AS*

NorSea Group AS is a Norwegian private company established in 1965, who owns several supplier bases in Norway. Through acquisition of different bases have NorSea Group AS expand and grown to a big organization during the Norwegian oil and gas history. The bases that are associated with NorSea Group AS provide different services that adapts to the requirement for the offshore industry, and operate from nine bases located geographically along the Norwegian west coast, from Stavanger in the south and further north to Kirkenes (*NorSea Group, 2013a*). Each facility within NorSea Group AS is a separate business unit that is supplying services to different tenants and customers. Customers with a contract with NorSea Group AS have access to all the different supplier bases connected to the organization. The concept for each of their nine supplier bases is to make it into industrial cluster, by being established closely related to a mix of different service suppliers, and through this achieving the opportunity to serve their customers within a broad range of different services as a third part logistic provider (*NorSea Group, 2013b*). Appendix 7,4 views the corporate structure for NorSea Group AS, and also the location for each of the nine bases, in addition to the degree of ownership in each of the bases, an addition is that NorSea AS Stavanger consists of two bases, Dusavik and Tananger. Through cooperation with independent companies at their supplier bases they strive to constitute a “one stop supply service center” to their customers (*NorSea Group, 2013a*). NorSea Group AS vision is:

NorSea Group shall continue to be the leading and preferred supplier of Integrated Logistics Solutions (ILS), both to the Norwegian offshore – and other industries
(*NorSea, Group 2011, 4*)

NorSea Group AS want to achieve this by continuously develop the personally resources and work in accordance with their “0 philosophy”, which comprises no damages or injuries, no work related illness and no damage to the environment.

4.1.1 The research

The research are based on data materials achieved from NorSea AS in Stavanger, with the two bases Dusavik and Tananger, and the conducted interviews are among other done with employees associated with these two bases. The origin for this research is based on an earlier assignment done for Vestbase in Kristiansund, a fully owned supplier base in NorSea Group. The task for that assignment was how to suggest a new setup for an improved purchasing system for Vestbase (*Taknæs, 2012*). From this research it began to be interesting to look at the entire organization as a whole. Due to limitations the two bases in Stavanger were selected as scope for looking at the entire organization. The further research for this thesis is then done on the assumption that Dusavik and Tananger constitute the scope for the study of the entire organization.

NorSea AS in Stavanger has the headquarters in Tananger and the operational activities at the two bases Dusavik and Tananger. These two bases have a one common accounting system, and are fully owned by NorSea Group AS. (*NorSea AS, 2011*). Through establishment, beside renewing and extending of framework agreements with several companies that operate in the North Sea have NorSea AS predicted an increase in the activities at both bases, from the operating companies and other customers (*NorSea AS, 2011*).

To simplify the further work and make the analysis more understandable, there will be used abbreviations to make the text easier to read through the rest of this thesis.

NorSea Group AS which are the main organization will get the abbreviation NSG, while NorSea AS in Stavanger will get the abbreviation NS. When NS is used in the text, it includes both the Dusavik and Tananger base.

4.2 Research question 1

Are there any reasons to assume that tailor-made products and services for customers are purchased from own subsidiaries, and that standardized products and services are purchased from external suppliers?

The investigation for this research question was done sequentially in a quantitative way based on data materials of costs. Through data files in excel where total purchasing costs for own use, and for further sale for NS 2012 gathered. The given variables were product categories, suppliers, accounting number, and the total costs excluded tax and fees. The total amount in purchasing costs for further sale 2012 for NS is approximately 553, 4 million NOK, and total cost in purchasing for own use are close to 53,6 million NOK. This means that NS alone, within the NSG organization are doing purchasing activities for around 607 million NOK each year, provided that the purchasing activities in 2012 are a normal year compared to the average.

The two quantitative research methods will now be presented. The purpose of the first research was to find the biggest suppliers to NS, and categorize them after purchase of further sale or own use, beside investigate if the supplier is a subsidiary within NSG organization or an external supplier. In the second research was only purchase for further sale investigated, and the different product groups were analyzed in sense of the purchase are is from a subsidiary or from an external supplier.

4.2.1 The first analysis

The first section with quantitative research included purchasing costs for products and services for further sale, and own use. Through analysis of each supplier, and rank each of them after the amount in costs of purchase, this matrix can be illustrated to show the summary of the most important findings.

	Internal use NS:		For further sale:		Total:
Summary:	NOK	%	NOK	%	
Supplier within NSG:	645 710,32	0,19	341 788 468,50	99,81	342 434 178,82
External supplier:	53 020 162,39	20,03	211 641 414,75	79,97	264 661 577,14
Total:	53 665 872,71		553 429 883,25		

Table 1: Matrix that summarizes the results from the first analysis

The table explains that mainly 99% of what are purchased from a supplier within NSG organization is sold to the customers of NS, and close to 80% of what are purchased from external suppliers is sold further to the customers of NS. It's important to consider that of total annual cost of purchase 2012, 607 million NOK, is only 8, 8% (53 million NOK) purchase for own use, but on the other hand. Almost all products and services purchased for own use is purchased from external suppliers. From this it began to be interesting to see if there were some few big suppliers that to some extent constitutes for the largest part of the supply.

Purchase from suppliers within NSG:

- Purchase for own use are Maritime Waste Management AS supply 78% of the total expenditure on 645 710,32 NOK
- Purchase for further sale are Maritime Logistic Services AS supplying 79%, and Maritime Waste Management AS supplying 16% of the total expenditure on 341 million NOK

Purchase from external suppliers:

- Electricity supply from Lyse AS account for 32% of the total expenditure of 53 million NOK in purchase from external suppliers for own use.
- Purchase for further sale from external suppliers is a total cost at 211 million NOK. Statoil Fuel & Retail Norge AS, account for 33% and CHC helicopter Service AS 31%.

After this analysis it began to be interesting to see if there was similar or different findings to find if the research was done different by take product groups into consideration instead of supplier companies. This resulted in the second analyze.

4.2.2 The second analysis

The biggest change in the second analyze is that only purchase for further sale, from suppliers within NSG and external suppliers are studied. Firstly the eight biggest product groups were selected for this research. The total purchasing cost is 10 million NOK or more for each of these groups, and totally are these eight groups explaining 542 million NOK, or 97, 65% of the total purchase for further sale at 555 million NOK. Appendix 7.6 illustrates graphically the distribution of cost in these eight groups, and also the amount of what are purchased from suppliers within NSG and external suppliers. In addition, to get a better overview over the different companies within each product group, it was reasonable to drop the smallest suppliers. Dependent of number of suppliers, and the purchasing cost

within each of the product group, were 95 to 99% of the costs within each group included in the research. These means that some few suppliers, that deliver few products and services in light of the total cost of purchase, are excluded in analyze two. The next figure show graphically the distribution in percentage of total purchasing cost for further sale for the eight biggest product groups.

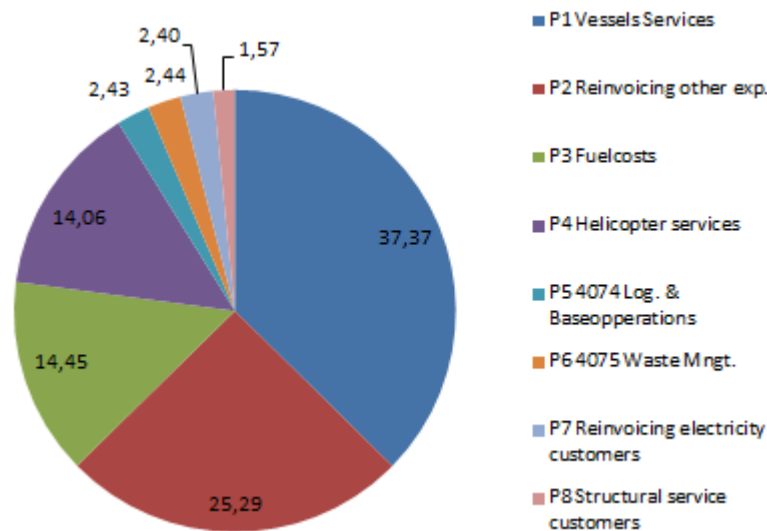


Figure 12: The eight biggest product groups, distributed after percentage share of cost

From the figure we can clearly see that vessels services are the group with highest purchase for further sale, after that follows invoicing customer for other expenses. The second group consists of a huge number of different suppliers, but there are a limited number of suppliers are delivering products and services in a large scale. Vessels services, fuel costs and waste management are totally accounting for 54, 26% of the total volume purchased for further sale, of these eight product groups that are studied. This means that more than the half of products and services for further sale are purchased internally while considering these eight groups.

