



Master's degree thesis

LOG950 Logistics

**Supplier Relations and Strategies Within a Service
Supply Chain: A Case Study of Axess AS**

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Preface

This master thesis represents the completion of the Master of Science in Logistics program at Molde University College. The thesis has been written in the period from December 2013 to May 2014. The supervisor throughout this study has been Svein Bråthen.

Acknowledgement

The authors would like to show our appreciation towards people who have helped us during this period:

Professor Svein Bråthen: For providing the authors with appreciable and valuable feedback throughout the work of this thesis and for support and motivation.

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At last, the authors would also like to thank our family and friends for believing in us, and supporting us throughout the education.

Summary

The petroleum industry has been of great importance for the Norwegian economy for many years and today the Norwegian Continental Shelf is producing more than 1,9 million barrels of oil per day. This is a highly regulated industry with fierce competition, where the market actors are under constant surveillance.

Axess AS is a service providing company within this industry. A challenge for Axess, and other companies who are part of a service supply chain, is that they are depending on other sub-suppliers' input in order to deliver the demanded output to the end customer. In uncertain and complex environments the focal firm will in most cases meet challenges regarding information asymmetry and opportunistic behavior.

This thesis seeks to investigate the focal firms most critical buyer-supplier relationships in order to answer the research problem: *What strategies can Axess AS utilize in order to manage their supplier relations?*

The research problem will be solved based on a conceptual model that includes theories such as Supply Network Analysis, Kraljic's Supplier Strategies, Transaction Cost Analysis, Resource-Dependence Theory and Relational Contracting Theory, recommendations regarding suitable purchasing strategies will be given.

Data was collected by conducting interviews with employees in Axess and with one third of the most critical suppliers. The case study disclosed that the current purchasing function in Axess is not operating the recommended way for all of the supplier relations and do not adequately evaluate the level of bargaining power, the dependency conditions or the market structure.

Abbreviations

AIM – Advanced Inspection Methods

BNOK – Billion Norwegian Kroner

DREQ – Drilling Equipment Inspection

DROPS – Dropped Object Prevention Scheme

FFA – Five Forces Analysis

HSE – Health, Safety and Environment

LEC – Lifting Equipment Certification

MH – Material Handling

MM – Maintenance Management

MNOK – Million Norwegian Kroner

NCS – Norwegian Continental Shelf

NDT – Non Destructive Testing

NOK – Norwegian Kroner

NPD – Norwegian Petroleum Department

PO – Purchase Order

RAT – Rope Access Technology

RBI – Risk Based Inspection

RCT – Relational Contracting Theory

RDT – Resource Dependence Theory

SCM – Supply Chain Management

SIM – Structural Integrity Management

SNA – Social Network Analysis

SLO – Safe Lifting Operations

SPI – Specific Investments

TI – Teknisk Institutt

TCA – Transaction Cost Analysis

QC – Quality Control

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1.0 Introduction

This first chapter gives insight in why the topic of the thesis is relevant to focus on, and also what the purpose of it is. The chapter continues with the research problem and the outline of the thesis.

1.1 Background

For more than 40 years, the petroleum industry has been of great significance for the growth in the Norwegian economy. During these years the production of oil on the Norwegian Continental Shelf (NCS) have contributed with more than 11.000 Billions Norwegian Krone (BNOK) to the Norwegian gross domestic product. In 2013 the petroleum industry was responsible for approximately 21,5 % of the value added in Norway and 48,9 % of all exports came from this industry (Norwegian Petroleum Directorate 2014). The NCS consist of 78 fields in operation and in total these fields' produces approximately 1,9 million barrels of oil per day. The production volume in the petroleum industry has proven to be extremely volatile, and thus it may be difficult for the suppliers in the industry to react to the demand. The case company, Axess AS (hereafter referred to as Axess, the focal firm or the case company), operates within this industry where they offer services such as integrity management, engineering solutions, lifting operations and inspections to the different oil- and gas installations onshore and offshore. The case company will be thoroughly elaborated in section 2.0.

The petroleum industry is a challenging industry, and companies have strict regulations within Health, Safety and Environment (HSE) with constant focus on improvement. In Statoil's annual report from 2010 it is noted that the focus on risk assessments, procedures and systems can be improved, and that the quality of HSE constantly needs to be controlled and improved in order to avoid accidents such as the disaster in the Gulf of Mexico. Hervik et al. (2011) state that the increased emphasis on HSE has led to the companies becoming more aware of quality and not only price. This means that the suppliers need to compete on delivering the best quality at the best price to the right time. The quality aspect is also a part of Axess' vision, where they want to "create world-class solutions, securing long term integrity" (Axess 2013).

The market has become more intense in terms of competition and technology, and the need for a purchasing strategy that reduces risks of any kind has increased. In the oil and gas industry it is important to have good relations with the suppliers since most of the purchases are based on urgent orders from the customers. In this context urgent is defined as the response time the customer dictates. It is important for Axess to deliver their services when the customer wants it. Especially if a critical accident might threaten the oil production or even the whole installation, such as a defect crane or equipment in quarantine due to failure, corrosion or lack of a valid certificate. Production downtime costs the owner of the rig and the operating companies lots of money, but it is also crucial to prevent critical accidents that might cause environmental issues. Skarsaune (2013) presents how expensive a production downtime can be for an installation. When closing down the Njord installation it was calculated to lead to a loss of around 25.000 barrels of oil per day, which was equal to 15 Millions Norwegian Krone (MNOK) per day.

1.2 Purpose

Axess began the implementation of a purchasing department in April 2013. Before that the purchases was carried out in a randomly manner. With the introduction of a more professional procurement function this also tend to trigger the need for greater focus on strategic supplier management (Humphreys, McIvor and McAleer 1998). Axess has a supplier base consisting of more than 800 suppliers where 10 of them with the highest purchasing costs are responsible for 46 MNOK of the purchases. This means that approximately 1,6 % of the suppliers is responsible for 30 %¹ of the purchases, which shows that a reduction in the number of suppliers is necessary. These 10 suppliers are the largest suppliers based on purchased amount, but since there will be additional criteria when classifying the 10 suppliers in this thesis it may be other suppliers that will be analyzed. The purpose of this study is to gain insight in the relations between Axess and their suppliers, and thereafter give strategy recommendations that are embedded in relevant theories. According to van Weele (2010a) even small improvements in the

¹ These data are found in an internal document which shows the ten largest suppliers in terms of purchases, and the data, statistics and supplier categories from this document will be used throughout the thesis.

relationship with the suppliers may have a great impact on the financial result to the company, and thus this will be a beneficial analysis for Axess.

As the company operates within a service supply chain this will be the basis of the study. Ellram, Tate and Billington (2004, 25) defined service supply chain management as “management of information, processes, capacity, service performance and funds from the earliest supplier to the ultimate customer”. Magma (2008) concludes that the service sector contribute to approximately 70 % of the value added and employment in the OECD countries, including Norway. Due to the increased importance of services, the focus has gradually shifted from the regular manufacturing supply chain to the service supply chain during the last couple of years. The differences between these types of supply chains means that previous research of the manufacturing supply chain might not be applicable for the service supply chain.

1.3 Research Problem

A research problem often refers “to some difficulty which a researcher experiences in context of either a theoretical or practical situation and wants to obtain a solution for the same” (Kothari 2004, 24). Based on the fact that Axess has established a procurement function, they want to reduce their number of suppliers and implement better supplier strategies in order to manage the supplier relations in an appropriate way. To be able to achieve increased competitiveness through the supply chain and the suppliers, Axess will need to consider how their supplier relations may affect the purchasing function and vice versa. Watts, Kim and Hahn (1992) claim that the relationships are important because purchasing links suppliers with the company and if these relationships are not properly defined it is difficult to incorporate purchasing and suppliers into the strategic level planning process.

Hoyt and Huq (2000) investigate how the buyer-supplier relationships have evolved during the past two decades, and also how the relationship can play an important role for the organization if handled properly. There are several aspects on how the suppliers should be treated; arms-length relationship and high-performance relationship are two extremes. Hoyt and Huq (2000) defined arms-length relationship as relationships with none or few investments in assets and little exchange of information, while high-performance

relationships are based on collaboration and information-sharing. Helper and Sako (1995) also investigated this topic, where they stated that the natures of supplier relations in Japan and the United States, who have been known to be two opposites when doing business, are converging in some respect. Thus the formulated research problem is:

What strategies can Axess AS utilize to manage their supplier relations?

The research problem will be assessed based on the knowledge of the researchers, resources available and limited by the time span of the study. Different research tasks will be conducted in order to answer the research questions and further the research problem. One of the authors works in the case company, and thus some of the information will be based on her knowledge and experience. The authors will also use knowledge from their previous educations, which are within the fields of Marketing and Business Administration from Handelshøyskolen BI.

1.3.1 Research Questions

The following research questions should increase the understanding of the topic and thus give valuable insight into the research problem:

RQ1: What makes a supplier critical for Axess AS?

RQ2: How does the market structure affect the buyer-supplier relationships?

1.4 Outline of Thesis

The rest of the thesis is set out as follows. First, the case company will be thoroughly described in order for the reader to understand what makes the foundation of the research. Second, the relevant literature and theories are reviewed, such as transaction cost analysis (TCA), resource dependence theory (RDT) and the relational contracting theory (RCT). Next, the research methodology and the case study method is explained and elaborated on in chapter four, together with an overview of the theoretical framework and a set of propositions. In chapter five the findings from the data collection is presented, related to the theories presented earlier and analyzed. In chapter six the findings are discussed and the research questions are answered. Finally, the authors sum up and conclude on some recommendations to the case company and provide suggestions for further research.

2.0 The Case Company

The second chapter gives a thorough overview of the case company in order for the reader to understand important aspects of the company. At last, limitations for the research are mentioned, which sets the framework for the rest of the study.

2.1 Introduction

Axess is a global engineering company that provides rig services, such as inspection, integrity management and engineering solutions both onshore and offshore to the oil and gas industry. The company was founded in 1998 and the head office is located in Molde, with branches in Bergen, Trondheim, Orkanger and Kristiansund. In later years they have expanded widely international and established branch offices in Houston (USA), Rio de Janeiro (Brazil), St. John's (Canada) and Singapore. In 2012 the annual revenue was NOK 414 millions. The company started up with two eager entrepreneurs in Molde, and as of today Axess has 323 employees worldwide. Their vision is to create long-term benefits for their clients, to help them achieve their goals of maximum production uptime and zero harm (Axess 2013). Typical customers to Axess are Statoil, BW Offshore, Aker Solution MMO AS, Odfjell Drilling and Subsea 7.

2.2 Overview of the Company

Axess is divided into five business areas, each including an area of expertise; inspection management and certification, engineering solutions, maintenance management and risk based inspection, quality control and structural integrity management (Axess 2013).

The department of Inspection Management and Certification includes sub departments related to certification of lifting equipment (LEC), inspection of drilling equipment (DREQ) and prevention of dropped objects (DROPS). For the sub department LEC, periodic inspections, such as annual and semiannual controls, certifications and re-certifications, consultancy services and GAP analysis are typical provided services. It is important to regularly check for and remove fatigue-cracked prone drilling equipment. The DROPS sub department have specialized skills in prevention of dropped objects, executing both DROPS inspections and correcting DROPS findings. The department for Engineering

Solutions consists of four sub departments: material handling (MH), safe lifting operations (SLO), electro and crane. When no permanent modification of equipment or machinery is a solution, the SLO sub department is involved to make sure that a temporary assembly and lifting operation is secured. Modifications and maintenance of cranes is an important service for Axess, where design and analysis of complex structures is a crucial part. The Quality Control (QC) department provides external fabrication and testing for customers, while the Advanced Inspection Methods (AIM) service includes among other things several Non Destructive Testing (NDT) methods such as ultrasonic and radiographic testing. Both the QC and AIM sub departments are often involved in larger projects across the organization. The Structural Integrity Management (SIM) department offers hull inspections on installations and provides engineering solutions, calculations and more. The last department consists of Maintenance Management (MM) and Risk Based Inspection (RBI) as sub departments. RBI includes planning and preparing for long-term inspection programs based on a risk assessment.

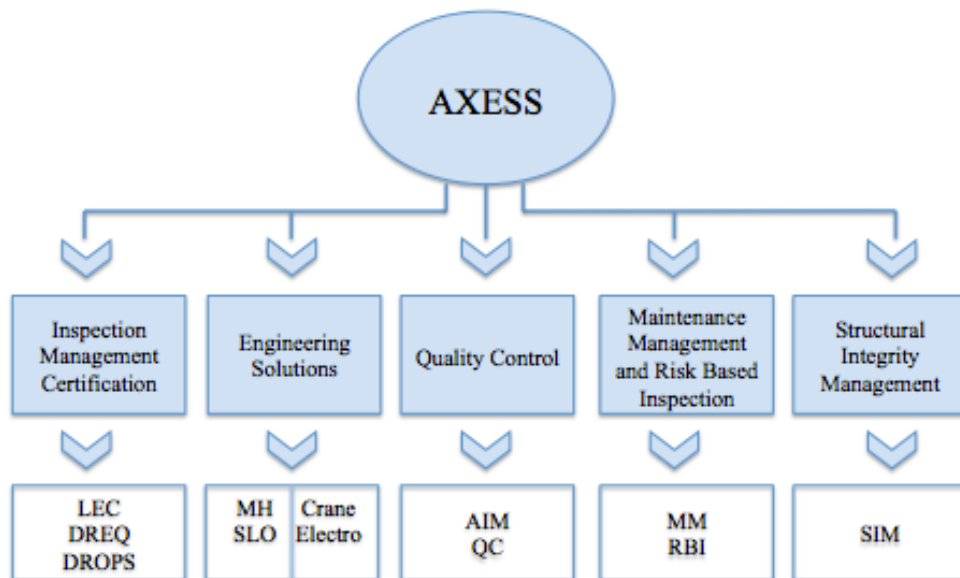


Figure 1. Map of departments in Axess

2.2.1 Project Process

In a matrix company the projects are run by a project manager and executed within cross-functional teams (Appelbaum, Nadeau and Cyr 2009). This is how the projects are executed in Axess and each project is tailored to the customers needs and the specific purchasing order received on that particular project. The main projects that Axess conducts

are related to annual controls, certification, repairs, corrections and improvement of equipment, tools, machinery and cranes. They also review documentation and drawings for customers, draw new solutions and do modifications, replace old equipment and redesign of existing solutions. On some projects the customer wants Axess to buy components for them, making Axess an intermediary for material and quality control. Even if each project may be different, the project process is always following the same phases. In short, each project starts out with a Purchase Order (PO) that is received from a customer, or if the Sales Department has sold a solution or made a deal with a customer. Then the project manager is briefed about what is promised and needed, a request for the required personnel qualifications is sent to the Personnel Coordination Department. During the planning of the project there is close contact between the project manager, the project team and the customer upon delivery of the service. Then the job (the service) is conducted on an offshore or onshore installation. When the final written report that summarizes the findings during the inspection is delivered to the customer, the project is usually completed, invoiced and closed.

2.2.2 Service Providing Company

As a service providing company Axess meet different challenges than a production company. When a service is provided there is nothing physical that the customer can see or feel, and even if the same job is done on multiple projects with exactly the same checklists and routines, the provided service is almost never the same from one time to another. This is due to the impact of unexpected factors that might occur. Which could be bad weather conditions or that a service engineer gets ill. The provided service will always depend on the service engineer that is actually providing the service on the company's behalf. If the hired personnel do a bad job, then it is Axess that is penalized. Another important distinction is that in service supply chains there are simultaneous production and consumption, while in manufacturing these two are clearly separated (Sonmez and Moorhouse 2010). Axess often starts the planning of the job onshore in good time before the project execution offshore. But an important part of Axess' revenue is also based on urgent orders/projects that Axess accepts to take on without much time for planning in advance. Some projects may be planned early, such as annual controls that are conducted the same month every year. Engineers look at different solutions and determine in consultation with the customer what is the best technical decision. Parts of the service providing will always be tangible and easy to evaluate for the customer, such as the written

reports from the service engineer, the checklists and the drawings from the engineering department. But in contrast to manufacturing, there might be huge differences in perceived quality of the service and it is not easy to measure the actual performance. The overall impression of the service might vary largely from whom you ask in the customer firm. The outcome of the service depends partly on the engineer providing it and the different expectations that customers have. This is an important aspect to remember throughout the thesis.

2.2.3 Purchasing Function

The company is growing fast and is very successful with their internationalization strategy (Rbnett 2013). In 2012 the company managed to double their revenue over the last three years, and they managed to double their equity over the last two years (Forvalt 2014a). At the same time as they faces rapid expansion, the company undergoes a process where they are moving away from being what Henry Mintzberg (1979) referred to as an entrepreneurial firm to a more professional organization with structured functions.

In April 2013 Axess started the implementation and establishment of a procurement function. The company employed a procurement manager to organize their purchases along their global service supply chain. The project manager still purchases what is needed on each individual project, totally independent of other purchases. The choice of supplier is done randomly and only after a subjective evaluation from the employee. This has resulted in an overly long list of potential suppliers to the case company. As an example of the implications this may cause; one employee in Axess tried to contact several suppliers during the month of July because their service was needed in a project that was running during the summer. This turned out to be difficult since the suppliers that still had open offices already had planned their activities for the summer and had no capacity left. The lack of strategy behind the supplier selection may neglect the potential benefits of having closer relationships with the most important suppliers to the company.

2.2.4 Supplier Structure

As a service providing company they do not have any in-house manufacturing. Their main suppliers help them deliver their services, and are suppliers such as travel agencies (Berg-Hansen), transporting firms (Kvikkas.no AS) and personnel hiring companies (Vertikal Service AS). They also have suppliers of physical goods that are not directly tied to their

core competence, such as suppliers of office supplies, food to the employee canteen and fabrication supplies.

Axess AS has collected a list of suppliers over the years of operation for the company of around 260 different suppliers with purchasing orders over NOK 25.000. Additionally, there are around 600 suppliers with purchasing orders below NOK 25.000. As mentioned above, Axess has identified 10 suppliers that covered about 30 % of all the purchases at Axess, in total 46 MNOK. The largest supplier to Axess is the personnel hiring company called Vertikal Service AS, which alone accounts for 5.8 MNOK of all the purchases.

Some of Axess suppliers provide services that they actually could deliver directly to the end-customer, in other words directly to Axess' customers. The procurement manager of Axess defines the end-customers of Axess as rig-and oil companies, such as Seadrill, Transocean and Statoil (Appendix 1). As an example some of the hiring companies sometimes take on their own projects and are able to do the required job offshore, without Axess as an intermediary. So, some of Axess suppliers have the same customers as Axess. Therefore an important focus is to keep a strategic distance to their competitors and be aware of suppliers and sub-suppliers that might grow stronger at the expense of Axess. To manage challenges like this Axess has a routine to make a criticality assessment for their suppliers. Procurement Manager, Ole Kristian Blindheim, in Axess has written an internal document² which describe how this criticality evaluation is done by presenting three categories the suppliers could fit in to (translated by the authors):

- 1) *Critical* – suppliers that have a main part of the service delivery from Axess to the customer. Examples would be hiring personnel companies or suppliers of tools/components used in the delivery. Also suppliers of the primary IT-systems to Axess are classified as critical.
- 2) *Medium* – suppliers that indirectly deliver and contribute to Axess' services. This could be a wholesaler of standard products (such as overalls and safety clothing) or travel agencies.

² The internal document is a procedure regarding the procurement function, which gives guidance to how the suppliers should be evaluated. This is an unpublished document, only available from Axess intranet.

- 3) *Non-critical* – suppliers that deliver products or services outside of the primary service delivery to Axess, such as suppliers to the office canteen, kindergartens where the employees children attend to and insurance services.

The 10 most critical suppliers according to Axess are listed in random order below. After reviewing this list, it was noted that Onix was placed in the category for Human Relations, including suppliers such as cleaning companies, car and boat expenses. Therefore we decided to move Onix over to the same category as IT Nor, which is “IT”. This decision was based upon the fact that Axess has classified all primary software providers as critical. This list should not be confused with the 10 largest suppliers representing 30 % of the total purchases in Axess.

Company	Category	Sub-Category
Dacon Inspection AS	Personnel	NDT ; RAT
IKM Mekaniske Kristiansund AS	Fabrication and Equipment	Surface Treating ; Welding
IT Nor AS	IT	Programming ; Software
KAM Lifting Consult	Personnel	Cranes ; Lifting
Onix AS	IT	Programming ; Software
Rig Access AS	Personnel	RAT
Vertikal Service AS	Personnel	NDT ; RAT
Vinde Tilkomsteknikk AS	Personnel	RAT
Water Weights Scandinavia AS	Fabrication and Equipment	Loadcells ; Waterbags
Waage Transport AS	Transport	Parcel-services

Table 1. List of suppliers

As seen most of the critical suppliers are personnel hiring companies, with competence related to Non-Destructive Testing (NDT) and Rope Access Technology (RAT). NDT is consisting of different techniques to test materials and components for manufacturing and in-service defects such as cracks, voids, porosity and corrosion (Bogue 2010). Use of techniques such as Ultrasonic, Radiography, Eddy Current and Magnetic particle inspection is crucial for the industry in which Axess operates, to be able to state the quality and safety of materials and structures. RAT is used by many industries worldwide today, and in the offshore industry this access technique is often used in combination with NDT. The main benefits with this technique are that it is environmentally friendly and often not disruptive with other ongoing operations (IRATA 2014).

2.2.4.1 Existing Agreements

Today there are no strategic partnerships or collaboration agreements with any of the suppliers, and not all of the suppliers who have formalized agreements with Axess. Most of the existing agreements are framework agreements of rates and delivery terms, with a one-year duration and then renegotiated each year. Some suppliers adjust their prices every 6 months (Appendix 1). It also exists framework agreements with duration of three years and many of the agreements are auto renewed if nothing else is stated.

Axess wish to have framework agreements with their personnel hiring suppliers in order to control the hiring rates. Because of the difficulties in forecasting upcoming demand related to fabrication and manufacturing, framework agreements are avoided for these suppliers (Appendix 1).

2.3 Limitations

To be able to grasp into details within the different suppliers, it seems adequate to disregard the global perspective in the supplier selection and only focus on the Norwegian part of the organization. Further, we limit the thesis to only focus on the offices in Norway and their most important suppliers. Because of the available time span of this thesis it will be too time consuming to focus on the aspect with international suppliers and potential challenges and opportunities in relation to this. Additionally, based on previous experience it is more difficult to gather accounting data about foreign companies than it is about Norwegian companies. The accounting data for Norwegian companies will be discussed later in the thesis. Given that the company already has about 260 suppliers with orders above 25.000 NOK, it will be difficult to analyze each of the supplier relationships in this thesis. Together with our supervisor and the representative in Axess, it has been decided to only focus on the 10 most important and critical suppliers. This will let us do a more comprehensive analysis and give more detailed strategy recommendations to Axess. We are aware that the customer perspective will also be of importance and potentially influence the relationship with the supplier, but this is beyond the scope of our thesis and will not be further elaborated.

3.0 Theory Review

This chapter consists of relevant theories for solving the research questions. The majority of the existing research on this topic is on the manufacturing supply chain, but aspects of the theories will be applicable for the service supply chain. The theories that the authors find relevant are Social Network Analysis, Kraljic's Purchasing Strategies, Transaction Cost Analysis, Resource Dependence Theory and Relational Contracting Theory.

3.1 Purchasing Function

Dubois and Pedersen (2002) mentions that the purchasing costs have arisen the past decades, and the value of the purchases may in some companies account for as much as 50-80 % of the total cost of goods sold. With such expenditures it is reasonable for firms to develop a well-functioning purchasing department, with focus on reducing cost and increasing profit. The increased impact of the purchasing function has also entailed that the suppliers' importance increase, since they are responsible for the value creation related to the purchases. According to van Weele (2010b) the traditional way of operating the procurement function has changed drastically the last years, and management of supplier relationships have become more strategic. Also Watts, Kim and Hahn (1992) investigate how buyer-supplier relationships can improve key factors in the company, and thus the competitiveness. They state that the fundamental purpose of the purchasing function is related to putting the right product in the right quantity, in the right price, at the right time, all which in the end is closely linked to the supplier's capabilities.

3.1.1 Purchasing of Services

How the buying firms should manage their purchasing function and supplier base is debatable, but it should result in value added both for the company, the suppliers and the customers. Sonmez and Moorhouse (2010) claim that services can be divided into two categories:

- Professional Services
- Other (generic) Services

The professional services could be management consultancy, legal consultancy and accounting, while the generic services may be cleaning and secretarial services. Further in this thesis it will mainly be focused on professional services. Smeltzer and Ogden (2002)

investigate how the purchasing of services differs from the purchasing of products. They discovered that the purchasing professionals do have different perception of the purchasing process of materials and services, and thus the materials and services should be treated with different processes. In addition they detected that the complexity of purchasing services is much higher than the purchasing complexity of materials.

Watts, Kim and Hahn (1992) state that the company must have a strategically integrated purchasing function in order to compete effectively. The purpose with the article is to develop a conceptual framework that link purchasing to corporate competitive strategy and functional level strategies. An organization might focus on cost, quality, dependability or flexibility as their main strategy, and since purchasing's core task is to support the operations activities in the company it is crucial that these strategies are aligned with each other. It is believed that by stimulating an active involvement of the purchasing function in the development and implementation of the corporate competitive strategy, this will improve an organization's overall performance (Watts, Kim and Hahn 1992). Matthew Thompson (1996) states that close relationships with suppliers restrict prices to rise above market norms, which again highlight the strategic importance of the procurement function. Sonmez and Moorhouse (2010) note that payment of services often is more challenging than payment of manufactured goods, due to the difficulty of matching the receipt with the intangible service. In addition they mention that the service level agreements often are vague compared to specifications for manufactured goods, and that the quality is difficult to measure due to different perceptions (as mentioned in section 2.2.2).

Wynstra, Axelsson and van der Valk (2006) note that the different types of services require different interactions with the suppliers. They refer to Doty and Glick (1994) who have categorized the services into four different categories:

1. *Consumption services* are services that do not affect how the buyer's primary processes are conducted.
2. *Instrumental services* directly affect how the buyer's primary processes are conducted, but it is not delivered to the end-customer.
3. *Semi-manufactured services* are services that are the delivered to the end-customer of the buyer, after being transformed.
4. *Component services* are delivered to the end-customer of the buyer without transformation.

If the companies were to adapt this classification of services it would enable them to learn across the categories, capture the variety in business services and also provide meaningful distinctions between the different services (Wynstra, Axelsson and van der Valk 2006).

Buvik (2001) presents three types of purchasing roles, which should be linked to the existing market structure:

- *Reactive* – this role is primary a logistics function, where the responsibilities are to determine the quantity and schedule the inventory levels.
- *Proactive* – this role mainly act as an industrial purchasing decision process, where the responsibilities are to select buying criteria, conduct upstream marketing research and perform evaluation of suppliers.
- *Interactive* – this role primary consist of bilateral bargaining, where the responsibilities are to bargain and monitor, coordination of the company's product preferences with supplier's product and value analysis.

These roles of purchasing will further be linked against the market structure in chapter 3.3.1.1, where the market structures are presented based on van Weele's (2010a) typology.

3.1.2 Summary of Purchasing Function

Since the case company in this thesis operates within the service supply chain, it is important to keep this in mind during the analysis and discussion. As mentioned above, the purchasing of services is often a more demanding and complex process than the purchasing of manufactured goods. In addition the payments, observed quality and specifications are often different and more demanding than in a manufacturing supply chain.

3.2 *Supply Chain Network*

The surroundings to a company are becoming more and more complex and are built up of multiple tiers of both suppliers and customers. According to Mena, Humphries and Choi (2013), outsourcing and globalization of sourcing is contributing to this. They also state that many authors before them have concluded that the complexity and the length of the supply chain have an impact on performance indicators of the system such as cost, quality and responsiveness. It is therefore crucial to map and understand the supply chain context in which the focal firm operates.

3.2.1 Social Network Analysis

Social Network Analysis (SNA) might be defined as a tool to help map and investigate the relationships among actors in a network. These relationships can be friendship, liking, communication, workflow or simply the exchange of goods. The methodology has also been cited as a powerful tool that let managers map informal and formal networks in their supply chain network (Carter, Ellram and Tate 2007). SNA can be applied both within and between organizations in a supply chain network. A supply network is usually a very complex system consisting of both material flow and knowledge flow. More specific it could be flows of money, stock of inventory or ideas (Borgatti and Li 2009). The unit of analysis in this theory is the relationships among the actors in the supply chain and the objective is to describe and analyze the patterning of the relationships and linkages between organizations (Carter, Ellram and Tate 2007).

The interest in social networks has received increased attention much due to the concept of social capital, which can be explained as the value of a network's connections. Mapping the supply chain network can highlight this value by drawing the network actors. The actors might be persons, teams, organizations or concepts (Borgatti and Foster 2003). Each of these actors is connected by a set of ties, and these ties might be characterized by multiple factors and be of many types, such as friendship or competition (Borgatti and Li 2009). The cluster model introduced by Porter (1998) also supports the concept of examining the value in the network, or in the "cluster". The cluster Porter refers to is linked industries or "geographic concentrations of interconnected companies and institutions in a particular field" (Porter 1998, 78). Porter states that a company's competitive advantage will be determined mainly on the company's ability to exploit the resources available in the network surrounding the firm (De Witt, Giunipero and Melton 2006). The field of social science focused in the beginning mostly on individual attributes to explain an organization and its existence. If the organization had certain processes or structures, such as documentation of procedures and unity of command, then this could explain why the organization experienced success (Borgatti and Li 2009). Over time, the social science has focused on a more relational perspective where they look at the surroundings of the organization. It was concluded that successful organizations actually were able to adapt to their environment, and that the environment was made up of multiple individual players, such as persons or firms (Borgatti and Li 2009).