The next step is to find the distribution of suppliers within each of these eight product groups, and sort out if the suppliers were within the NSG organization, or external suppliers. The next figure show in which degree the different groups of products and services are purchased from suppliers within NSG and external suppliers. The two groups, re invoicing other expenses and logistic and base operations are divided in the light that they are served with both NSG suppliers and external suppliers. The three groups vessels services, fuel cost and waste management are almost served from suppliers within the

NSG organization, while helicopter services, re invoicing electricity for customers and structural service customers are totally served from external suppliers.

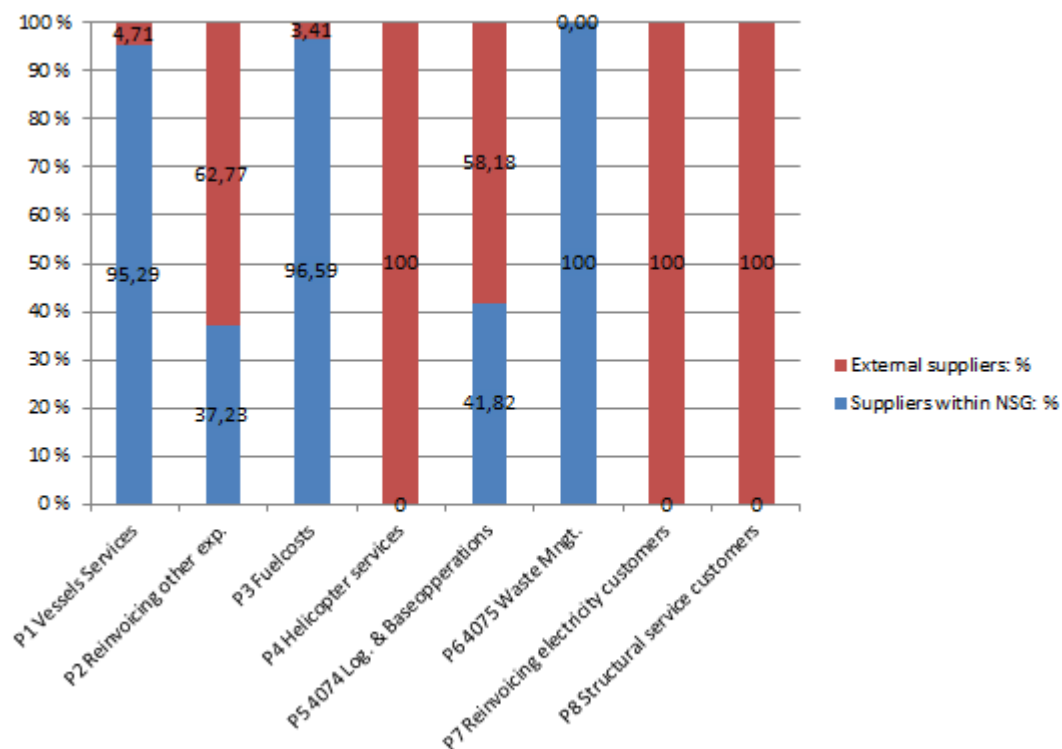


Figure 13: The eight biggest product groups, percentage distribution of NSG suppliers or external suppliers

From this graphical view will it be interesting to see if a special pattern will give any identification that tailor-made products and services for further sale are purchased from a company within NSG, and standardized products and services are purchased from external suppliers.

Factors that favor that tailor-made products and service are purchased from suppliers within NSG:

- For vessels services are Maritime Logistic Services AS counting for 95, 29% of the supply, which company are a 100% owned company of NSG.
- Maritime Waste Management AS is a company that is fully owned by NSG, and stand for the entire supply for the product group waste management.

Factors that argue against that tailor-made products and services are purchased from suppliers within NSG:

- Fuel can probably not be considered as a specialized product or service, but mainly are fuel for further sale purchased from their own supplier Maritime Logistic Services AS.

Based on these two analyses and its results, the further research to answer the prediction that tailor-made products and services is purchased from a supplier within NSG and standardized products and services are purchased from external suppliers is based on the research of two product groups. The two groups conducted are vessels services and helicopter services.

Vessels services are counting 37, 37% of the total purchase of the eight groups of products and services for further sale that are investigated. From the quantitative research are NSG own supplier organization Maritime Logistic Services AS serving 95, 29% of the deliveries. This means that for a total purchase of vessels services at 206, 5 million NOK, is Maritime Logistic Services AS serving for around 197 million NOK.

The helicopter services are the fourth biggest group of the eight groups investigated and are the biggest groups of the three groups that are totally purchased from external suppliers. Totally is the purchase of helicopter services for further sales accounting for 14% of the total cost for these eight product groups. The group helicopter services have five suppliers where CHC Helikopter Services AS and Statoil Petroleum AS count for respectively 84, 69% and 13, 38% of the costs.

With a starting point in the analysis, and with the two different product groups that were selected, to get any predictions for the first research question a qualitative research was conduct to support the findings from the quantitative research.

4.2.3 Interviews

There were conducted three interviews, first with general manager at Martime Logistic Services AS, and then supply chain manager at Tananger base and the last interview with commercial manager at Dusavik base. In the appendix 7,1 7,2 and 7,3 is summaries translated from Norwegian, from each of the three interviews divided after how the interviews were structured.

Further on in the analysis will Maritime Logistic Services AS be named MLS, to make it easier and more understandable to read through the thesis. MLS is fully owned my NSG and have their main office in Dusavik. They business is rental of vessels on both fixed contracts and spot to their different clients. In 2011 rented MLS seven vessels from

different partners, beside around hundred vessels through the spot market, and they have several framework agreements with operators at the Norwegian Continental Shelf (*Maritime Logistic Services AS, 2011*). Contracts with the most important customers and partners will also apply for the next several years, but MLS (*2011*) can report that the sport market has been highly variable last year.

The purpose of the first conducted interview with MLS was to get an insight of which services they provide, beside the market they operate in and how they are organized. Beside which customer they serve, and who their suppliers are.

For the second and third interview was the purpose to first get description of each of the two product categories chosen for this research from the two respondents. Then secondly sort out how NS choose their suppliers, before the relationship between NS and their suppliers is viewed attention. The fourth and last part of the interview is regarded NS customers, and NS choice of suppliers.

The two next sections are dedicated each of the two product groups and research question one regarded tailor-made or standardized products and services.

4.2.3.1 Vessels services

The next figure graphically explains how the purchase of the product group vessels services is organized, based on the information gathered from the interviews. An important remark is that one of the respondents corrected some of the findings in the quantitative research. 197 million NOK is the total purchase of vessels services for all the bases in NSG, from MLS, and not only for NS. 206, 5 million NOK in purchase of vessels services is wrong regarded that 9, 5 million NOK in purchase from Statoil Petroleum AS are recorded at vessels services, and probably should have been recorded at fuel cost.

This means that the vessel services are fully purchased for 197 million NOK from MLS.

NSG has delegated the coordination responsibility for the provided vessels services from MLS to NS on behalf of all their nine supply bases. Figure 14 illustrates the coordination flow between customers and suppliers. The logistic organization of NS (appendix 7, 5) could also have been a picture on how NSG could be organized. NS is a division that administrates and coordinates the logistic of vessels services on behalf of the customers at

the different bases. Additional information to the model is that NS is represented with two boxes, one box to indicate their two supply bases and another box to indicate the NS administration center for vessels services for all the bases. The competitive advantage of MLS is that they do it better in hiring the right vessels for the right project, compared to other operators such as Statoil and BP according to the second interview. MLS operate as an offshore division for their customers, especially for many of their small sized customers. For NSG is MLS operating as a consortia. The customer market is the operators at the Norwegian Continental Shelf, and these operators are controlling the market in the degree of their activity. The most common services where MLS is hiring vessels for their customers is regarded a “rig move”, but on the other hand has MLS contracts with shipping companies that last for two-three years for full offshore supply for a rig.