In order to analyze the focal firms environment, Borgatti and Li (2009) argue that it is relevant to take a closer look on four dimensions that make up the key concepts in SNA:

1. *Similarities*
2. *Relations*
3. *Interactions*
4. *Flows*

These dimensions are used for analyzing ties among individuals and ties among companies. The similarities category is referring to dyadic conditions and attributes such as having the same membership in associations or collocation in a district. Dyer & Singh (1998) note that a dyad can be defined as the relationship between two or more firms. The companies do not have to already have established ties to each other, but the opportunity for it to happen is enlarged. The relations dimension refers to existing joint ventures, agreements about the distribution, and aspects of ownership and competition. These ties may be continuously existing ties based on relatedness, or may be other role-based relations, such as “is the friend of” or “is the boss of”, or lastly it may be based on cognitive-affective relations that often is founded on trust. Trust will be defined and further elaborated in section 3.6.1. The interactions dimension is said to consist of discrete events that often happen over a period of time between two firms, such as e-mail communication, a sale or purchase, other market transactions or even a competitive move. It is often assumed that interactions like this often entail the existence of some kind of relationship between companies. Finally we have the flow dimension, which represents the transfers of ideas and materials. This might be a company that sells its technology to another company or an employee that leak information to an outsider. These flow ties are a direct consequence of the other dimensions, such as personal relationships and different kinds of interactions.

3.2.2 Supply Chain Mapping

It is vital to map the supply chain network for the focal firm, in order to identify possible limitations in the network as well as the potential of it. It is essential to detect the possibility of an actor in the network to act opportunistic, because opportunism can damage not only the studied relationship (the concept of opportunism will be discussed in 3.4.2.2), but also several other relationships in the supply chain (Carter, Ellram and Tate 2007). It is important with awareness of the surroundings in the network to your company because it may enhance communication, clarify channel dynamics, enhance the strategic

planning process and provide a basis for supply chain analysis (Gardner and Cooper 2003). Additionally, by mapping the supply chain network to the focal firm it might detect critical services, components and suppliers. One way to use the SNA is to start with the focal firm, draw all the actors with any kind of tie to the firm, and then draw all ties. This is called the “ego network” (Borgatti and Li 2009).

Lambert, Cooper and Pagh (1998) and Gardner and Cooper (2003) suggest potential ways on how to map the network structure to a focal firm. The flow of goods, information and money needs to be highlighted, both upstream towards the suppliers, and downstream towards the end-customer (Harrison and van Hoek 2011), but the not so important details can be excluded to keep the mapping as simple as possible without excluding important information. To be able to say anything about the dependence structure in the market where the company operates it is crucial to take a closer look at the current channel dynamics. Relative size, power, competitive positioning and future importance are all important aspects to analyze (Gardner and Cooper 2003). The easiest way to start the mapping process is to first identify the key members, in order to determine which members in the network that is critical to the success of the focal firm (Lambert, Cooper and Pagh 1998). Thereafter the supporting members of the supply chain must be identified, which are the companies that do not directly participate in value-adding activities. Next, it is necessary to determine the different types of process links/ties among the actors and the strength of the links (Lambert, Cooper and Pagh 1998).

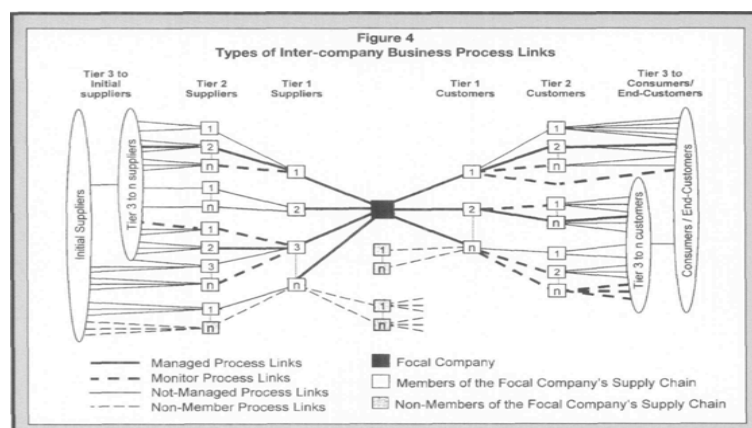


Figure 2. Types of process links (Obtained from Lambert, Cooper and Pagh 1998)

The links to the different members in the network will be of different strength and these links are crucial to map in order to understand how the supply chain network is structured.

Borgatti and Li (2009) states that if the firms actors are directly connected to each other by some kind of tie, the information that one actor possesses is most likely also possessed by the connected actor. Lambert, Cooper and Pagh (1998) discuss the different types of process links that are relevant. Figure 2 gives an overview of a supply chain network map and the different classifications of process links with other companies. The links to the key members in the network is called managed process links. These links represents the situations where the focal firm is collaborating or has integrated a process with a supplier or customer, usually in the first tier. It is important for the focal firm that the monitored process links are integrated and managed properly between the other members in the supply chain, but the focal firm does not manage these links themselves. Therefore it is said that the monitored links are not as critical as the managed links. Not-managed process links are links that the focal firm is not actively involved in, or they are not classified as critical enough to use resources to monitor. In these cases the focal firm trusts the other member companies to handle these process links. An example might be a focal firm that wants certainty of supply of a specific product, such as paper to the office printer. The product is not critical enough to use internal resources to manage this, so the focal firm leaves it up to the supplier of office supplies to manage the links with their sub-suppliers. Non-member process links are links that connect the focal firm with non-members of their supply network and is often connected with other supply chains. It is important to be familiar with these non-members, because decisions made in connecting supply chains are often able to affect the performance of the focal firm's supply chain. If a large competitor uses the same supplier as the focal firm it is crucial to predict any implications that might occur related to the allocation of the supplier's resources and manpower (Lambert, Cooper and Pagh 1998).

3.2.3 Challenges With the Mapping Process

While mapping of the supply chain network is a good strategic tool to use in decision-making, there are some concerns that companies have to be aware of. The focal company should be cautious with the sharing of such competitive information. There is a fine balance between sharing enough information with channel members and sharing too much (Gardner and Cooper 2003). By showing suppliers, customers and potential competitors how the focal firm believes it fits into the bigger picture in the network, it might influence these network members' perception about the company.

3.2.4 Summary of Supply Chain Network

This chapter is important for our research project in order to map the supply chain network where Axess operates. The links the focal company has to the environment is important to get an overview of before analyzing individual supplier relationships. It is also crucial to gather as much information about the suppliers as possible before being able to recommend a suitable strategy.

3.3 *Purchasing Strategies*

Terpend, Krause and Dooley (2011) investigate how the industrial buyers align their relationships with suppliers to the contextual characteristics of the purchase. Mintzberg's (1978) definition of strategy is used as a foundation when Terpend, Krause and Dooley's (2011, 74) define purchasing strategy, which is "patterns of decisions made by purchasing professionals during the purchasing process and in response to internal and external constraints in the business environment." Further they state that development of a sustainable competitive advantage is the ultimate purpose of all corporate and functional strategies, including purchasing.

3.3.1 Kraljic's Purchasing Strategies

Peter Kraljic has contributed within the field of purchasing portfolio management and classification of products and suppliers. His model was presented in 1983 and according to many researchers this is still the recommended portfolio model to use (van Weele 2010a). There are several reasons for the popularity of this model. One of them is that purchasing was recognized as an important management issue, and another one is that the theory clearly distinguished the different situations of purchasing and gave advice on how to handle them (Dubois and Pedersen 2002). The basis of this approach is that the purchasing managers use differentiated strategies for their suppliers. To better be able to determine the strategic direction to manage supplier relationships, one must know how the existing power-balance is among the focal firm and their key suppliers.

Kraljic (1983) emphasizes the importance of the management learning to make things happen to its own advantage, which is why he states that the perspective must be changed from an operating function to a strategic function. Further, a four-stage approach that

minimize supply vulnerability and increase the potential buying power have been used in order to devise strategies. These four stages are:

1. Classification
2. Market Analysis
3. Strategic Positioning
4. Action Plans

3.3.1.1 Classification

The approach encourages organizations to classify their products and/or suppliers into four different areas of a matrix. In this thesis it will only be relevant to investigate the supplier categories:

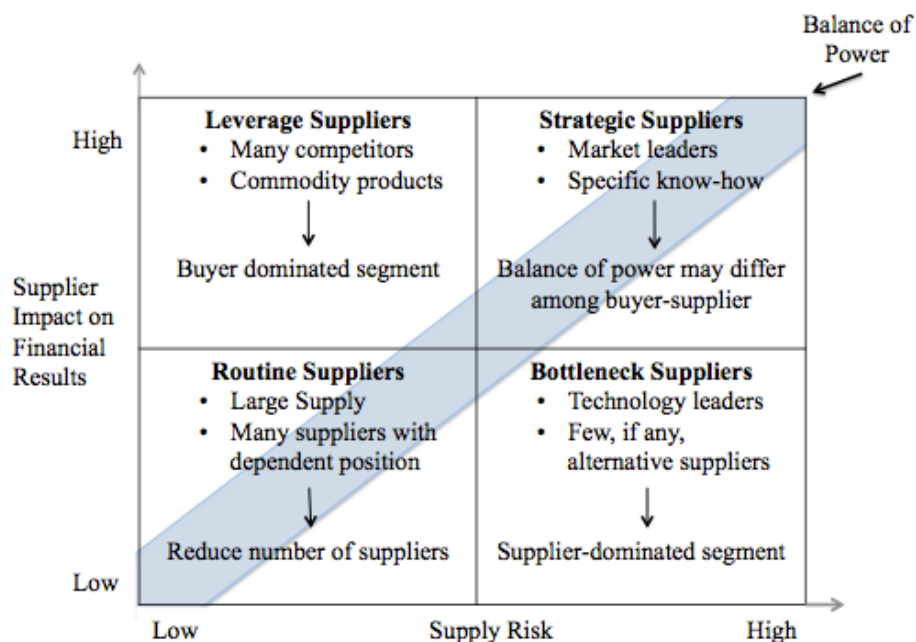


Figure 3. Kraljic's classification matrix (Adapted from van Weele 2010a)

The four supplier categories presented by Kraljic are leverage suppliers, strategic suppliers, routine suppliers and bottleneck suppliers. Kraljic (1983) notes that the leverage suppliers are classified with high profit impact and low supply risk, the strategic suppliers are classified with high profit impact and high supply risk, the routine suppliers are classified with low profit impact and low supply risk, while the bottleneck suppliers are classified with low profit impact and high supply risk. The leverage suppliers often have little power, and the buyers have freedom of choice regarding their selection of suppliers. The high number of suppliers may lead to lower switching costs, and if the power is

abused it may lead to the suppliers establishing cartels and price agreements. For the strategic suppliers the communication and interaction with their customers is often intense and complex. This category is often differentiated based on the balance of power between the involved parties, and we differentiate between a buyer-dominated segment, supplier-dominated segment and a balanced relationship. There are often many alternatives to the routine suppliers and they are characterized by their high handling costs compared to the value of the product itself. The bottleneck suppliers are often dominant in the relationship with the customer, which may result in high prices, long delivery times, bad services and severe cost consequences. The matrix is based on two factors, which determine what supplier strategy is needed for the company:

1. Importance of purchasing
2. Complexity of supply market

The importance of the purchase may consist of factors such as the product's share in overall cost, value-added profile, profitability profile, price elasticity and discount schemes, while the complexity of the supply market may consist of factors such as supply scarcity, pace of technology, material substitutions, entry barriers, logistics complexity and market structure. Van Weele (2010a) presents a matrix that shows the different types of market structure. This model shows that there are three types of market structures, where the first one is where the demand-side is stronger than the supply-side, the second is where the supply-side is stronger than the demand-side and the third is if the demand- and supply-side are balanced. Bilateral can be explained as mutual involvement of two parties, meaning that a bilateral monopoly exists if the monopolist sells his goods to a monopsonist (Campbell 2007). A market consisting of polypolistic competition can be explained by a large number of relatively small sellers and small buyers, who have little impact on the price (Schneider 2010). By evaluating the situation the company holds based on these factors, the management can decide which supply strategy is most suitable regarding exploiting the purchasing power and reducing the risk. The figure below shows van Weele's (2010a) proposed typology of market structures:

	One Buyer	Few Buyers	Many Buyers
One Supplier	Bilateral Monopoly	Limited Supply-Side Monopoly	Supply-Side Monopoly
Few Suppliers	Limited Demand-Side Monopoly	Bilateral Oligopoly	Supply-Side Oligopoly
Many Suppliers	Demand-Side Monopoly	Demand-Side Oligopoly Suppliers	Polypolistic Competition

	Demand-side stronger than supply-side
	Demand and supply more or less in balance
	Supply-side stronger than demand-side

Figure 4. Typology of market structures (Adapted from van Weele 2010a)

The matrix is based on four types of market structures, which are (van Weele 2010a):

- *Pure Competition* – In this market structure neither the supplier nor the buyer can influence the price of the service. It is also characterized by the availability of information and the high degree of market transparency.
- *Oligopoly/Oligopsony* – Oligopoly describes a situation where there are a limited number of suppliers and few variations of the offered services, while oligopsony describes the same situation, only for buyers instead of suppliers. The entry barriers in this market are high, which makes it difficult for new entrants to get a foothold in the market.
- *Monopoly/Monopsony* – Monopoly is characterized by the presence of only one supplier of the service in the market, while monopsony describes the situation where there is only one buyer of the offered services. The substitutes in this market are, at least virtually, absent, and thus the monopolist have the opportunity to pursue his own pricing policy.
- *Monopolistic Competition* – This market condition is similar to the majority of actual markets, and it is characterized by a high degree of product differentiation. Each of the suppliers seeks to create services that stand out in the market, and thus achieve “a monopoly situation for itself” (van Weele 2010a, 128), where it is possible to affect the prices.

Buvik (2001) presents a table where the roles of purchasing, mentioned in chapter 3.1.1, are linked to the various market structures. He notes that it is necessary to analyze the market structure in order to find the fundamental frame for purchasing decisions (Buvik

2001). The table presented by Buvik (2001) shows that if there exist pure competition the role of purchasing should be what he refers to as reactive, if there exist monopolistic competition the role should be proactive, while the role of purchasing should be interactive if the market structure is bilateral monopoly. These linkages are generalized and exaggerated in order to give guidance on the recommended role of purchasing, and need to be viewed in combination with other theoretical aspects.

3.3.1.2 Market Analysis

In this step it is important to be aware that from step 2 to 4 Kraljic only investigated the suppliers that were classified as *strategic* in step 1 (Gelderman 2003). In this step the company weights the bargaining power of its suppliers against its own strength as a customer. Kraljic (1983) state that no list of evaluation criteria will be equally applicable to every industry, and careful definitions of the criteria of both the supplier and the company strength is needed in order to conduct an accurate market analysis. Examples of criteria is listed below:

Indicators for the "supplier strength"	Indicators for the "company strength"
- Market size vs. supplier scarcity	- Purchasing volume vs. capacity of main units
- Market growth vs. capacity growth	- Demand growth vs. capacity growth
- Capacity utilization or bottleneck risk	- Capacity utilization of main units
- ROI and/or ROC	- Market share vis-à-vis main competition
- Cost and price structure	- Profitability of main end products
- Break-even stability	- Cost and price structure
- Uniqueness of product and technological	- Cost of non-delivery
- Entry barriers	- Entry cost
- Logistics situation	- Logistics

Figure 5. Evaluation Criteria (Adapted from Gelderman 2003)

3.3.1.3 Strategic Positioning

In this step the suppliers that were identified as strategic in step 1 need to be positioned in the purchasing portfolio matrix. Then it can identify areas of opportunity or vulnerability, assess supply risks, and derive basic strategic thrusts for these suppliers (Kraljic 1983). Kraljic (1983) presented a matrix that showed which type of strategy would be suitable based on the company and supplier strength in the market:

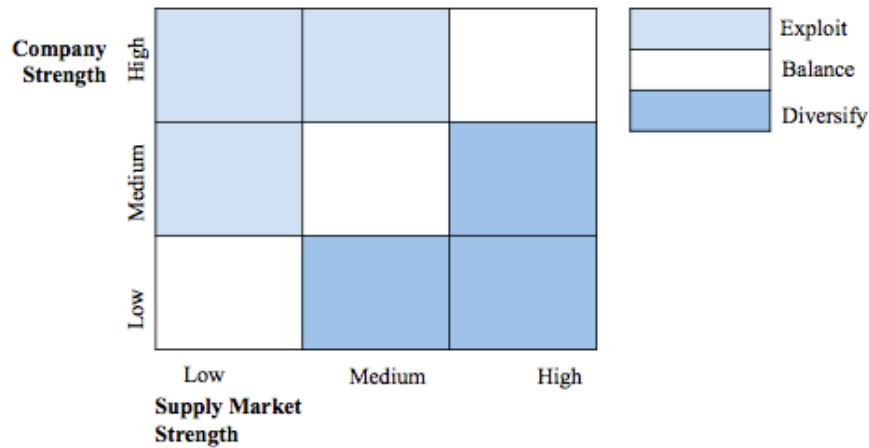


Figure 6. Kraljic's power matrix (Adapted from Gelderman 2003)

If the company should choose a reasonably aggressive strategy (exploit), a defensive strategy (diversify) or a well-balanced strategy (balance) depends on the relative power position. The reasonably aggressive strategy may help increase the profit through favorable pricing and contract agreements. But it is important to not become so aggressive that it jeopardizes the long-term relationship with the supplier. If some of the suppliers are characterized as strong the company needs to spread their purchases and find substitutes for the strong suppliers, and thus diversify their portfolio. If there is a need to diversify the company might want to consider increasing their costs on market research or supplier relations costs. A balanced strategy is suitable for suppliers who neither have major risk nor major benefits (Kraljic 1983).

3.3.1.4 Action Plans

In this phase the company should explore a range of supply scenarios in which it lays out its options for securing long-term supply and for exploiting short-term opportunities.

Kraljic (1983) presented a strategy for each of the supplier categories:

Strategies Characteristics	Partnership	Competitive Bidding	Secure Supply	Category Management and E-Procurement Solutions
Objective	Create Mutual Commitment in Long-Term Relationships	Obtain “Best Deal” for Short Term	Secure Short- and Long-Term supply and Reduce Supply Risk	Reduce Logistics Complexity, Improve Operational Efficiency and Reduce Number of Suppliers
Suitable For	Strategic Suppliers	Leverage Suppliers	Bottleneck Suppliers	Routine Suppliers
Decision Level	Board Level and Cross-Functional Approach	Board Level and Purchasing	Purchasing and Cross-Functional Approach	Purchasing and Cross-Functional Approach

Table 2. Matrix of Kraljic’s strategies (Adapted from van Weele 2010a)

Caniëls and Gelderman (2005) note that buyer-supplier relationships where the power-balance is asymmetric can be described as dysfunctional because the independent partner might try to exploit its power. Gelderman and Van Weele (2003) refer to their own article (2000) where they pointed at the natural conflict of interest in buyer-supplier relationships. Further they explain that both parties are likely to prefer a dominant position due to the attached benefits, and thus the positions in Kraljic’s matrix will always be amendable to the dynamics of buyer-seller relationships.

3.3.2 Critique to Kraljic’s Portfolio Approach

Gelderman and van Weele (2005) offer a critique to the purchasing portfolio models, among them Kraljic’s portfolio approach. They note that Hadelar and Evans (1994) state that the portfolio approach may make the difference between a good or poor purchasing function, especially for those companies who have never implemented a systematic and effective purchasing department. The portfolio models have been severely criticized as well and several authors have questioned various aspects of it, such as measurement problems, the variables and the dimensions. Among the critiques are that the variables may not be appropriate because it is difficult to know which variables are most suitable, while another is how the two dimensions should be interpreted in order to conduct the best analysis. Gelderman and van Weele (2005) conclude that companies who have not applied purchasing portfolio management are probably lagging behind in terms of professionalism and purchasing position.

Table 3 shows that there are several authors who have tried to improve Kraljic's portfolio model, but many of them end up by adopting some of Kraljic's categories or dimensions. Even Caniels and Gelderman's portfolio model from 2007 use Kraljic's portfolio approach as the foundation. Since several researchers base their portfolio models on Kraljic's approach and the recommendation from van Weele (as mentioned in section 3.3.1), it is therefore decided that Kraljic's approach will be used in this thesis.

	Stage 1 – Classify Purchases			Stage 2 – Analyze Supply Relationships		Stage 3
	Method	Categories	Classification Dimensions	Categories	Classification Dimensions	
Kraljic (1983)	Conceptual (Case Study)	<ul style="list-style-type: none"> - Strategic - Bottleneck - Leverage - Non-Critical 	<ul style="list-style-type: none"> - Importance of Purchasing - Complexity of Supply Market 	Nine Unnamed Quadrants	<ul style="list-style-type: none"> - Supplier Strength - Company Strength 	<ul style="list-style-type: none"> - Diversify - Exploit - Balance
Van Stekelenborg and Kornelius (1994)	Conceptual	<ul style="list-style-type: none"> - Plain - Internally Problematic - Externally Problematic - Complicated 	<ul style="list-style-type: none"> - Control Need of the Internal Market Demand - Control Need of the External Supply Market 	Not Considered		<ul style="list-style-type: none"> - Purchasing as Effort Manager - Purchasing as Demand Manager - Purchasing as Supply Manager - Purchasing as Integrative Manager
Hadeler and Evans (1994)	Conceptual	<ul style="list-style-type: none"> - Simple Contract - Close Relationship - Global Trading - Strategic Partnership 	<ul style="list-style-type: none"> - Product Complexity - Value Potential 	Not Considered		<ul style="list-style-type: none"> - Simplest Buying Process - Get Innovative Suppliers - Leverage Global Sourcing - Long-Term Relationships
Olsen and Ellram (1997)	Conceptual	<ul style="list-style-type: none"> - Same as Kraljic 	<ul style="list-style-type: none"> - Strategic Importance of the Purchase - Difficulty Managing the Purchase Situation - Buyer's Specific Investments - Supplier's Specific Investments 	Nine Unnamed Quadrants	<ul style="list-style-type: none"> - Relative Supplier Attractiveness - Strength of the Relationship 	<ul style="list-style-type: none"> - Adapt Existing Supplier Relationships (Step 2) to the Ideal Situation (Step 1)
Bensaou (1999)	Conceptual	<ul style="list-style-type: none"> - Market Exchange - Captive Buyer - Captive Supplier - Strategic Partnership 	<ul style="list-style-type: none"> - Buyer's Specific Investments - Supplier's Specific Investments 	Match Under-designed Over-designed	<ul style="list-style-type: none"> - Relationship Requirements - Relationship Capabilities 	<ul style="list-style-type: none"> - Match is a Path to Success, While Managers Must Avoid Over- or Under-Managing Relationships
Nellore and Soderquist (2000)	Conceptual (Case Study/ Interviews)	<ul style="list-style-type: none"> - Same as Kraljic - With Integration of Specific Requirements 	<ul style="list-style-type: none"> - Same as Kraljic and Olsen and Ellram, plus; - Specification Generators - Specification Types - Buyer-Supplier Relation 	Same as Kraljic and Olsen and Ellram	<ul style="list-style-type: none"> - Same as Kraljic and Olsen and Ellram 	<ul style="list-style-type: none"> - Same as Kraljic and Olsen and Ellram - With Explicit Consideration of Specifications Requirements
Wynstra and ten Pierick (2000)	Case Study	<ul style="list-style-type: none"> - Routine Development - Arm's-Length Development - Critical Development - Strategic Development 	<ul style="list-style-type: none"> - Degree of Development - Responsibility Held by the Supplier - Development Risk 	Not Considered	<ul style="list-style-type: none"> - Informing Each Other About Changes - Independent Development by Supplier - Focus on Obtaining Information - Close Cooperation as "Sparing Partners" 	
Saccani and Perona (2007)	Conceptual	<ul style="list-style-type: none"> - Not Considered 	<ul style="list-style-type: none"> - Traditional Relationship - Operational Relationship - Evolved Relationship 	Operational Impact Exchange Criticality	<ul style="list-style-type: none"> - Competitive Advantages can be Obtained in Presence of High Operational Impact and/or Criticality 	
Caniels and Gelderman (2007)	Survey	<ul style="list-style-type: none"> - Same as Kraljic 	<ul style="list-style-type: none"> - Quadrants are Identified Through a Qualitative Description of Four Scenarios 	Same as Stage 1	<ul style="list-style-type: none"> - Buyer's Dependence - Supplier's Dependence 	<ul style="list-style-type: none"> - Strategic Items do not Necessarily Require Power Balance - Benefits are Required to Offset Vulnerability Deriving From Dependence

Table 3. Overview of the portfolio model (Adapted from Luzzini et al. 2012)

3.3.3 Summary of Purchasing Strategies

The four-stage approach, which consist of classification, market analysis, strategic positioning and action plans, will be relevant for further analysis, since this may contribute to the choice of strategy selected for each of the suppliers. Because this analysis also investigates the market the suppliers operate in, the market structure should be discovered. The stages of this approach will be used as a framework for the analysis. See chapter 4.1 for further explanation.

3.4 Transaction Cost Analysis

Transaction cost analysis concerns the management of exchange transactions in a way that minimizes the production costs and the transaction costs (Joshi and Stump 1999). Arrow (1969) defines transaction costs as the “costs of running the system” (Heide 1994). These transaction cost contains all costs connected to the exchange, and will include both the ex ante costs and ex post costs (Rindfleisch and Heide 1997). Ghosh and John (1999) add to this explanation that ex ante costs are occurring before a contract is signed, such as costs of negotiations. While ex post costs are connected to monitoring of the agreement. The idea is to find a governance structure that provides us with the lowest associated transaction cost, and to reveal if the transaction should be performed internal in the organization or be outsourced in the market (van Weele 2010a). Transaction cost economics originates from Ronald Coase (1937), but it was not until about 40 years later his theories received attention thanks to the work of Oliver E. Williamson. Coase (1937) proposed that under certain market conditions the cost of pursuing economic exchange and transactions might exceed the cost of organizing the exchange within the company.

3.4.1 Transaction Dimensions

There are three dimensions that together define the transaction cost framework (Douma and Schreuder 2013):

- Specific investments (SPI, also referred to as specific assets or asset specificity)
- Uncertainty/complexity of the trade
- Frequency of the trade

3.4.1.1 *Specific Assets*

Specific assets are investments done by one partner in an exchange relationship and may be done both on the buyer side or the supplier side. An example could be a supplier that implements Just-in-time technology to satisfy requirements from a valuable customer.

According to Williamson (1991) there are six main types of asset specificity:

- *Site specificity*: geographic location or co-location in a district to economize on inventory and transport costs.
- *Physical asset specificity*: investments in production of specialized component.
- *Human-asset specificity*: investments in human capital such as training, courses and “learning by doing” and in general acquisition of specific training.
- *Brand name capital*: investments in a brand name that the customers have expectations to, such as high quality.
- *Dedicated assets*: specific investments done in relationship to a particular customer, to meet their need.
- *Temporal specificity*: a type of site specificity but with time restrictions.

The level of specific assets made in connection with the supplier is a good indicator of how critical the relationship is and for whom the need for safeguarding is most important. If suppliers have made investments in collaboration with the buying firm, this can be an indication of a relationship where the supplier should seek to safeguard their specific investments. One way of safeguarding is to write a legal contract.

3.4.1.2 *Uncertainty/Complexity of the Trade*

How complex the transaction is also influence the relationship with the supplier and a high level of uncertainty is normal in decision-making. Uncertainty might be divided in two categories: environmental uncertainty and behavioral uncertainty (Rindfleisch and Heide 1997):

- *Environmental uncertainty* is connected to the surrounding of the exchange and cannot be specified in advance (ex ante). An important aspect with environmental uncertainty is mainly an adaption problem, which means that it is often very complex and difficult to establish contingency plans in a changing environment about aspects before they arise.

- *Behavioral uncertainty* is related to the difficulties of verifying the performance after an exchange (ex post), in other words a performance evaluation problem.

3.4.1.3 Frequency of the Trade

As the level of transactions increases, the higher the total transaction costs will be if the contract and conditions always needs to be re-negotiated. Williamson (1985) stated that a higher level of frequency would create a need for more encompassing governance form (Rindfleisch and Heide 1997). Because the aspect of frequency has not received much attention in empirical studies, the concept of frequency will only be discussed where found relevant in this thesis.

3.4.2 Behavioral Assumptions

Williamson stated that when behavioral assumptions are added to the transaction cost framework this makes it more realistic because people are bounded rational and may act opportunistic (Luzzini et al. 2012).

3.4.2.1 Bounded Rationality

When humans are referred to as being bounded rational, it is meant that people have limited capacity to solve complex problems, they want to solve it in the best possible way but the capacity of fully evaluate all available options and consequences are limited. Therefore, an important aspect to have in mind regarding the TCA is that people, as they are bounded rational, might act opportunistic and take advantage of a situation, but not always on purpose. People are rational, but because of the limited access to information this is called bounded rational (Douma and Schreuder 2013). When an organization buys products or services from their suppliers that are not included in their employees core competence, this is when the decision makers do not know all alternatives and have limited information. Therefore one cannot be sure that the right decision or solution is chosen. Bounded rationality will be a problem in situations where uncertainty and complexity exists (Douma and Schreuder 2013).

3.4.2.2 Opportunism and Information Asymmetry

Williamson described opportunism as “self-interest seeking with guile” and he built his version of transaction cost theory upon the assumption of opportunism (Douma and Schreuder 2013). The relationship between a supplier and a buyer could be affected by

opportunism, meaning that one of the parties passively or actively seek to exploit the relationship to their own advantage. In relationships where one party holds more information than the other (information asymmetry), this may give rise to problems both ex ante and ex post. Therefore, information asymmetry might lead to opportunistic behavior, which is much more likely to occur if there are a small number of exchange partners, such as one seller. In a market where the buying company only has one exchange partner, the likelihood for opportunism is greater, than in a market with multiple sellers. In a market characterized by competition the trading partners will be much more concerned to keep a good reputation, than to expose it to opportunism. In other words, opportunism is a problem if it occurs together with small numbers of trading partners and bounded rationality will pose a problem in environments characterized by uncertainty, and both these situations lead to transaction costs (Douma and Schreuder 2013). Three different types of opportunism has been detected (Berthon et al. 2003):

1. *Adverse selection* is a situation where one party acts opportunistic before a contract is signed (ex ante). A typical ex ante opportunistic behavior would be a person that hides information and lies about her health before signing a contract with an insurance company. This is information that is unobservable for the other party. Possible solutions to this problem would be to try and equalize the access to information and/or to shift risk to the party with the better information access (Douma and Schreuder 2013).
2. *Moral hazard*, which is a post-contractual (ex post) opportunism problem. This is a situation that might occur after the parties has agreed on a transaction, and is therefore also called a hidden action. An example might be people that try to undertake an insurance fraud, who lies to exploit the conditions in the agreement they have signed. Possible solutions to this challenge could be to enter a contractual arrangement, to increase the observability and/or establishing incentive alignment (Douma and Schreuder 2013).
3. *Hold-up*. In situations where specific investments are done in the relationship between two organizations and these specific assets cannot be redeployed with other actors, is referred to as a hold-up. If either one of these companies shows a degree of acting opportunistic and try to exploit this, they could try and renegotiate the contract and take advantage of the situation (Douma and Schreuder 2013).