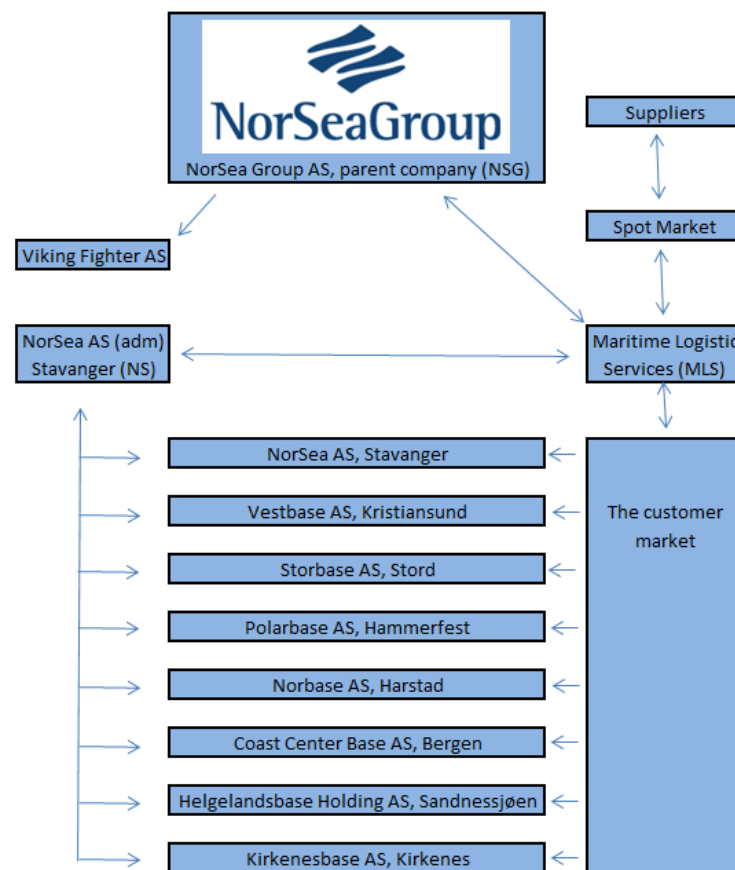


Figure 14: The coordination of the product group vessel services

There is a fairly distribution of customers using MLS directly, and customers that goes through the bases operating in the NSG organization, but there has been a change over the last years where more operators go through NSG instead of hiring vessels directly from MLS.

NSG owns one supply vessel operated by Eiedesvik offshore that MLS rent out, the majority of the service vessels are hired from the spot market. The spot market used are located in the area of Aberdeen and Stavanger, where available vessels for rental are located in this area including Bergen. This is a spot market where all Norwegian shipping companies are suppliers.

The illustration on how the purchasing of vessels services is done give indications that the purchase is lifted to a tactical level, where NS is taking care of the coordination of the service for the customers requiring this service on the bases, on behalf of the bases in the NSG organization. It is reasonable to look at the purchase of vessels services as one group that has been divisionalised and where coordination has been devolved. This in light of that NS has got the responsibility to coordinate the vessels service on behalf of the supply bases within the NSG organization. A second thought is that NS may operate as cross-functional team for this product group, where NS together with MLS find a fully satisfactory vessel to rent for the customer that hiring services from NSG.

From the interviews it is clearly indicated that the vessels services MLS provides their customers are fully tailor-made for each specific contract agreed upon. In addition are vessels services seen as one of the core business areas provided of NS beside other services such as helicopter services, waste management, transport services, load carriers, container and fuel services. But there should also be highlighted that the services provided from MLS is standardized in the way that it has no special features or adaptations to each of the bases. In light of the value adding this purchasing structure gives NSG with the vessels services from MLS, who seems to be strategically important as a supplier, is there no other reasons to use other suppliers for vessels services. This with the supporting statement from the second interview conducted (translated) “it is better that a company in the same group earns money, than a competitor”. In light of Kraljic matrix and feedback from the respondents are there some indications that vessels services are a strategic item, with the sub-strategy maintain strategic partnership, such as NS do by having MLS as a consortium for vessels services. But on the other hand, even though the vessel services are the product group with highest volume in purchase for further sale, is it not the product group with the highest profit. The supply risk can also be interpreted to be low, since the supplier is a subsidiary in the NSG organization. It can therefore be reasonable to place the vessels services in the leverage strategy, and with the sub-strategy develop strategic partnerships.

4.2.3.2 Helicopter services

The second product group considered for further research is purchased from external suppliers. It is important to keep in mind that the results from the quantitative research are based at the two bases of NS. The biggest supplier serves services for a purchasing value of 64, 5 million NOK of a total supply of 76 million NOK. Due to feedback from the respondents on the quantitative research as mentioned earlier, should 10 million NOK of the total purchase be recorded on fuel cost, instead of helicopter services, this because it seems to be more realistic. This means that mainly one supplier is delivering all the services for this product category.

The demand for helicopter service has increased over the two last years, and the main reason is that one helicopter is rented of NS on behalf of one customer through a framework agreement. The helicopter services provided through NS and this helicopter are mainly used by this customer. One of the reasons according to the respondents is that operators normally buy these services on their own, and not through NSG. But if a rig consortia, were several actors are involved, participants that join in this rig consortia has to follow the agreements and contracts made earlier by this consortia.

The figure bellow illustrates the perceived purchasing structure for helicopter services. This is mainly based on the feedback from the interviews, beside secondary data. The provider of helicopter services to NS is not interviewed due to consideration of confidentiality for this thesis.

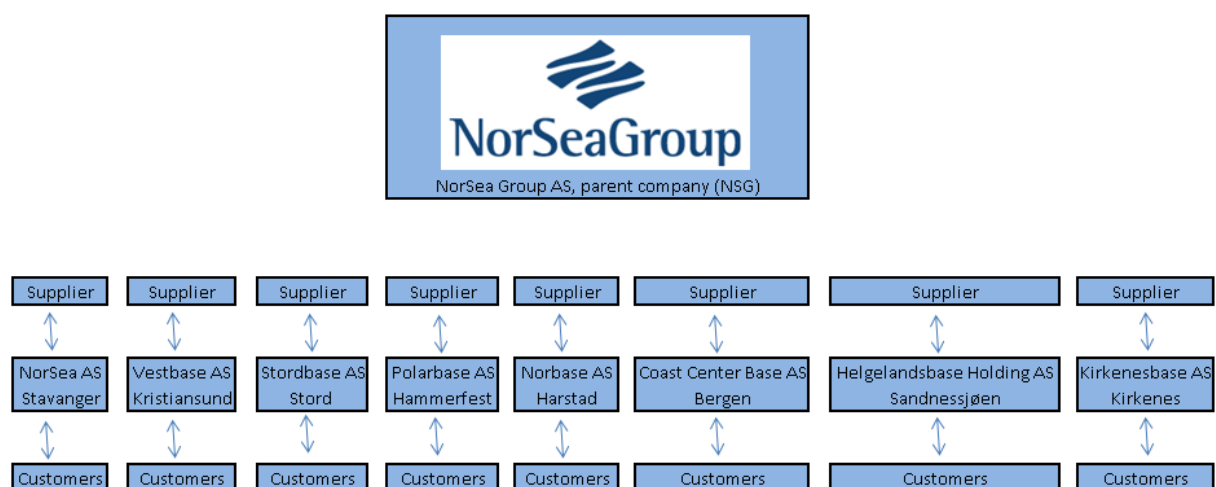


Figure 15: The coordination of the product group helicopter services

The purchasing structure for helicopter services seems to be very decentralized in the way that this purchase are only purchased on behalf of a framework agreement with one of NS suppliers, and seems to be done at an operational level. According to the respondents are there several suppliers available for this service in the open market. Where the vessels service is seen as a more as a working tool, are the helicopter services seen more as service for transport of the workers between mainland and platform, rigs or vessels.

Beside that the helicopter services is used for possible ad-hoc missions, or if an evacuation occur. From the quantitative method is the helicopter services understood as a more commodity product, with less adaption to different customers or missions. But for NS as a third part logistic provider is the helicopter services still seen as a part of their value chain, and an important service to provide for their customers, including that is seen to be value adding for NSG, and in that way strategically important. There is no coordination between the different bases due to helicopter services, other than the two bases connected to NS.

From the respondents view is the helicopter service seen to be more straightforward.