3.4.3 Critique to the TCA

According to Ghosh and John (1999) some researchers are critiquing the TCA to only be based on cost-minimization calculations and not providing any insights into the strategic marketing decisions that are sourced from company specific differences. Other researchers (e.g. Hunt and Morgan 1995) state that in the TCA reasoning all competing firms will seek the same identical governance form (Ghosh and John 1999). Heide and John (1992) criticize the TCA, saying that this framework only highlights the governance of a transaction by market or by vertical integration. Additionally, they conclude that according to TCA the only way to reduce the risk for opportunistic behavior is to safeguard by vertically integrate. Other researchers have expanded this view and include more intermediary forms of governance, which are more realistic. In some situations the focal firm is not able or willing to fully vertical integrate to safeguard assets at risk, therefore “quasi-integration” can be achieved between firms by establishing vertical control (Heide and John 1992).

3.4.4 Governance Forms

According to TCA, both the production cost and the transaction cost is minimized when transactions are combined with the correct governance form (Joshi and Stump 1999). The theory is also called the “markets and the hierarchies paradigm”, because markets are replaced with more hierarchical structures when the price mechanism is not sufficient (Douma and Schreuder 2013). Put differently, Douma and Schreuder (2013) argue that there are two main types of ideal coordination, on one side is the market and on the other side is the organization (hierarchical). In real life a hybrid form of control mechanism coordinates most of the transactions (refer section 3.4.3). Overall, there are mainly three types of governance forms that relationships between two companies can be:

1. Market
2. Hybrid
3. Hierarchy

Market governance is characterized by perfect competition where the coordination mechanism control and manage itself (Heide 1994). This is also called “the invisible hand”, originating from Adam Smith, saying that price contains all the information you need to make a decision about making a transaction or not. On the other side the organization coordinates the transactions, where the governance is based on an authority structure. Organizations as governance forms occur as a solution to information problems

and can be characterized as all forms that does not use price as a coordination mechanism (Douma and Schreuder 2013). Heide (1994) defines “governance” in the same way as Palay (1984), stating that governance is a term that encompasses a framework where contracts are initiated, negotiated, monitored, adapted and terminated between a set of parties. In other words, a written agreement could be one type of governance form in a hybrid arrangement. A hybrid arrangement is sometimes also called bilateral governance, a situation where two collaborating parties both plan and make decisions together. This governance form focuses on the operational linkages between companies and the point of contact, which is the simplest way of interacting because no expensive investments need to be made for the collaboration to start (Hammervoll 2009). In such situations it is evident who controls the transactions and it is therefore usually called “the visible hand” (Douma and Schreuder 2013). Ghosh and John (1999) suggest market as the recommended governance form when two companies are focusing on creating value together. They also suggest focusing on hierarchical governance when you as a partner would like to claim some of the value created in the particular partnership.

According to Buvik (2002) it is possible to detect how the relationships between the focal firm and their suppliers should be governed based on the TCA. As mentioned earlier regarding supply chain mapping, the strength of the linkages between the different suppliers will vary. So when analyzing the relations between the focal firm and their suppliers it is important to distinguish between the three TCA dimensions (specific assets, uncertainty/complexity, frequency), because all three of them will give guidance on what is the recommended governance form. As the frequency or the specific investments increases, it is useful to do some contracting to secure the supply, and move on from market to hybrid or even hierarchy as governance form. Another important aspect is to explore buyer-supplier relationships in depth. It is important to identify which relationships that might be based a lot on trust and for which relationships the possibility of information asymmetry might be an imminent threat (Douma and Schreuder, 2013). Many people have been disagreeing with Williamson’s assumption that some people sometimes would behave opportunistic. Ghoshal and Moran (1996) argue that people will not cheat against their trading partner simply because they will not have a good feeling with themselves by doing so. They conclude that the role of trust is an important concept of TCA. If two trading partners trust each other, then a long-term relationship with mutual

profit could be established (Douma and Schreuder 2013). The concept of trust will be further elaborated in section 3.6.1.

It is crucial to pursue efficient governance of the transactions in a company. Transactions that have a high degree of asset specificity have a very high transaction cost if it is under market governance. Such transactions should be governed within the organization in the long run. If the cost of the transaction is fairly equal under different modes of government, then the most efficient mode should prevail (Douma and Schreuder 2013). Ghosh and John (1999) state that the choice of governance form is important for an organization, in order to emphasize their competitive advantage. The market structure should influence the buying firm's selection of a supplier. Therefore, identification of the market characteristics in which the firm operates is a very important task for the purchasing department, because this set the frame for the purchasing decisions (Buvik 2001). Important factors to identify are number of suppliers in the market, potential substitutes, level of specific investments and the level of dependence and bargaining power. Depending on the market structure, the recommended strategy and the role of the purchasing department will also vary. As the environment changes continuously, the companies in the marketplace change in parallel with it. It is therefore important to notice that the need for governance form might vary as well. Heide (1994) support this argument, when he states that different governance forms should be used at different stages in the relationship between two parties to promote the collaboration. Figure 7 below shows the view on transaction costs and how the recommended governance form changes as the level of specific investments increases (Douma and Schreuder 2013). Buvik (2002) also discuss bilateral governance (hybrid governance), transaction costs and specific assets.

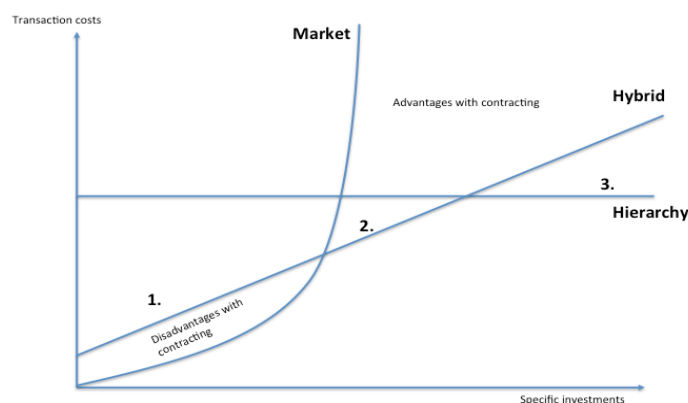


Figure 7. Governance forms (Adapted from Douma and Schreuder 2013)

A high level of transaction specific investments develops a greater need for stricter inter-firm coordination forms and contracting. Point 1 in the figure shows where the market is a sufficient governance form and where close relationships with the suppliers are not needed. In these situations a lowest possible price is usually the selection criteria for choosing suppliers, and a contract would be a disadvantage. At point 2 the company is buying more frequently and in bigger quantities from the supplier, and it has probably been made some small specific investments in the dyad. Therefore collaboration between the two parties is recommended. At a certain point in time (where the hybrid line cross the hierarchy line), it is no longer profitable to maintain a hybrid. By not vertical integrate with the collaboration partner you will lose out on many advantages (Brunvoll 2013).

According to Douma and Schreuder (2013), asset specificity and uncertainty/complexity are the two most important factors in the transaction cost theory. If the asset specificity is high for one company, but low for the other, the relationship is vulnerable for opportunistic behavior. If both companies have entered the relationship with high specific assets, both companies might get hurt if one of them act opportunistic and thus a long-term contractual agreement is preferred. Dyer and Singh (1998) argue that by strengthening the organizational ties, for example by vertical integration, one can claim the value created in the collaboration and therefore “hybrid” is the recommended form of coordination. They believe that market and hierarchy should be avoided.

3.4.5 Summary of TCA

The TCA framework is important for further analysis of the supplier relations. In order to analyze the transactions the focal firm conducts, we need to take into consideration the three dimensions: specific assets, frequency and uncertainty and complexity of the trade. The identification of these factors for each supplier relationship, together with an analysis of the market structure will help us determine suitable strategies and governance forms. This analysis will also help detect the potential risk that someone of the immediate suppliers to Axess might act opportunistic.

3.5 Resource Dependence Theory

This theory focuses on the uncertainty/risk of supply and the dependence structure that exist between the focal firm and its environment. Emerson (1962, 32) stated “power resides implicitly in the other’s dependency”, and suggested different strategies to be used in various situations to try and change the power-dependence structure in the relationships. If a substantially power-dependence relationship with a supplier exists, Emerson proposes that the company tries “balancing operations”, which:

- Reduce their interest in the resources that the specific supplier possesses, either by change the technology or substitute materials or services.
- Seek for alternative sources by introducing multiple sourcing, start producing themselves or introducing supplier development programs.

		Supplier dependent on buyer	
		LOW	HIGH
Buyer dependent on supplier	HIGH	Unbalanced	Balanced
	LOW	Balanced	Unbalanced

Figure 8. Power-dependence matrix (Adapted from Emerson 1962)

Paulraj and Chen (2007) argue that organizations engage in exchanges with their environment to obtain resources that they do not have in their focal firm. They continue by summarizing two underlying assumptions of the theory:

- Few organizations are internally self-sufficient when it comes to strategic and critical resources.
- Firms seek to reduce the uncertainty and manage the dependence relationships by establishing links with other firms (inter-firm relationships).

By combining the resources of one company with the resources of another company, together these organizations may lead to a sustainable competitive advantage as long as the resources (might also be skills or knowledge) are complimentary. Organizations should focus on cooperation and coordination of their relationships with suppliers in the supply chain in order to create mutual benefits that they would not be able to achieve alone

(Paulraj and Chen 2007). Another important aspect of this theory is to not become too dependent on wrong suppliers.

3.5.1 Interdependence

Pfeffer and Salancik (1978) discuss dependence and interdependence and state that interdependence exists in all situations where one actor does not control all of the necessary conditions to get the desired outcome of an action. They mention three factors that determines the dependence on one organization of another: (1) the importance of the resource, (2) the control over the resource and (3) availability of substitutes. The organization has become vulnerable if they have become too dependent on certain types of resources or exchanges for its operations. By measuring the total proportion of total outputs or total inputs of the resource, this can be uncovered. A company that produces only one product or provides only one service is more dependent on its customers than a company providing multiple services. At the same time a company that gets most of its supply from one supplier will be more dependent on its sources than a company that uses a multiple source of supply. The control over the resource is determined by who has the access and the possession of it. Ownership and ownership-rights are an example of this. If few actors control the resource this represents a potential situation of dependence, since a resource that is not important to the company cannot create dependence. Pfeffer and Salancik (1978) continue by saying that for a company to have a power advantage over another company, there must be an asymmetry in the exchange relationship between the two organizations. If the supplier differs a lot in size or if the proportion of the exchange is much greater than the exchange is for the other company, then there is dependence asymmetry. A large company might use small suppliers that actually supply them with 100 % of their output, making them very dependent on the larger buying company. One solution to resource dependence is to make the focal company less dependent on a single critical resource and search for multiple sourcing on a critical resource exchange (Pfeffer and Salancik 1978).

3.5.2 TCA and RDT Connection

According to Heide (1994) TCA and RDT both see the nonmarket governance forms as a solution to environmental uncertainty and dependence. Buvik and Reve (2002) build upon this statement and provide a matrix where the dependence in TCA (specific investments) is connected with the term of structural power from RDT. The term structural power contains

the meaning of dependence, as well as aspects of buyer concentration and market power (Buvik and Reve 2002).

Specific assets mainly on:	Substantial Supplier power	Substantial Buyer power
	Buyer dependence	Supplier dependence
Buyer side	Modest contractual protection Risky for buyer	High contractual protection Efficient relationship
Supplier side	High contractual protection Efficient relationship	Modest contractual protection Risky for supplier

Figure 9. Connection between TCA and RDT (Adapted from Buvik and Reve 2002)

If the specific assets are mainly deployed on the supplier side and the buyer has a low bargaining power, then there is an efficient relationship. This is because it is the supplier that has deployed the specific assets and has the market power therefore the need for contractual protection also lies with the supplier. If the buyer on the other hand has a high bargaining power and it still is the supplier who has deployed the specific investments, then this is a very risky relationship for the supplier (Buvik and Reve 2002). The RDT states that companies need to choose the most suitable governance form in order to take control over critical resources and avoid uncertainty.

Another aspect about dependency regards multiple or single sourcing of a certain resource. In some situations (monopolistic) the buyer has no choice, at least if there are no available substitutes for a service/product/material. The nature of the product/service and the market surrounding the transactions are influencing the choice of sourcing method. Buvik and Andersen (2011) investigate the effect on sourcing strategy, together with the employment of specific investments. They argue that when specific investments are deployed on the supplier side, this will be guiding for the choice of sourcing strategy. Their findings indicate that multiple sourcing actually acts as a safeguarding mechanism in the buyer-supplier relationships where there are done substantial specific investments. By using more than one supplier this also reduces the threat from opportunism among suppliers.

Sourcing strategy:	Asset specificity on Supplier side	
	LOW	HIGH
Multiple sourcing	Monopolistic competition	Hybrid, Bilateral monopoly supported by competition
Single sourcing	Competitive market	Bilateral monopoly

Figure 10. Sourcing strategy and SPI (Adapted from Buvik and Andersen 2011)

3.5.3 Critique to RDT

Some of the criticism that RDT has received is related to the work of Pfeffer and Salancik (1978), because the concept of resource dependence received public awareness through their contributions. Nienhüser (2008) sum up some of the critiques of the theoretical foundation of RDT. One objection to the theory is the lacking focus on economic, cost and efficiency factors to explain company behavior, and that the only focus is on power structures. Pfeffer and Salancik (1978) is criticized for spending too little time on justifying why organizations should be seen as political systems instead of economical systems. There have also been some reactions about the theory being based on a too narrow concept of power and the controlling of material resources. The theory is misused if one interprets it in a too materialistic or objective way and if one over or under estimates the existing resources that lead to dependency or power advantages.

3.5.4 Summary of RDT

Based on RDT our analysis needs to include an evaluation of the power-dependence situation in the supplier relationships. Meaning that this must include an evaluation of multiple and single sourcing of specific resources, searching for available substitutes of critical resources. Overall, potential existing uncertainty surrounding Axess and their selected suppliers should try to be reduced.

3.6 Relational Contracting Theory

Relational Contracting Theory is representing the government form in exchange relationships where a set of relational norms acts as a governance mechanism instead of more formal contracts (Lusch and Brown 1996). Heide and John (1992, 34) define norms as “expectations about behavior that are at least partially shared by a group of decision makers”. This normative structure has shown to work as a government mechanism in individual exchange relationships between firms. Heide and John (1992) refer to this phenomenon as supportive norms, while they state that Ian R. Macneil (1980) referred to it as relational norms. Lusch and Brown (1996, 19) refer to Wilson (1941), and emphasize that interfirm relations might be represented as “very personal, long-term, bilateral agreements” where normative contracts are the dominating government form. Those normative contracts can be described as mutual expectations and common understandings between channel partners, in contrast with the TCA that has an underlying behavioral norm of opportunism. On the other hand, the critics of TCA state that opportunism is the exception rather than the rule in exchange relations (Heide and John 1992). Jeffries and Reed (2000, 874) state “relational contracts are agreements that are intentionally incomplete so that the contracting parties have room for maneuver”. In other words the possibilities for bounded rationalism exists, and even though the objective is to cooperate, one must be aware of the risk of opportunism. Therefore, the importance of trust is stressed, which it would not be any need for if risk did not exist.