Due to strictly regulations according to health and safety for offshore transportation are normally customers of NS purchasing helicopter services directly from a helicopter service company. Helicopter service is seen as an intensive and expensive service where tender is used before agreeing upon a new contract. In light of the Kraljic matrix, is it difficult to give an exactly answer for which position the strategy for helicopter services are affected by. Especially since it is just one framework agreement related to one of NS customers that constitute the statistic. But from the qualitative research it is known that with several suppliers is probably the supply risk low and the profit impact is not that high. Which make is reasonable to place helicopter services as a non-critical item, On the other hand, if several more customers of NSG use the helicopter services there would probably raise the profit impact, and a leverage strategy with the sub-strategy exploit buying power would maybe fit for the organization.

The next table is briefly summarizing the characteristics of the two product groups based on the research for this thesis, and highlight the differences between them.

Vessel services	Helicopter services
Biggest product group for further sale * Purchased from own subsidiary	Fourth biggest group for further sale * Purchased from external supplier
Centralized * Tactical level * Divisionalised * Coordination devolved * Cross functional	Decentralized * Operational level * No coordination between the bases
Tailor-made for each contract agreed upon * Customized	Commodity product * Less adaptations
Strategic important supplier * Low / Medium supplier risk	Non-critical supplier * Low supplier risk

Table 2: Matrix that summarizes the characteristics of the two chosen product groups

The matrix indicates the differences in the two chosen product groups for this research, where the vessel services are purchased from an own subsidiary and the helicopter services are purchased from an external supplier. For NSG as a third part logistic provider is both groups seen as a part of their core business, but with a low profit impact due to the high turnover in purchasing costs.

4.3 Research question 2

Are there any specific factors which may be decisive for how certain products and services are purchased?

The purpose of the second research question is to investigate if there are any specific factors that may be decisive for how some certain products and services are purchased. After taking each of the two chosen products groups into consideration, there will be interesting to see if there are any similarities among the two groups.

From the qualitative research is it illuminated that the suppliers NS are using today are important due to high turnover, and medium / low risk, and a part of NS business and competence to control logistical processes. This part will shortly discuss each of the two product groups in light of the research question before a common part in the end of this chapter will sum up the findings.

4.3.1 Vessel services

For the vessel services served by NS are tenders not used, regarded the fully use of the subsidiary MLS, and the vessels that MLS rent are based on it features and not because of the operator. The business of the subsidiary MLS is to find the right vessel to a satisfying price for the customers of NSG. Factors that are important in the selection of shipping companies are due to experience and audit of the company, beside inspections of the vessels that the shipping company operates. In the way MLS operate saves probably ship owners and shipping companies a lot of work, and in that way also costs regarded the work they do for their customers, or the customers through NSG. So far the customers of NSG do not have any other requirements related to the choice of supplier, is there no other reason to choose another supplier than MLS. NS are also making requirements to the vessels that are rented in light of certifications etc. before it should serve the customers of NSG, beside the operational requirements that are given from the customers such as which kind of facilities and services are needed on the vessels.

For the product group vessel services are there a great communication between customers and suppliers, and the change of data regarded information and cost are visible to all it may concern. The vessel market is regulated with contracts, in addition to an occasional collection of vessels due to a limited time frame in the spot market. This selection and contracting process are some of the parts MLS do for NS. Frequently are the contracts regulated which explains that a supplier cannot be changed relatively often, or due to no reason. A tender has to be made and announced in the market if a new supplier is needed of MLS, and relatively too long term contracts with customers is suppliers specification agreed upon in each of the contracts with the customers.

How the cooperation with MLS is structured, and the way NS are coordinating the vessel services for the several supply bases, is the transactions cost reduced to a minimum and the control over the entire process of providing vessel services for customers of NSG reinforced. The adaption cost in light of a vessels call at a supply base is seen at low, but the cost related to negotiation and contracting with several suppliers such as ship owners is seen to be higher. By using MLS as a consortium for doing the contracting, renting vessels, and have a hands-on in the spot market, beside letting NS be the coordinating division on behalf of all the supply bases for the product group vessel services are these divisions specialized for this product group. For NSG as a whole is this gaining

competitive advantage by specialize these two divisions. This gives better control in the purchasing for one group of service, beside the opportunity for large scale effects by letting MLS purchase these services for all the bases.

4.3.2 Helicopter services

The helicopter services are seen as a more ongoing business, where the suppliers is chosen on the basis of terms for price, conditions, access to helicopter, core records beside health and safety. This is due to the strictly regulation that exist for helicopter services offshore and transportation of personnel offshore.

For the helicopter services are tenders and long contracts essential for the choice of suppliers. The helicopter market are described as smaller and more straight forward than the vessel services, but on the other hand, from the interviews seems the market for vessel services to be more known among the operating companies that are customers of NS. There are several factors that can have an impact on this, such as the vessel market is much bigger, with several more actors in the market.

What differ with the market for the helicopter services compared to the market for vessel services are that there are no change of data related to costs.

In case of higher specific investments for a specific product or service is an organization striving for better control of the relationship. The helicopter services are seen as a more commodity product with less adaptations, which means that costs related to specific adjustments seems to be lower for this product group, beside lower costs related to change of suppliers.

4.3.3 Common elements

The core business of NSG is to be a third part logistic provider, and the services they serve their customer with are best tailored for a rig consortium. The two product groups that are chosen for this research work quite similar, and are obtained from markets for commodity products according to the respondents. There exist cooperation between the suppliers of NS, and the customer for NS for both product groups, and it is the duration of the contracts that have an impact on the relationship between customer and supplier in light of short or long duration on the contracts. NSG are seen as a strategically important customer for their subsidiary MLS, but not for their supplier of helicopter services. This is also reflected in the cooperation that exists between NS and the suppliers, while the cooperation seems to be very good with MLS, is it medium good with the supplier for helicopter services.

Regarding planning of capacity for purchasing is there no cooperation with the suppliers for these two product groups.

The customers of NSG preferences are mainly based on health and safety besides core records, technical capacity and competence for both the two chosen product groups.

For NS is it also important when a product or services is needed that it has the quality to satisfy the given requirements, not only for the end products, but also for the entire process for serving the product or service.

4.4 Research question 3

With a starting point in existing purchasing models for a couple of the most traded products and services, is there any basis for making a new purchasing model for the most traded products and services that have a demand at the different offshore supply bases?

In chapter 4.2 are the product group vessel services and helicopter services graphically illustrated, and from the investigation of research question number one are the purchasing structure seemed to differ for these two product groups, vessel services purchased from the subsidiary MLS compared to the helicopter services purchased from an external supplier.

With a basis in the nine offshore supply bases associated with NSG are the main task of this sub-chapter to design a suggested purchasing model for those products or services that are demanded either in stable or fluctuating way for several of the supply bases.

The proposed model is built on elements that have been discovered as beneficial through the research and case study for this master, in addition will the purchasing model be presented with a theoretical reasoning.

The main idea behind the proposed purchasing model is to create an own consortium which has the responsibility for the entire purchasing process and coordination for one group of products or services on behalf of all the supply bases. It is important to remark that this consortium is best fitted for products or services that are highly traded at several of the bases.

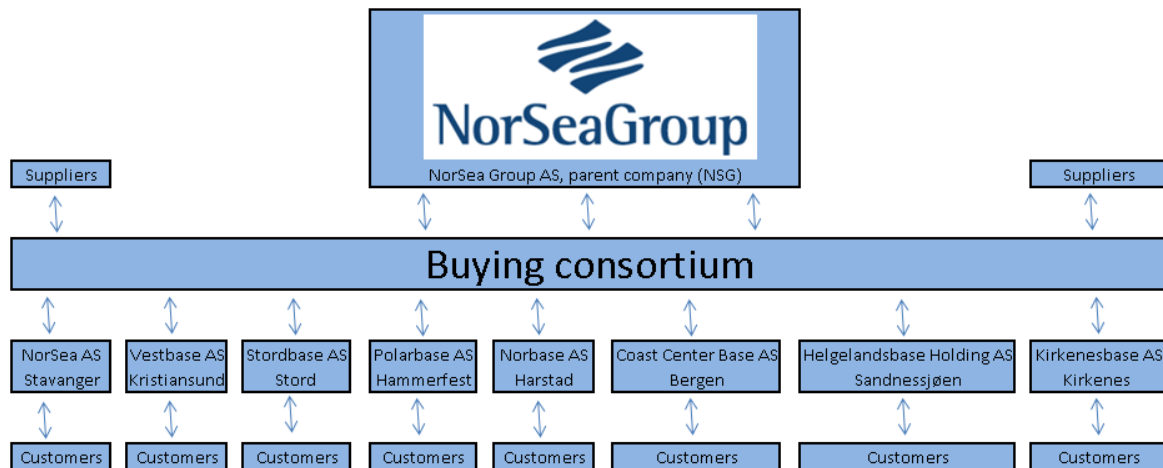


Figure 16: A new purchasing model for the most traded services and products

By establish a consortium to organize and coordinate the purchasing, are the purchasing lifted to a tactical level in the organization, but still are the hierarchical level in the organization tried to be hold to a minimum by divisionalise the purchase of one product group or service into a hybrid function. With hybrid it is meant that it is either centralized or decentralized, but gain advantage through a lead buyer ship organization.