3.6.1 Trust

Previous research on the relationship between buyers and suppliers indicate that trust is an important factor, but it is seldom specified why. The market has shifted from price-oriented bidding processes, where the suppliers competed against each other, to cooperation between the buyer and the supplier. In other words, the unit of analysis has shifted from single firms to dyads, or networks of firms. One of the reasons why this topic has been difficult to discuss is because it is challenging to define and thus difficult to measure.

Stuart, Verville and Taskin (2012) use a definition of trust that is supported by many other researchers, such as Ring and Van de Ven (1992), Barney and Hansen (1994) and Villena et al. (2011). This definition is as follows (Stuart, Verville and Taskin 2012, 394):

Trust can be defined as one party's belief that the other party in the relationship will not act opportunistically and not exploit its vulnerabilities even when such exploitation would not be detected.

In other words the purpose of trust is to replace other governance mechanisms that are much more costly, such as legal contracts, quality control and time consuming communication. Smeltzer (1997) notes that Ring and Van de Ven (1994) state that two views of trust can be found:

1. A business view based on confidence or risk in the predictability of one's expectations
2. A view based on confidence in another's goodwill

In the business view of trust the involved parties protect itself from adverse selection and ethical hazard through safeguarding, such as contracts, guarantees and law. The second view "emphasizes faith in the moral integrity of others' goodwill" (Smeltzer 1997, 41). The establishment and nurturing of trust in buyer-supplier relationships should be consistent with a cost minimization strategy, unless the level of trust is excessive and one of the parties is tempted to opportunistic behavior due to the minimized degree of safeguarding and monitoring. If an efficient governance of transactions is maintained then this could contribute to establish a competitive advantage. Actors may use mechanisms such as price, authority and trust to govern the transactions. In transactions that must be governed by authority, the desired outcome is secured by controlling of the behavior and the input from the supplier. In order to achieve the advantages of a cooperative relationship the establishment of trust is crucial (Eriksson and Laan 2007). If the parties manage to develop a relationship based on trust and information-sharing they may be able to work toward optimal inventory positions and customer service levels, and also share procurement, reduce cost and improve quality of the products or services.

3.6.2 Strategic Distance to Suppliers

Many companies are reluctant to closely collaborate with their suppliers and to share information with supply chain members. Liker and Choi (2004) highlight the importance of partnerships in the supply network to a focal firm by referring to it as "the supply chain's lifeblood". Reality is that an increasing number of businesses are dependent upon their suppliers in order to reduce their own costs and to improve quality. To succeed in the establishments of business groups, also called keiretsu in Japanese, have been emphasized.

These business groups are built up of independent companies bound together by formal or informal ties (Douma and Schreuder 2013). Keiretsu is a form of cooperation that is usually recognizing the Japanese buyer-supplier relationships. The objective in such a business group is to closely collaborate with selected suppliers that are continuously learning, improving and prospering, creating a win-win situation for the collaboration partners (Liker and Choi 2004). This way of thinking can be closely connected to the importance of network members discussed in section 3.2. Fast growing suppliers may become a threat over time and evolve into a competitor for the focal firm, it is therefore important to try and transform supplier rivalry into opportunity.

3.6.3 Connection of RCT, RDT and TCA

To be able to describe all buyer-supplier relationships and give customized supplier strategies, TCA and RDT alone will not be sufficient to look at. Because of the critiques against TCA relating to the simplifying of norms and values, the authors find it important to include Relational Contracting Theory. The fact that long-term relationships might have an influence on the government of exchange relationships is an important aspect. Without some sort of trust Barney and Ouchi (1988) argue that a specific investment never would have been made and therefore not any transaction either (Berthon et al. 2003). Pfeffer and Salancik (1978) state that norms that have evolved over time between two parties will apply to concerns about trust and predictability.

3.6.4 Critique to RCT

Melvin A. Eisenberg (1999) published an article where he criticized the RCT. In short, his criticism was aimed at stating that RCT itself was not an own class of contract, but rather an attribute to contractual relationships. He also states that all contracts to some extent are relational, because either it exists a relationship, or one is about to be established.

3.6.5 Summary of RCT

The focus in this section has been on highlighting the importance of relational norms, the duration of the relationships and the concept of trust. For the further research it will be necessary to closely connect the most important aspects from RCT together with the RDT and TCA (as mentioned in section 3.6.3), in order to give holistic recommendations for the focal firm's supplier relations. Another aspect that is important to remember in the analysis is the strategic distance between the buyer and the suppliers. Collaboration between the

buyer and supplier may create a win-win situation, but it is essential to keep in mind that fast growing suppliers might eventually become competitors.

3.7 Theory Limitations

During the writing of this thesis the authors have spent a lot of time on finding relevant theories that can help solve the research problem. Many theories have been chosen and then rejected due to the findings of better suitable theories. Examples of the rejected theories are Porter's Five Forces, Resource-Based View and The Relational View. At first Resource-Based View was considered since it took into the account the internal resources, and how they could affect the competitiveness of the company. The Relational View was considered as an alternative to the Resource-Based View, since this was based on both Porter and the Resource-Based View and further developed. It was decided that this were a better suited theory due to the relational aspects of the thesis, but then it was found that Kraljic's classification and market analysis (stage one and two) covered most of the aspects of Porter. In the end it was decided that the Relational Contracting Theory were more suitable for answering of the research problem.

In addition, the authors have also needed to put constraints on the chosen theories. The time schedule available has led to limitations on some of the theoretical aspects. In Kraljic's purchasing strategy the authors have decided to only focus on the supplier matrix, and not the product/service matrix. Kraljic (1983) noted that only the strategic supplier should be analyzed in stage two, three and four, but due to the low number of suppliers it was decided to analyze all of them in this thesis. This was also done in order to give recommendations in the end. The use of power in a buyer-supplier relationship could have been discussed more in detail, but since aspects of this concept is found in RDT, it was excluded. The concept of conflict is reasonable to combine with the aspects of power-dependency and opportunism, but due to the time constraint it was found to not be the most important aspect of this thesis.

4.0 Research Methodology

The fourth chapter explains the research methodology. The different aspects of the method used to conduct the thesis in a proper manner are explained. Among these aspects are the conceptual model, the design, method and data sources.

4.1 The Conceptual Model

A conceptual model should illustrate how the theories can be applied in order to solve the research problem. The model gives an indication of how the different aspects of the theory can be applied in order to find a suitable strategy. The figure below shows the conceptual model for this thesis:

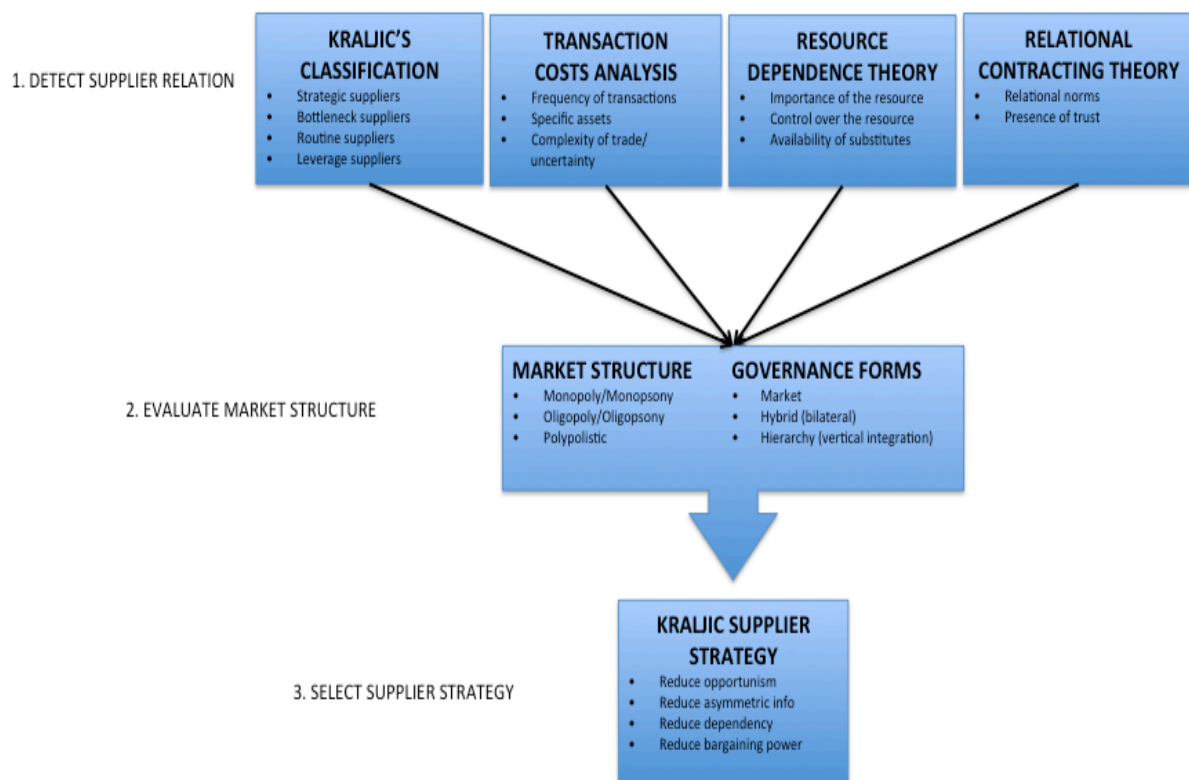


Figure 11. Conceptual model for the case study

The model shows how theoretical aspects are applied to detect the supplier relations of Axess. SNA is not a part of this model, because this theory will be applied in order to map the network of Axess to get a better understanding of which relationships Axess have. The theory of Kraljic's classification and purchasing strategies will be used as an overall

theory, where the four-stage approach will make the outline of the analysis. In the first step, the supplier relations should be detected based on Kraljic's first stage in his four-stage approach. Further, various factors from TCA, RDT and RCT, such as specific assets, uncertainty, relational norms and trust will be applied in order to support or questioning the findings from stage one. The second step is related to finding the current market structure and governance. In this step the second and third stage of Kraljic will be applied, in addition to the market structures referred to in TCA, RDT and RCT. At last, in step three the theories and the market structure will help select a supplier strategy that minimize supply risk and maximize the buying power. In this step the last stage of Kraljic is used, and the strategies for the suppliers are detected.

4.1.1 Propositions

The propositions should be formulated in such as manner that they seek to find answers to something that should be examined within the study (Yin 2014). Propositions are often used in addition to the research questions in order to solve the research problem. The propositions for this thesis is listed below:

P1: Axess AS is highly dependent on individual suppliers.

P2: Axess AS faces sufficient bargaining power in its relationship with individual suppliers.

P3: The current purchasing function takes no account of market structure.

P4: The current purchasing function leads to a short-term perspective in supplier selection.

4.2 Research Design

A successful research should be based on appropriate methods in order to answer the research problem in a proper manner. First of all it is important to find a research design that fit the purpose of the study. Gripsrud, Olsson and Silkoset (2010) states that research design involves the description of how the analysis process should be planned and executed, in order to solve the research problem.

A structured research design is needed to make the research as efficient as possible, with maximum outcome and minimal use of effort, time and money (Dhawan 2010). The main purpose of this study is to find how the relationships between Axess and their suppliers are

managed and then recommend strategies that can improve the overall purchasing function, thus the nature of this study is explanatory. The emphasis in explanatory studies is to answer why or how certain events occur, in addition to engaging in causal reasoning (Yin 2012). The research design must be flexible to provide opportunity for considering various aspects of a problem, and it should also minimize bias and maximize the reliability of the collected and analyzed data (Dhawan 2010).

This study has a qualitative approach with qualitative data collection methods, because this is more useful when investigating how people interpret their experiences and what their decisions are based on (Merriam 2009). Our research will be based on data collected from interviews with employees in the case company and from some of the most important suppliers. Some quantitative aspects regarding sales and purchasing numbers will be performed, in order to support the qualitative analysis of the supplier relationships and the dependency aspects.

4.2.1 Unit of Analysis

When conducting a case study there are two important factors that need to be considered. First, one needs to place the case study in an appropriate research literature and second, to define the unit of analysis in order to identify the criteria for selecting and screening interesting variables (Yin 2003). In this study the unit of analysis will be the linkage between Axess, as the focal firm, and some of their most critical first tier suppliers, as shown in figure 2. The unit of analysis will be linked to relevant literature and data in order to conduct the thesis in a proper manner.

4.3 Case Study Method

The case study method has been defined by several different researchers, and in this thesis the definition by Robert K. Yin (2014, 2) will be applied:

An empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

In other words the case study can be described as the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances (Robert E. Stake 1995, XI). As mentioned above the nature of this case study will be explanatory, and Yin (2014, 238) defines an explanatory case study as:

An explanatory case study is a case study whose purpose is to explain how or why some conditions came to be (e.g., how or why some sequence of events occurred or did not occur).

The process for conducting a case study is usually the same process as for other research methods. It consists of planning, collecting the data, analyzing the data and convey the findings (Neale et al. 2006). This process will be used in the layout of this thesis.

One of the reasons why a case study is an appropriate method is that it presents the story of something unique, special or interesting, such as the story behind the results. These stories are often used to provide information that complements other data, in order to create a more complete picture of the situation (Neale et al. 2006).

4.3.1 Advantages and Disadvantages

When using the case study method, similar to all other methods, it is important to be aware of its advantages and disadvantages. One of the most obvious advantages, as mentioned above, is that the case study method provides information that other methods do not. This method also allows the researchers to use multiple methods to collect the needed data (Neale et al. 2006). The case studies often provide more details regarding the data and the situation, which often entails a lengthy thesis. Therefore it is important that the authors of case studies consider what information is useful and provide the reader with a deeper insight in the study (Neale et al. 2006).

Yin (2014) also provides several advantages and disadvantages of using case studies. One of them is that the case studies may lack credibility due to the researcher's bias, where the researcher may already have set out the results before the research is done. Another disadvantage about case studies is that the findings in a case study research cannot be generalized. Within this disadvantage Yin (2014) states that it is necessary to separate analytic generalization from statistical generalization. Analytic generalization is defined as follows:

Analytic generalization is the logic whereby case study findings can extend to situations outside of the original case study, based on the relevance of similar theoretical concepts or principles (Yin 2014, 237).

While statistical generalization is defined as:

Statistical generalization is the logic whereby the findings from a sample are claimed to apply to its universe, usually involving some statistical inference; not usually relevant for generalizing from case studies (Yin 2014, 240).

By applying analytic generalization instead of statistical generalization, one should be able to generalize based on a single case study. At last, it is noted that if a case study is conducted in a poorly manner, then the “preceding caveats can come together in a negative way, potentially recreating the prejudice against case study research” (Yin 2014, 218). Otherwise, if a case study is conducted properly then the preceding caveats may be overruled.