Through this kind of organizing have the suppliers for services or products within one group, a single contact point on behalf of the nine bases and the customers related to these bases. By administrate the biggest groups of products and services purchased into several consortiums will NSG as the parent company have grouped the suppliers based on products and services, and in that way can achieve better bargaining power for suppliers in light of duration of contracts and price on demanded products or services.

For NSG as the parent company can establishments of buying consortiums for different products or services be a strategically step in light of the benefits and competitive advantage that can be gained by having one apartment to source for, buy and coordinate products and services for all the nine supplier bases.

To organize the purchasing into a consortium will have an effect in the transaction costs that occur in the purchasing process between the buying organization and the supplying company. For NSG as a whole will a buying consortium that operate on behalf of all the bases reduce the cost related each of the bases, due to cost such as bargaining, control and monitoring and maladaptation cost beside performance verification cost.

Compared to the model for vessel services which are using MLS as a buying consortium, is the suggested purchasing model for a single group of product or services for NSG very similar. What differ is that the buying consortium has got a bigger responsibility by also do the coordination activities. The buying consortium is fully owned by NSG and is the single point of contact between each of the suppliers and each of the bases in light of a product or a service.

5.0 Conclusion

This chapter will present the conclusion for this research in light of each research question, in addition will the last sub-section constitute of limitations to this research and topics for further research.

5.1 Conclusion

This study has attempted to provide insight into the organization of purchasing in offshore supply bases with a real life case study of NSG. With a starting point in two of the bases in the NSG organization, and their biggest suppliers have this study analyzed the purchasing that are done by NSG from subsidiaries and external suppliers and compared this to relevant theories. Through this research are products and services, and how these are purchased, analyzed and compared, in addition to identify a basis for a shared purchasing model.

Research question 1: Are there any reasons to assume that tailor-made products and services for customers are purchased from own subsidiaries, and that standardized products and services are purchased from external suppliers?

Taking the two examined product groups, vessel services and helicopter services into consideration, according to the research, there is a possibility to predict a difference in the two products examined, both in the way they are purchased and operated.

The purchase of vessel services seems to be divisionalised at a tactical level where NS has got the responsibility for the coordination and work as a cross functional team, and MSL operate as a buying consortia for hiring the vessels.

The strategy for the two product groups investigated differs from each other in light of the position in the Kraljic matrix. Vessel services seems to be placed as a strategic item with the sub-strategy maintain strategic partnership or move in the direction of leverage strategy with the sub-strategy develop a strategic partnership. The helicopter service are described as a non-critical item, but still described as strategically important and seems to fit the leverage strategy with the sub-strategy develop a strategic partnership.

The purchases of helicopter services, based on what are captured in the research is decentralized to each of the bases and are from the qualitative research described as a commodity product.

There is a possibility to predict that the vessel services, purchased from their own subsidiary are to a larger degree tailor-made for each customer, compared to the helicopter services purchased from an external supplier. There are some indications that products and services purchased from subsidiaries within the organization are in a larger degree tailor-made compared to products and services purchased from external suppliers.

Research question 2: Are there any specific factors which may be decisive for how certain products and services are purchased?

Through the research were several mutual findings discovered that the respondents mentioned as important factors when doing the purchasing of the investigated products and services.

For the vessel services were mainly the features of the vessel emphasized, and their experience with the suppliers beside audit and inspection of the vessels. The accurate operator of a specific vessel was more irrelevant. The use of a buying consortium for acquiring vessel services was indicated to reduce the work for shipping companies when renting out vessels, and in that way reduces costs.

Terms for price, the condition of the helicopter and its services were emphasized for the helicopter services as important factors beside the access to the helicopter. This service is operated in a manner with tenders and long contracts.

These two groups of product are quite similar, and are obtained from markets for commodity products. Mutual findings are requirements for health and safety, technical capacity and competence beside core records. The duration of a contract have an impact on how the relationship between customer and supplier develop. For NSG is the core business to be a third part logistic provider, with services stated as best tailored for a rig consortium. Specific factors in light of purchase and supplier are the safeguarding to achieve satisfying quality according to the given requirements for the end product, but also for the entire process to serve the product or service.

Research question 3: With a starting point in existing purchasing models for a couple of the most traded products and services, is there any basis for making a new purchasing model for the most traded products and services that have a demand at the different offshore supply bases?

The structure for vessel services purchased from the subsidiary MLS differ from the purchasing structure for helicopter services. The proposed model in chapter 4.4 are built on relevant theoretical models, beside findings that have been seen as important for the organization of purchasing in offshore supply bases detected through the case study for this thesis.

The proposed model is best suited to groups of products and services that are highly traded for several of the offshore supply bases within the organization, even if the demand from the customers at the bases is stable or fluctuating.

Based on the research for this thesis and the perception on how the purchasing of vessel services is organized, the models proposed in chapter 4.2 and 4.4 seem to be very similar. The biggest difference is that the consortium model in chapter 4.4 should both organize and coordinate the purchasing as one single point of contact, both for the offshore supply bases and for the suppliers. For NSG as a third part logistic provider, there are opportunities that a buying consortium will gain competitive advantages by among other reducing costs through being one single hub for suppliers and bases within NSG. This hub will also have the control and coordination of purchasing for one group of products and services for the entire organization.

5.2 Limitations and further research

The purpose of this thesis is through a case research to figure out decisive factors for how and why purchasing are organized as it is in an organization consisting of several divisions, in addition to suggest a purchasing model for groups of products or services build on findings in this thesis.

This research are based on products and services purchased for own use, and further sale. In cases of purchase for further sale is the supply bases buy, coordinate and forwarding products and services to their customers, before sending a total invoice. In light of this is

the organization working as an invoice hub, where different prices due to products and services purchased for further sale are giving different amounts in purchasing costs, an reasonable assumptions for why some product and service groups account for more than others. Through the research are some of the biggest suppliers, beside some of the biggest groups of products and services purchased for further sale and own use been taken into consideration, it is possible to assume that other products and services also can be reasonable to study. Due to the consideration of confidentiality are the qualitative methods restricted to the focal company and accompanying subsidiaries.

In the manner this thesis has been structured and how the quantitative and qualitative methods have been used are the value adding that arise at the supply bases related to operations done by the workforce been given less attention, at another hand is this an interesting area for further research in light of value creation that happens at the supply bases.

Based on the suggested purchasing model for most traded products and services for further sale is there some relevant topics that can be taken into consideration for further research such as markets and standardizations of markets. If a purchasing process of a product or a service is getting more standardized and easier to achieve, it can cause more volatility in the market, and a higher frequency of changes in the market price. From this it can be interesting to make a research on which impact this have for the duration of contracts, how products and services are getting obtained and the development of the relationship between byer and customer.

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7.0 Appendix

7.1 *Interview with Maritime Logistic Services AS (MLS)*

Date, execution: April 17th 2013, telephone interview with recording

Interview object: General Manager, Maritime Logistic Services AS, Dusavik

Relevant responses gathered through the interview:

Part 1, Services provided of Maritime Logistic Services AS (MLS):

- The services that MLS provides are 100 % tailor made for each customer and each contract with their customers.