4.4 Data Collection

After the research problem and questions have been defined, it is important to collect relevant data. There are two main types of data that needs to be collected – primary and secondary data. The methods used to collect these types of data differ since the primary data are collected for the first time, while the secondary data have been collected beforehand and for another purpose. Both types of data sources are relevant, and to search for potential input both internal and external in the case company. Figure 12 give an overview of the data sources used in this research.

	Internal	External
Primary Data	<ul style="list-style-type: none"> • Interviews with employees 	<ul style="list-style-type: none"> • Interviews with suppliers
Secondary Data	<ul style="list-style-type: none"> • Total list of suppliers • List of top 10 suppliers • Historical purchasing data • Other internal documents 	<ul style="list-style-type: none"> • Proff Forvalt • Journals and articles • Books

Figure 12. Data sources of this study

4.4.1 Primary data

Primary data can be defined as “those data, which are collected afresh and for the first time, and thus happen to be original in character” (Kothari 2004, 95). There are several methods for collecting primary data, and the most important methods are based on observations, interviews, questionnaires, consumer panels and schedules (Dhawan 2010).

4.4.1.1 Interviews

In this case study it was important to uncover the experience to the employees in Axess and identify any areas that needed special attention. It was therefore determined that the main data collection method should be to conduct interviews with key personnel in the case company. Personal interviews are important for collecting internal information and aspects that will not be accessible by using other methods. Such interviews are recommended when someone’s experience, opinion and perception is of importance (Gripsrud, Olsson and Silkoset 2010).

Early in the research phase we were in great need of collecting as much information as possible about the case company and the market they operate in, since we had limited knowledge in this area. We began this phase by writing down all questions we had and then structured them in an interview guide. We then conducted an in-depth interview with the Procurement Manager, lasting for two hours. One of the authors had the responsibilities for the conversation and asking of the questions, while the other author took notes.

The internal interviews were conducted with employees in different departments and functions, in order to get the most relevant information from the people that actually have continuously contact with the selected suppliers. As we were proceeding with the data collection we soon identified that there were actually not that many employees in Axess that have regular contact with the suppliers. So, in order to get a somewhat more solid analysis and additional material to work with, it was also decided to conduct interviews with some of the most important suppliers to Axess. Based on the list with the 10 most critical suppliers to Axess, we received the suppliers contact person in Axess from the Procurement Manager in Axess. For two of the suppliers there was no information about contact person, and when we sent a request about the contact information to the Axess employee who is responsible for these suppliers he did not respond. These two suppliers

did only have a national office in Norway, and it was assumed that Axess did not have any dedicated contact persons for those two companies. Since we wanted to collect detailed information about the specific relationship between the suppliers and Axess, we decided to try and contact the other eight suppliers first and sent them an email with an invitation to participate in the data collection of our master thesis. As expected many of the employees and the suppliers were difficult to get ahold of. A lack of time and stressful working days for the employees is probably why some of the suppliers did not respond. Four of the suppliers responded very quickly, and the time for the telephone interview was scheduled. We also sent an email invitation to the employees internal in Axess, to explain to them what we wanted them to participate in. There were in total identified 14 employees that had supplier contact in Axess, where two was on maternity/paternity leave and therefore excluded as possible respondents.

It was important for the progress of our thesis that we talked to as many respondents as possible, and that we gathered information and data about all of the suppliers. Overall, the plan was to interview five of the suppliers and 15 internal employees. We ended up with interviewing three suppliers and six Axess employees, which gave us a response rate of 38% for the external interview and 50% for the internal interviews. According to Blaxter, Hughes and Tight (2010) interviews can be conducted face-to-face or over distance, such as per telephone or email. All interviews with the suppliers were conducted over telephone due to their geographical location. For the internal interviews we had three face-to-face, two answered via email (due to their lack of time to personally meet us) and one were conducted over telephone (due to his geographical location).

Both the internal and external interviews were conducted as semi-structural interviews. While structured interviews are very strictly following an interview template, other interviews are very open-ended and more like a discussion (Blaxter, Hughes and Tight 2010). We decided to use semi-structural interviews because then we had the possibility to determine in advance what we wanted to talk about and what our objective with the interviews was. We followed a certain structure in the interviews and the questions were predetermined. When working on the interview templates, we chose to start up with some simple questions at first, to “warm up” the respondent. The more detailed questions were put in later on in the interview. This proved to be a good way to start the conversation. The respondents were given time to think through the question first and then respond. We tried

to avoid questions that could be answered with a simple yes or no, and we had follow-up questions ready for almost every question if the respondent did not start to elaborate on the topic himself. If the respondent started to talk about a topic we wanted to know more about, we could freely ask questions that was not initially in the interview template.

The external and internal interview template can be found in full text in appendix 2 and 3. We wanted to structure the interviews based on the theories we were going to use in the thesis, therefore we decided upon questions that could easily be transferred to the theory. By doing this, it helped us to structure the analysis and placing the respondents' answers in the relevant parts of the literature.

4.4.2 Secondary data

The secondary data are “those which have already been collected by someone else and which have already been passed through the statistical process” (Kothari 2004, 95). Secondary data have been used for a different purpose, and might not be suitable for other studies. Gathering this sort of data is usually quicker and more effective than gathering primary data, but it is difficult to avoid the weaknesses that may occur when collecting this type of data. As long as oneself has not collected the data, one cannot be sure that there have not occurred mistakes during the process. This could be manipulation of the data, reorganized data in order to get the wanted results, or the bias of the researchers has influenced the data.

It is often a good idea to start with identifying of the available secondary data sources, since it is often easy available and less time consuming to get ahold of. In the writing process of this thesis we have used different kind of secondary sources. Especially important has the information that we got from Axess been to us. We received their total list of suppliers, as well as a list with the 10 most critical suppliers to them. We got access to the purchasing numbers spent on each supplier, in addition to the historical purchasing numbers for the last three years.

Another important secondary source has been the Norwegian webpage Proff Forvalt (www.forvalt.no) that is available for students at Molde University College. We were able to collect some complementary demographic variables for the suppliers, such as the

number of employees, and most important of all we were able to gather the total revenue from the last years of operation to be included in some calculations.

Further on, we searched for relevant data sources regarding supplier strategies and supplier selection in a service supply chain. Most of the available books and articles mainly discussed these themes in a manufacturing or production supply chain. Some articles mention the differences between a manufacturing and a service supply chain, but since this discussion is not applicable in our research problem, we decided not to define the differences in the thesis. At first the plan was to establish a portfolio for Axess, which would help them categorize their suppliers and then draw up suggestions for strategies towards each of the supplier categories. But as we continued to search for literature and read relevant articles, we soon recognized that the analysis and the data collection we were about to do would require more time than the available time span of the thesis. Axess had written a procedure for evaluation of suppliers and had classified their suppliers with a criticality from 1 to 3. Therefore we chose to focus on giving recommendations regarding the supplier strategies for their top ten most critical suppliers. A part from this, many different books, chapters and articles have been read and are continuously cited throughout the thesis.

4.5 Quality of Research

When conducting a thesis it is crucial that the quality of the research is evaluated, and a way to detect this is to evaluate the reliability and the validity. The choice of methodology is important, because the right research design will strengthen both the validity and the reliability of the research. These terms are often used when considering how good the measure of one or more phenomena is (Gripsrud, Olsson and Silkoset 2010). It is crucial to remember that even though the measurement in the research has high reliability it is not certain that it has a high degree of validity.

4.5.1 Validity

Validity regards how well you measure what one intends to measure. It is important to emphasize that validation is not a certain test or method, and that the validity of one measure may be high for one result, while low for another (Gripsrud, Olsson and Silkoset 2010). The conducted research is based on a case study where very company-specific

circumstances apply. To be able to solve the research problem we have interpreted the collected data sample of the suppliers. The list of the 10 most critical suppliers is based on the company's own criteria and experience from the industry. Unfortunately, since this is a case study with a specific research problem the conclusions and the recommendations uncovered in this thesis will not be able to generalize to other companies.

4.5.2 Reliability

Reliability can be described as to what extent one can trust that the results are consistent and trustworthy. The achieved results should be able to be tested repeatedly with equal or similar methods without large differences in the results (Gripsrud, Olsson and Silkoset 2010). In other words the results need to be verifiable in order to be reliable. As mentioned, the dataset used in this research comprises the 10 most important suppliers to Axess and the proportion of Axess purchases. In addition we obtained the suppliers total sales numbers to be able to take the analysis of the relationship a step further. As long as the numbers collected from both Axess and the public website Forvalt is accurate, the results would probably be the same if dataset were to be analyzed a second time.

4.5.3 Sources of Errors

One must always be aware of the potential sources of errors connected to the case study research. This section seeks to highlight the potential challenges encountered during the thesis, starting from the data collection through the analysis.

As mentioned in section 4.4.2, the secondary data can bring some sources of error to the research. The researchers that originally collected the data material might have done potential errors, and one usually has to accept a lower data validity than if one had collected the data itself (Gripsrud, Olsson and Silkoset 2010). In section 5.1.4.1 where the calculations of the importance of the resources are conducted, we needed to use the available numbers and figures from the public webpage Forvalt.no. This was the only webpage we were familiar with, that could provide us with all the accounting numbers for the suppliers. Unfortunately, the 2013-numbers were not published yet. So some the calculation where the suppliers total sales number are included is from 2012, while the other numbers are from 2013. It was still important for us to show this calculation in order to say something about the dependency relationship, and then link it to relevant theory. In section 5.2.1.1 in the thesis, in the discussion of net profit, we needed to use the accounting

figures from 2011 and 2012. This is because the 2013 figures are not yet published, and because we wanted to compare the numbers between the suppliers two years of operation. It is a lot that might have been changed since then, and the numbers might be biased for today's situation. In order to conduct an adequate analysis of the suppliers and the market where Axess operates, we needed to gather as much information as possible from the available data sources. We searched the Internet for relevant sources, but without any luck of trustworthy sources. The Axess interviewees were also questioned about the competition and market conditions, but many were unsure and were not able to answer us on these questions. The Brønnøysund Register Center and Statistics Norway had some available numbers about the petroleum industry, but not specifically about actors in the market and allocation of market shares.

There might also be potential sources of error connected to the primary data. According to Yin (2014) recording of interviews is a personal matter. We recorded the three internal face-to-face interviews, because this let us focus more on the process of the interview and the conversation. We refrained from recording the external interviews, due to the potential risk of some suppliers becoming anxious, and hesitate to give honest answers. We still took notes from the most important parts of the interviews, as a backup in case something happened to the recording. We are aware that some of the suppliers might have given excessively positive feedback about Axess, only to give the best impression. The interviews were conducted in Norwegian, our native language, and then translated. This was important to avoid any misunderstandings and not to miss any important notions from the interviewees.

4.6 Summary of Research Methodology

A summary of the research methodology should summarize the most important aspects that are used in this research. First of all, a conceptual model has been presented, and the steps in this model will be used as a framework for the analysis. Next the propositions are presented, and these will help the authors answer the research questions from section 1.3.1. Further it is noted that an explanatory research design will be applied in this thesis. This design is applicable since it seeks to answer why or how certain events happen. A case study method where the unit of analysis is the linkage between Axess and their suppliers seems to be a relevant method for this research. The research will mainly use qualitative

data, where both primary and secondary sources will be applied. These sources are such as internal and external interviews, journals, articles and books and historical purchasing data from the case company. Throughout the research it is important that the authors ensure that the quality of both the data and the research is as good as possible.

5.0 Analyze

In the fifth chapter the analysis is conducted. The literature from the theory review is linked to the case study in order to investigate all essential aspects.

Information from the conducted interviews show that Axess will not use Rig Access AS as a supplier in the future (Appendix 11). The main reason for this is due to competing business with SolidTech, which Rig Access AS is a part of. Former employees at Axess established SolidTech, and thus it is difficult for Axess to cooperate with them. Based on this, Rig Access AS will not be included in the analysis. The following names will be used for the remaining suppliers; Dacon, IKM, IT Nor, KAM, Onix, Vertikal Service, Vinde, WWS and Waage.

The individual sections of the analysis should not solely contribute as guidance for the final supplier strategies, but should be seen in context with the rest of the analysis. See chapter 7.1 for a final recommendation to the focal firm.

5.1 Detect Supplier Relation

As mentioned earlier in the thesis, it is important to be aware of the surroundings to the focal firm. Therefore the supply chain network is mapped, before looking into the specific theories in the first step of the conceptual model (discussed in section 4.1).

1. DETECT SUPPLIER RELATION

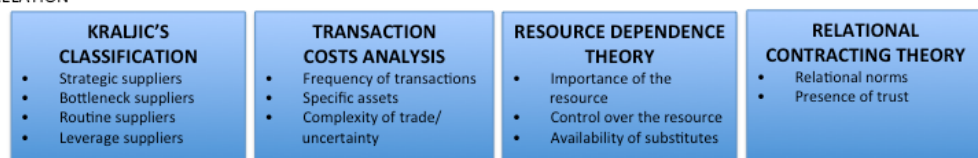


Figure 13. Step 1 of the conceptual model

5.1.1 Mapping of Axess' Network

We need to map the surroundings to the focal firm in order to identify possible limitations or undiscovered potential in the network. This process contains three important steps; to identify the members of the supply chain, to discover what processes that are linked to these members and to determine the level of integration or the strength of the link (discussed in 3.2.2).

5.1.1.1 Members of the Network

First, to identify the key members in the supply chain, it is important to distinguish between primary and supporting companies in the network. It is vital to understand that both suppliers and customers can be primary and supporting members to the focal firm, but due to the scope of this thesis we focus only on the supplier relationships (see 2.2.4 and 2.3).

Primary members are those companies that play an important part in the service delivery from Axess to the customer, and therefore have an essential role for their success. The selected suppliers in this research are critical because of their impact on the final service delivery to the customer (see end of section 2.2.4). If any of the suppliers make a mistake in their delivery of the product or service, this will influence the final service provided to the end customer. The suppliers in this network see the end-customer as the next tier after Axess, which could be companies such as Statoil and Dolphin (see e.g. Appendix 4 and Appendix 6). This tier is also where a need first arises and a purchasing order is initialized (see e.g. Appendix 7 and Appendix 11). At this point the service is also consumed.

Supporting members are those companies that do not contribute with any value adding activities in the service delivery to the end customer. For Axess these are the sub-suppliers that they are not directly in contact with, in addition it will also be the transporting and software suppliers that do not contribute with value-added. Examples of this would be the supplier of office supplies and the financial institution that provide Axess with insurance, payroll and payment solutions (see 2.2.4 and 3.3.1). It is important to know that at the point-of-origin there will exist no primary suppliers and at the point-of-consumption is where the end customer is. To get a structured overview of this it is beneficial to make an illustration.