Part 2, the market and organization form for Maritime Logistic Services AS (MLS):

- MLS are organized with four employees that handle all kind of tasks for their customers, in light of hiring and lease out vessels. Be the customers' advisor on which kind of vessel to hire related to the customers specification.
- The employees at MLS operate as the offshore division for the customer, especially for many of the small sized customer of MLS.
- MLS use all kind of ship owners to serve their customers, besides having contracts and framework agreements on subcontractors if the demand is too high compared to what MLS can offer of maritime services.
- It is the operators on the Norwegian Continental Shelf that control the market; these operators are the customers of MLS.
- There are a fairly distribution of customers using MLS that go through NSG, and other operators that are directly using MLS services. There has been a change the last years, where more operators now go through NorSea and the bases operated by NorSea.
- MLS rent all their vessels. NSG owns one vessel that MLS rent, if this vessel is booked by another project, MSL make a specification of the customers requirement and negotiate with suppliers in the market for a contract that fulfill their customers' expectations to a favorable price.

Part 3, the customers of Maritime Logistic Services AS (MLS):

- 99 % of MLS customers are offshore operators, and the rest is subsea companies of different size. A major part of the customers are smaller companies, which also include small divisions of greater international companies that have a smaller participation in offshore operations at the Norwegian Continental shelf. Benefits for international offshore companies that participate or operate in a “small scale” in the North Sea is that they don't have to establish own marine department to take part in oil and gas exploration.
- One of their big customers is “The Norske” and through a framework agreement with them, operators that cooperate on behalf of “The Norske” have to follow contract and agreements made by “The Norske” a solution that has increased the number of customers for MLS.
- The cash flow goes through MLS, if a customer need one service, this service is first rent of MLS, and then rent further to the customer of MLS.
- The most common project for customers served by MLS is a “rig move” where a platform should be moved to a new allocation for exploration of oil or gas. Such project takes normally around seven days, and needs four supply vessels to fulfill this kind of projects. But on the other hand has MLS contracts that also last for up to three years to serve rigs offshore for the scheduled time an operator has rent the rig. Rig supply has longer contract, but the most common contracts which require most work is rig move which normally takes around seven days.
- The majority of MLS customers have no preferences on which suppliers of MLS that are doing their services on behalf of MLS. The customers choose vessels based on its features, not the owner or operator. When a customer has delivered its specification of requirements, MLS are using a spot market based on the area around Stavanger and Aberdeen, and are then seeking for vessels that have the right features, are ready for new projects and has a satisfying price for their customer. All Norwegian operators are customers in this spot market, and the vessels are located in or around the area of Stavanger, Aberdeen or Bergen.
- MLS are serving customers related to the bases operated by NSG, besides serving other customers connected to other bases or projects located around with offshore projects. Highest number of contracts today is associated to Mongstad which are not a part of the bases belonging to NSG.

- Of the nine supplier bases operated by NSG along the Norwegian coastline is there no one that are differ significantly more than others in use of the services provided by MLS.
- There are also competitors of MLS connected to some of the bases operated by NorSea.

Part 4, the suppliers of Maritime Logistic Services AS (MLS):

- A large number of the biggest ship owners and shipping companies in Norway are supplying MLS. Some of them are well known ex Farstad, Olympic, Havilla and Eidesvik.
- Selection of suppliers is due to experience and audit of the company. Some of the most important factors also include inspections of vessels operated by the supplier.
- Since MLS has a turnover yearly (2012) on around 800 million NOK, they look at themselves as strategically important as customers in the light of their suppliers. This is due to the mission and service provided by MLS which probably save ship owners and shipping companies for a lot of work and in that way also cut costs.
- It is difficult to make a forecast on the demand from the customers, and in that way difficult to schedule the prediction for what is needed of vessels from the suppliers of MLS. MLS have schedules for time and date vessels should do projects, but changes often occur and the opportunity cost by wait one day is too high for the customer.
- The suppliers of MLS have full access to data related to cost and price setting on services sold to the final customers of MLS.
- A typically contract will be a rig move, with four vessels, a day to day schedule contracted for until 14 days.

7.2 First Interview with NorSea AS, Stavanger (NS)

Date, execution: April 18th 2013, telephone interview with recording

Interview object: Supply Chain Manager, NorSea AS Tananger

Relevant responses gathered through the interview:

Part 1, Description of product category: (Vessel services and helicopter services)

- NS is a own logistic department which is a part of a logistic center who has the responsibility for all supply regarded to a rig or on behalf of a rig consortia who consist of several operators where NS delivers marine services which are a part of NS core business. The marine services or NS core business area is supply vessels helicopter service, transport services, load carriers, and waste management included. Beside this is also container and fuel services a part of what they offer. The biggest service group in light of purchase for further sale is vessels services and helicopter service.
- The part of the core business that are related to the operations on the bases or services done on their bases is not detected through the analyze of data related to purchasing cost for further sale, or own use. This is because the value creation in light of their services is made on the bases by the employees.
- The subsidiary in NSG with highest turnover, but unfortunately not the highest margin is MLS. This is due to their business model. MLS is adept at finding the right vessel to an appropriate price for their customers.
- The services provided on the bases are NSG origin, and their service with supply vessels is a development from this and can be seen as highly tailored for the customers. Helicopter services has a degree of customization but normally are NS customers purchasing these services directly from a helicopter service company, due to strictly regulations according health and safety for offshore transportation. Helicopter service is an intensive and expensive service. (5 mill NOK in rental price each month, beside variable cost.
- During the last years has MLS been the only provider for supply vessels services for NS, mainly because it is a subsidiary. The volume has increased the last one to two years due to the contract with a rig consortia, where NS got the full marine service responsibility, and their supply dependency is not regulated by the

customer activity. Beside that a lot more customers of NS are using services from MLS. The helicopter services have an increased demand over the two last years, but this is due the one helicopter they rent and sold further to a customer through a framework agreement. The services operated from this helicopter are mainly used by this customer.

- Tender is not used for vessels services, due to the use of MLS which are a family company who operate in the sport market and obtain vessels directly from the shipbroker. For helicopter service is tender used to make a contract with a supplier.
- MLS is fully used since it is a family company, but suppliers for helicopter services is chosen based on terms for price, conditions, access to helicopter, core records beside health and safety.

Part 2, Choice of supplier (This section addresses the two bases for NorSea Group in Stavanger with the bases Dusavik and Tananger, and their choice of suppliers)

- NSG centrally have delegated the task to NS to distribute and further invoice all missions for vessels and maritime services related to the NSG based bases along the Norwegian coast. Which means that services purchased from MLS for further sales at a amount of 197 million are including all the supply bases.
- The service purchased from Statoil Petroleum are also including services allocated to all NorSea Group based bases along the Norwegian coast, this is because Statoil has the fuel capacity on the bases. The capacity purchased from Statoil Petroleum which are under helicopter service (10 200 000 NOK) in addition to the purchasing costs under vessels services (9 487 375 NOK) should be placed under fuel costs, this is due to 19 687 375 NOK sounds more accurate to the contract and the purchase NS has done from Statoil Petroleum. Statoil Petroleum is also serving Helifuel on NSG bases, but this operation has no impact on NSG.
- Related to vessels services are MLS chosen because it is a company within the same organization, and over time showed that they are better in hiring supply vessels then Statoil and BP. This statement is based on a report made by Statoil. Tender and long contracts are essential for choice of helicopter service. NS are not regulated due to law about public procurement, but operators that rent license

on the Norwegian continental shelf is regulated due to law about public procurement according to regulations of supply chain in the EU.

- For NSG is there an incentive that NS are using MLS because it is a company within the same family, this is because it is better that a company in the same group earns money, than a competitor.
- From NS point of view is the two product groups (vessel services and helicopter services) seen as given. It is understandable that these two groups are chosen, but there are not much that can be done with them. MLS is used since it is NSG own subsidiary, and the product group has good predictability, long contracts, day to day rate around 100-300 thousand NOK, high turnover and low margin. Helicopter service cost around 4-5 million each month based on contingency capacity on the helicopter, beside a running cost on crew and fuel, which are predictable since the helicopter is used 3-5 days each week. Logistically it would be more to achieve if containers, transport, or other logistically operations done by NSG had been taken into consideration in this master thesis. In the abstract for the thesis could this be emphasized strongly that this learning has been achieved during the process. This because both helicopter services and vessels services are seen as very standardized in light of the other services provided by NSG.
- NS serve as an invoice hub, in the way that they purchase services from a wide range of suppliers, forwards this services to their customers based on the customer needs and specifications and then send a total invoice to the customer. According to NS it is easy, but high amounts. But out from the numbers it is naturally to choose these two product groups for a master thesis
- It's the different projects operated by NS customers who controls the rig, and in that way which base that should be used. The organizational map for NS could have been used for the parent company NSG instead, NS is a division that works across NSG to administrate the logistic operations, but not exert the logistic. NS is coordinating the logistic for the customers, gather the cost picture and send the total invoice to the customer. It is the supply bases that are execute the operations, receive the cargo loading and loading on and off the vessels. But the vessels and helicopter services are both that standardized and have no directly link to each of the bases in that way.
- The services provided of NS is best tailored for rig consortia where different actors has joined a drilling project and split the cost associated hired services due

to the project. Purchase and sale of different SWOT in the consortia regulate how many actors that are left in the consortia. In light of NS is Statoil and Total the biggest actors that are left in the consortia made through a framework agreement with NS. What are characterized with Statoil and Total is that they have an organization that is large enough to purchase standardized services such as vessel and helicopter services through their own organization. But if a consortia have made a framework agreement with NS, the actors that are joining the consortia has to follow the agreements and contracts made by the consortia from earlier.

Part 3, Relationship between NorSea AS in Stavanger and their suppliers:

- NS is using CHC Helicopter Services, but there are two three other actors in the market that also could have been used.
- The suppliers used today are important in light of high turnover, and medium high risk. But not that important in light of NSG and NS core business and competence to control the logistical processes. One thing is the base operations and services operated with vessels, another element is to include is the helicopter services.
- The market is transparent, and NS knows that their suppliers are also serving customers that serve the same market as NS do. NS do not see any risk in this element, but more as smart intermediaries. But there are a few big customers with relatively big market power such as Statoil
- Related to helicopter services are NS a small customer, but they are a quite big customer for MLS, who also have several other vessels operating for other customers. And in this way probably seen as strategically important customer of MLS, but not for CHC Helicopter Services. The cooperation with MLS seems to be very good, but medium good with CHC Helicopter Services.
- There is no cooperation between NS and the supplier for planning the capacity and procurement. For vessels services are the spot market used, and NSG have no directly influence on this. For helicopter services are NS trying to operate the one helicopter they rent so much as possible.
- There are a good dialog and extensive communication from the customers, through NS and with MLS about the spot market, especially in connection with a rig move, in light of rent the vessels to the right time for a beneficial price. For the helicopter services is this explained with a more on-going business when it comes to the question about vertical communication in the supply chain. Regarded

communication and exchange of data related to cost in the spot market, is it the market that set the price for the vessels services, but NS and MLS are agreeing on the price since there are within the same organization. For the helicopter services is there no exchange of data related to cost between NS and the customers.

Part 4, Choice of suppliers and the customers of NorSea AS

- Due to customers' preferences are these more based on health and safety besides core records and technical capacity and competence related to helicopter services. For vessels services are the preferences also based on health and safety besides core records and capacity. But it is also depends on which way the shipping company are positioning themselves. Some of the customer has preferences for MLS.
- There exist cooperation between NS suppliers and NS customers for both helicopter services and vessels services.
- For the product group vessels services are MLS having an important impact due to their competence and their fully integrated solution for NS customers.

7.3 Second Interview with NorSea AS, Stavanger (NS)

Date, execution: April 19th 2013, telephone interview with recording

Interview object: Commercial Manager, NorSea AS Dusavik

Relevant responses gathered through the interview:

Part 1, Description of product category: (Vessel services and helicopter services)

- MLS is a subsidiary of NSG and handle all the vessels services acquired from the customers of NS. The supply vessels services are suppliers to NS, and in those cases NS have contracts, are MLS providing services on behalf of NS customers. Both the helicopter services and the vessels services are additional services provided by NSG.
- NSG core business is to be a third party logistic provider, which means to provide service from the supplier, to offshore and backward, this is seen as a part of their value chain. MLS is founded as a own subsidiary and the helicopter services are important to get the workers on and off offshore. A general perception may be that the helicopter services are not that important, but from respondent's point of view is the helicopter services such important as vessels services etc. This because it's a part of all their logistical services provided.

Part 2, Choice of supplier (This section addresses the two bases for NorSea Group in Stavanger with the bases Dusavik and Tananger, and their choice of suppliers)

- There exist requirements regarded specifications, health and safety etc. regarded choice of suppliers in light of tenders. Beside that an offer of a tender has to satisfy all the given requirements. Due to vessels services exist there several operational requirements due to which kind of services that should be offered on the vessels such as firefighting. NS are also making requirements to the vessels in light of certifications etc. before it should serve the customers of NS.
- It is important when a product or services is needed that it has a quality that are satisfying the requirements, not only on the end product, but also on the entire process by serving the product. This is due to a tender made by NS.

Part 3, Relationship between NorSea AS in Stavanger and their suppliers:

- Uncertain if NS are using other suppliers of vessels services than MLS. If not any demand or any requirements related to choice of supplies is given, there`s no basis to choose another supplier than their own subsidiary.
 - The market is regulated with contracts, beside occasional collection of vessel on a limited time in the spot market, and that is a process MLS do for NS. Frequently is the contracts regulated, such as suppliers cannot be changed relatively often. A supplier can`t be changed without no reason, but if a new supplier is needed a tender has to be made and announced in the market. Relative to long term contracts with customers is suppliers specifications agreed upon in each contract with each customer.
- The supplier used today for these two product groups seems to be both strategically important. These because both services are value adding in the way that NS is standing out of the crowd of third party logistic providers.
- Impression that information is shared between the different operator companies, which means customers of NS. The market base is very open and transparent, but at least it also depends on the customer competence to achieve and understand the information and what is going on in the market. The vessels services are a bigger and more complex market than the helicopter services, but unfortunately are the customer bases of NS knowing more of the maritime market than the helicopter market, probably related to the size of these two markets. Helicopter services are a relatively smaller and more straightforwardly market, but the knowledge about this market is probably not that high such as for maritime services.
- Helicopter services are used for transportation of staff to and off offshore, besides rescue such as assistance or evacuation. The vessel services are used more as a working tool, for example to move a rig.

Part 4, Choice of suppliers and the customers of NorSea AS

- There probably exist or occur direct cooperation between NS suppliers and NS customers, but not for sure on these two product groups. It may depend from scope to scope on the different contracts. If someone have a very extensive contract could it be strategically to draw the best benefits out of this contract, this to get a safe access to a contact point which secure the cooperation with the third party. This will make contract supervision easier between customer and supplier. In other

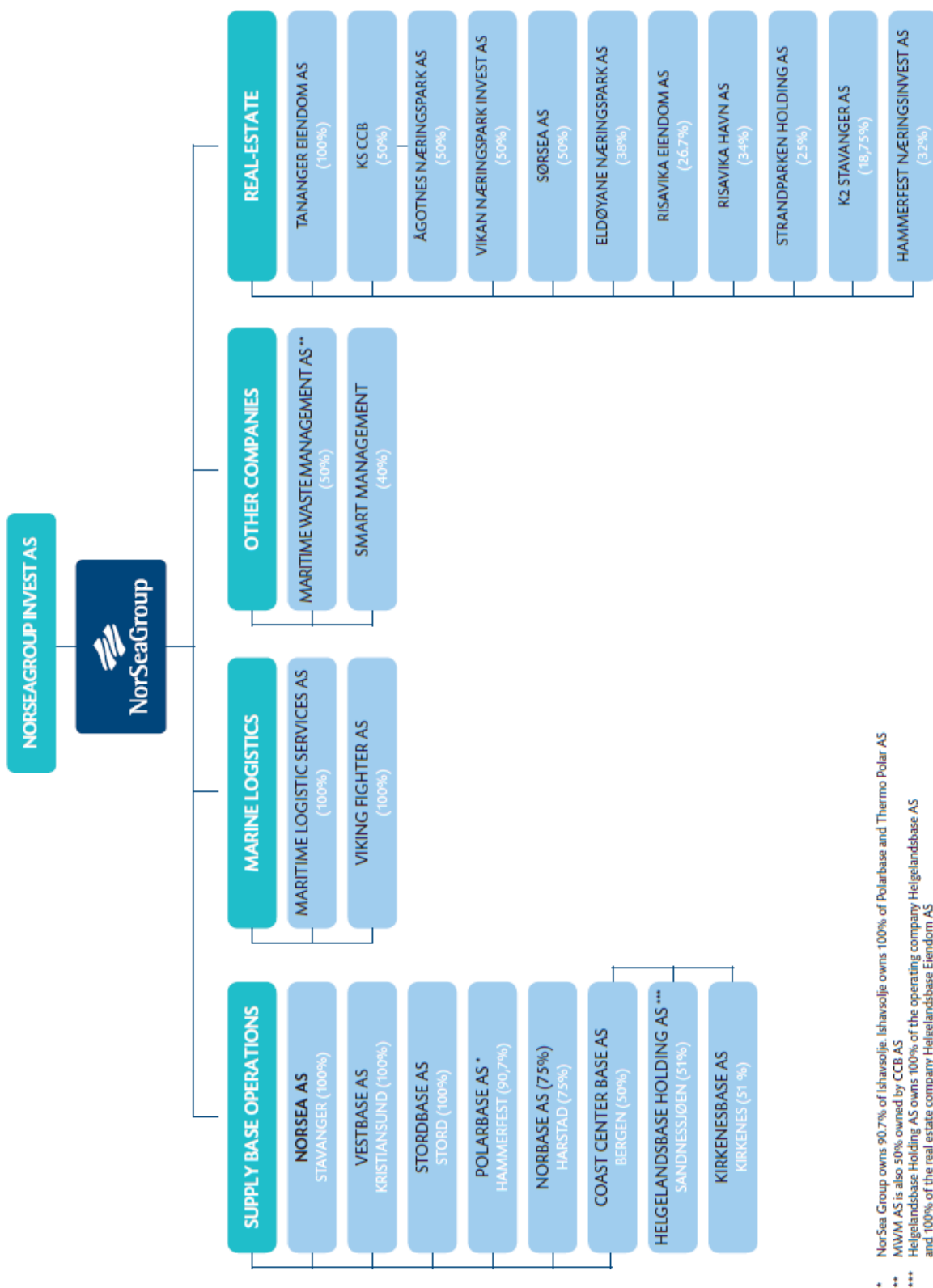
cases are the customers more “hands-on” and takes a bigger part in the selection of suppliers. What are essential in this case are if the customer is making one and one contract, or if they rather want to see the whole picture of services that have been agreed to. Alternatively use of contracts is just to renew an existing contract for a new value adding services. This is up to each customer of NS strategically choice, on how do they want to do the procurement. If the customer wants to enter into a form for partnerships or alliances to release the work with contracts for each service they need, or if they prefer the work with negotiating with several suppliers for each services needed by pushing prices and make a good deal. The last example will probably achieve a lower price for each service or each piece of product, but give a higher transaction cost and more unclear view over the supply chain.

- Duration on contracts have definitively a high impact if a customer of NS is going to negotiate directly with one of the suppliers of NS. A longer duration on a contract gives a higher incentive to build up a common infrastructure for cooperation, than cooperation on short contracts. Contracts made for a short duration may focus more on price on the products and services, and have less focus on interaction like knowledge and information sharing. Contracts made on a short duration will probably not give any value adding in the service logistics. So according to the respondent is this some of the basis with purchasing if an operator is willing to divide and conquer to get a lower price and independency, or if they want to focus on the value adding over time for the customer customers. The market for vessel services and helicopter services work quite similar on this area. Today it is a market for trade and commodity products such as vessels and helicopter services, but the experience is that the market works well even that there are no stock exchange for this services.
- Example from the respondent related to purchasing processes and negotiation. Today are the markets for these two product groups not regulated such as markets for other commodity products. Trade with different currencies and shares are strictly regulated, but the spot market where MLS is renting vessels are not regulated in any way which means that they are dependent on formal contracts to build trust over time and not purchase these kind of services occasional such as standard products and services. If a purchasing process of these kinds of services, helicopter services and vessels services, is getting to standardized and easy to achieve, there will be a bigger volatility in the market and the prices can be lower

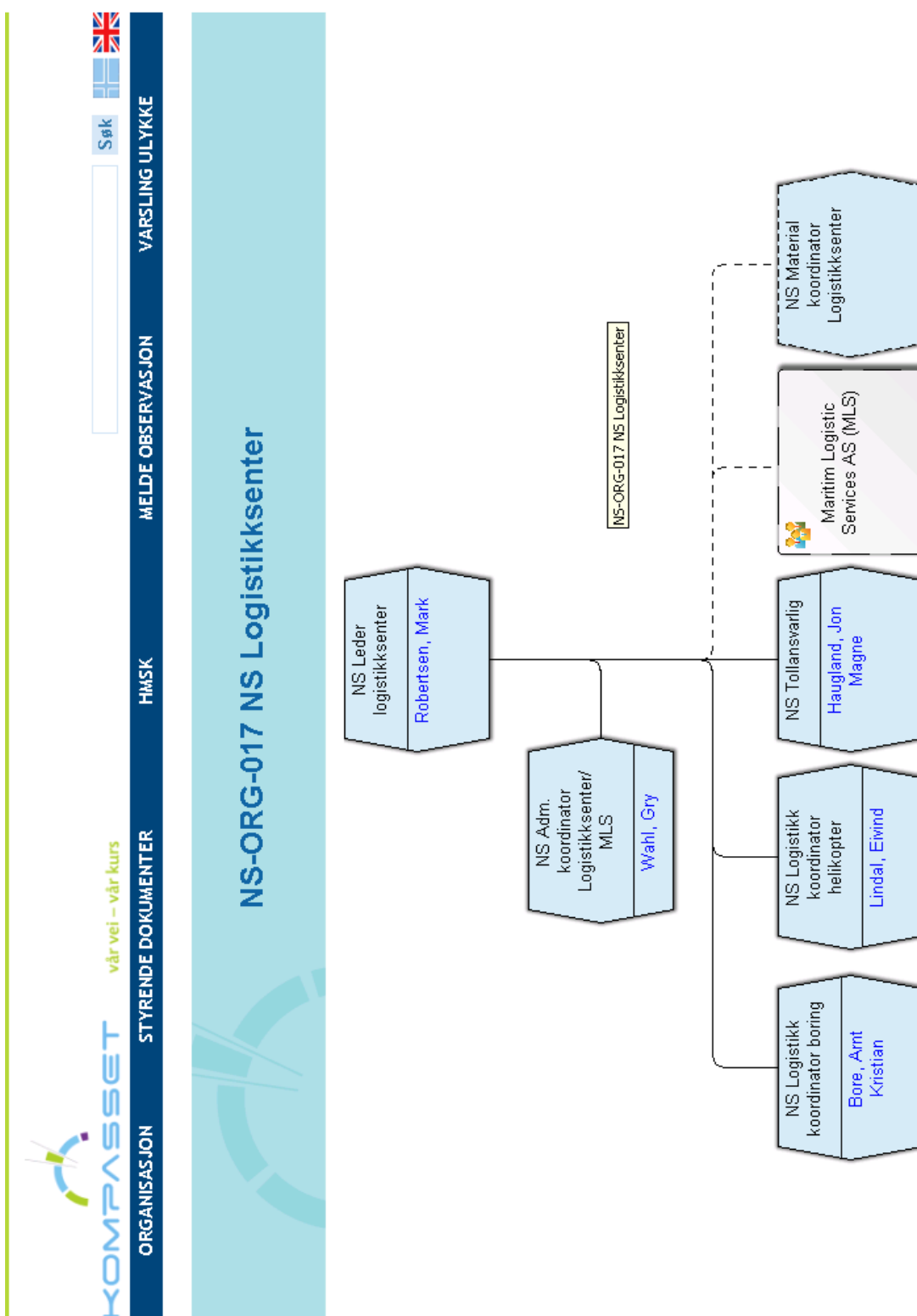
on a shorter time horizon. So far has vessels services been on longer contracts, but the development of the markets and the change in how the customer obtain the services, will probably affect this market, especially since the vessels services operated from MLS now have been established in the spot market. This will probably affect the way the customers purchase these services and in the long run will the purchase of these services be more standardized and easy to purchase and in this case will there be a potential for lower prices in the market. MLS are renting vessels both on long terms, and from the spot market on behalf of other operators. The vessels services can be seen as a commodity product, standardized with specific requirements such as firefighting, a minimum number of square foot deck, not more than 20 years, anchor handling or standard supply vessel.

- NS are not experiencing the same conditions in the market for helicopter services, and the respondent has no opinion if the market helicopter services will develop in this direction or not.

7.4 Corporate Structure NorSea Group AS



7.5 Logistic Organization NorSea AS, Stavanger



7.6 Costs divided on external supplier and suppliers within NSG, eight biggest product groups