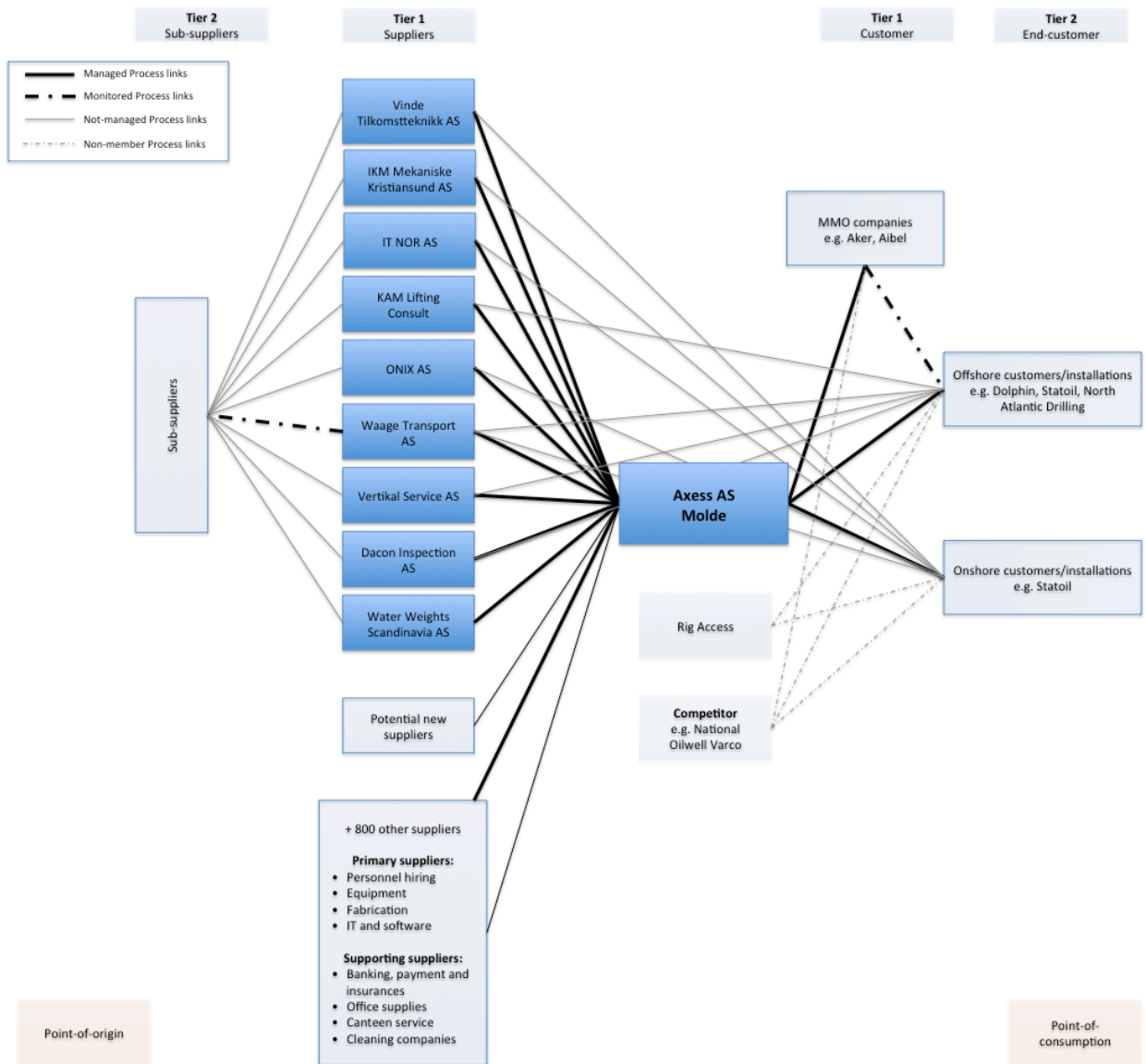


Figure 14. The supply chain network of Axess (Based on Lambert et al. 1998)

The most critical suppliers are found in “tier 1 suppliers”. It is assumed that all of the suppliers have their own sub-suppliers, either of greater or lesser importance for the service delivery of Axess. A need for a service or a product arises at the tier with the end customer who operates or owns an installation onshore or offshore. They issue a PO, which is sent to either an MMO company (e.g. Aibel), to a service providing company such as Axess or directly to one of Axess’ suppliers. Since many of Axess’ suppliers are able to deliver directly to the end customer, this will be a crucial threat to have in mind. Sometimes Axess works as an intermediary, for quality control and assurance, when they receive a PO from a customer where they want Axess to buy a product for them, such as a pump or a filter.

5.1.1.2 Dimensions of the Network

If all tiers, including all existing suppliers and customers were to be included in the network the structure would be very complex. Potential and existing suppliers are numerous, mainly because Axess have not had a clear strategy for supplier selection and have multiple sourcing in most of the supplying situations. The number of customers are also many because of Axess being a company that provide services in many different business areas. In other words, the supply chain structure for Axess can be described as having a wide vertical range and with a focused horizontal range (few tiers). It is important to remember that a supply chain consisting of too many (vertically) first tier customers and suppliers, as in Axess's case, will restrict the focal firms ability to effectively allocate their resources beyond this tier.

5.1.1.3 Business Process Links

The different links between the key companies in the supply network are of various strength and type. To help us decide the link strengths we look at the four dimensions that according to SNA should be investigated:

Similarities. One objective for Axess is to develop a network of suppliers around their different offices in Norway (Appendix 7). It is important to establish cooperation with suppliers that are collocated with the focal firm, because this makes the monitoring and the follow-up of the project progress easier (Appendix 7). It is also important for Axess to visit the supplier now and then, and therefore location is of importance. This is essential for the fabrication and manufacturing companies, such as IKM that are located close to the Axess' warehouse in Kristiansund (Appendix 9). The knowledge about the local marketplace and the degree of personal contact are important aspects in many of Axess' cooperation with local firms. The geographic location of the branch office of Waage has also been of importance to Axess (Appendix 8).

Relations. Some of the linkages are defined as pure competition while others are characterized by friendship. Vinde said that they could thank Axess for much of their success, and stated that they had been totally dependent on them the first couple of years of operation (Appendix 6). A good personal contact is often of great importance when a good cooperation and long term relationship is desired. This is mainly the reason why IKM is selected as a supplier repeatedly (Appendix 9).

Interactions. Some links might not represent any transaction (a sale or a purchase), but only communication. The search for more market knowledge and alternative substitutes is often an important focus for managers. The relationship between sub-suppliers and their suppliers are a link that needs attention from time to time. In case of scarce resources the focal firm have to monitor this relationship and be prepared in the event of capacity constraints or a lack of available resources. Regular communication is necessary with the personnel hiring companies that only have a certain availability of resources. A purchasing decision will always be based on availability and price (Appendix 10).

Flows. Sometimes a link might be characterized by the flow of information and ideas, while others by a flow of material and money. The link between Axess and IKM is characterized by a knowledge and information sharing flow. Drawings are shared between the two actors and modifications and updates are exchanged during the project process as more details appear. IKM often give Axess feedback about better substitutes to the selected material and other aspects that might be costly or delaying the project (Appendix 9).

As we are about to see, Axess does not have control over all of the links in their network, but this is not necessary as some of the links are more critical than others.

Managed Process Links

These links are represented as the bolded lines we see in figure 14 and are mostly found in the first tier. This is links between Axess and their key network members, where a process is integrated to cope with the flow of goods, information and/or money. These companies are defined as critical for the success of the focal firm, and therefore the focal firm has a need to manage these links (see 3.2.2). It is also critical for the rest of the supply chain that these links are managed properly. The linkage between Axess and the nine most critical suppliers (Rig Access excluded) in the network is defined to have a linkage that needs to be managed. It is important that enough resources and managerial attention is allocated on these links. Axess also has managed process links with other primary members in the supply chain, but they are not a part of the research problem and therefore beyond the scope of this thesis.

Monitored Process Links

Links and relationships that not need to be managed, but closely monitored can be seen as the bold, dotted lines in figure 14. Monitoring should be done when the input from a sub-supplier to a supplier could affect the final service delivery from Axess. An example of this could be that the warehouse in Kristiansund is aware that Waage uses a sub-supplier when cargo are going by sea or air transport (Appendix 8). Axess does not have the resources to manage these links themselves and therefore leaves it up to their supplier. Another example is the linkage between the end customer and the intermediary, the MMO customer. Even if e.g. Aibel is the customer, it is sometimes Statoil who sends a PO, via Aibel and then they hire Axess to do the job. In these cases Axess is often concerned about Statoil's satisfaction, not only Aibel's.

Not-Managed Process Links

These links are relationships that the focal firm is not actively involved in, or not critical enough to monitor, and can be seen as the thin drawn line. Axess trusts the other members in the supply chain to manage these relationships. Usually these are transactions that are not critical enough to monitor, and with many substitution alternatives. An example could be a supplier of office supplies, and that Axess trusts them to find alternative ways to deliver ink cartridge to their offices when they are needed.

Non-Member Process Links

It is also important to be aware of connections with other supply chains, seen as the thin dotted lines, especially if a competitor uses the same supplier or deliver to the same customer as Axess. These connections might influence Axess' daily operation and makes it possible to see the bigger picture of the competitive situation in the network. Some of the customers to Axess take direct contact with some of the suppliers, and it is important to monitor if the competition becomes too fierce. As mentioned earlier, this was what happened to Rig Access AS.

5.1.2 Kraljic's Four Stage Approach – Stage 1

In order to find relevant strategies for Axess' suppliers, the four-stage approach needs to be conducted.

5.1.2.1 Classification

In the first stage of the approach the suppliers are classified based on the two dimensions; importance of the purchase and complexity of the supply market. As mentioned in section 3.3.1.1 the categories are based on the dimensions in the following way:

- Strategic suppliers are high in both dimensions
- Bottleneck suppliers are low in profit impact but high in supply risk
- Leverage suppliers are high in profit impact while low in supply risk
- Routine suppliers are low in both dimensions

By using the total cost of external purchases in Axess, which is 147 MNOK, we can investigate if the suppliers are responsible for a large amount of the total purchases or not. As mentioned in the beginning of the thesis, Axess has 10 suppliers who are responsible for approximately 46 MNOK, which in average is 4,6 MNOK per supplier per year. This is an extremely high number, and for further analysis it is assumed that a supplier with sales to Axess above 2,3 MNOK, or 1,56 % of the total share can be characterized with high profit impact.

Company Name	Annual Sale From the Supplier to Axess 2013	Total External Purchases Axess 2013	Share of Total External Purchases Axess 2013
Dacon Inspection AS	kr 3 592 517	kr 147 000 000	2,44 %
IKM Mekaniske Kristiansund AS	kr 3 069 874	kr 147 000 000	2,09 %
IT Nor AS	kr 2 164 255	kr 147 000 000	1,47 %
KAM Lifting Consult	kr 4 626 646	kr 147 000 000	3,15 %
Onix AS	kr 286 809	kr 147 000 000	0,20 %
Vertikal Service AS	kr 5 421 977	kr 147 000 000	3,69 %
Vinde Tilkomstteknikk AS	kr 3 363 542	kr 147 000 000	2,29 %
Water Weights Scandinavia AS	kr 2 497 073	kr 147 000 000	1,70 %
Waage Transport AS	kr 1 362 519	kr 147 000 000	0,93 %

Table 4. Suppliers share of total purchase in Axess

Based on the table above, it is noted that Dacon, IKM, KAM, Vertikal Service, Vinde and WWS have high profit impact on the purchases in Axess. In addition, it is beneficial to investigate how often the suppliers are used and what the average sales to Axess are.

Company Name	Frequency 2012	Frequency 2013	Average Payment per Purchase 2012	Average Payment per Purchase 2013
Dacon Inspection AS	1	39	kr 19 125	kr 92 116
IKM Mekaniske Kristiansund AS	11	40	kr 76 227	kr 76 747
IT Nor AS	35	58	kr 38 400	kr 37 315
KAM Lifting Consult	19	26	kr 174 999	kr 177 948
Onix AS	35	21	kr 4 210	kr 13 658
Vertikal Service AS	78	63	kr 81 555	kr 86 063
Vinde Tilkomsteknikk AS	81	56	kr 69 797	kr 60 063
Water Weights Scandinavia AS	42	74	kr 23 497	kr 33 744
Waage Transport AS	323	392	kr 3 510	kr 3 476

Table 5. Frequency of purchases

Table 5 shows that there was an increase in frequency for almost all suppliers in 2013, except for Onix, Vertikal Service and Vinde. Only a few of the suppliers have large differences in their average sales to Axess from 2012 and 2013. IT Nor, Onix and Waage have the lowest share of total external purchases in table 4, in addition to low average sales to Axess in table 5. Axess has an extremely high number of purchases from Waage, but due to the low average sales they are not considered to have a high profit impact. If the two tables are combined it seems adequate to categorize Dacon, IKM, KAM, Vertikal Service, Vinde and WWS as suppliers with high profit impact.

As mentioned in section 3.3.1.1, Kraljic noted that the supply risk is influenced by six factors that will be elaborated for all nine suppliers. Since only three of the suppliers were interviewed and the internal interviews do not cover enough of the needed information about the suppliers, there are certain aspects of the relations that lack information (see chapter 4.5.3).

Market Structure

In order to determine the market structure the typology of markets by van Weele (2010a), which were presented in section 3.3.1.1, is applied. Due to lacking information about the

markets the suppliers operate in, some assumptions about the competitiveness have been made. Since both Axess and their competitors and Statoil and their competitors use these suppliers, it seems adequate to assume there are many buyers in all of the industries. There are four suppliers who are hiring out personnel within the list of top nine critical suppliers of Axess, which shows that these suppliers deliver important services to Axess. Further it is assumed that Axess is using the majority of suppliers who offer NDT and RAT in the market, since these services lead to value-added activities. Thus it seems reasonable to place these suppliers within supply-side oligopoly. WWS note that there are few competitors in the market that are able to compete against them since WWS have a different business area than the main business areas of the competitors (Appendix 5). Therefore, WWS should also be placed within supply-side oligopoly. At last, it is assumed that IT Nor, Onix, Waage and IKM have many competitors in the market since their services are less critical and more standardized. Based on this they should be placed within polypolistic competition. This gives the following placement according to van Weele's typology:

	One Buyer	Few Buyers	Many Buyers
One Supplier			
Few Suppliers			Dacon, KAM, Vertikal Service, Vinde, WWS
Many Suppliers			IT Nor, Onix, Waage, IKM

	Demand-side stronger than supply-side
	Demand and supply more or less in balance
	Supply-side stronger than demand-side

Table 6. Typology of market structures (Based on van Weele 2010a)

The table above shows that the majority of the suppliers are stronger than Axess, while IT Nor, Onix, Waage and IKM are operating in markets where the demand and supply are balanced.

Supply Scarcity & Material Substitution

The difference between this section and the section above is that now we also consider the quality of the offered services, and not only the number of buyers and suppliers in the market. The market suffers from supply scarcity if the demand is larger than the supply. Many of Axess' suppliers operate in industries characterized by strong competition and many providers of the same services. Based on Axess' needs one might say that there exist supply scarcity since only one or a few suppliers provide services with the sufficient quality. WWS (Appendix 5) stated that "they would turn every rock in order to deliver to Axess", while Axess (Appendix 8) stated that WWS was the sole provider of their services in Norway. This explains the close cooperation between the two companies, and due to this and the quality of the provided services it may be stated that there exist supply scarcity for the services WWS offer. There are also supply scarcity for the services KAM offer, and Axess is trying to find substitutes for this supplier in order to increase capacity (Appendix 10). It may also be stated that the other personnel-suppliers also suffer from supply scarcity due to the required level of skills, expertise and quality on the hired personnel.

Material substitution simply describes the difficulty in finding substitutes to the products/services, and also the degree of customization. As noted in the section above, it is clear that all of the nine suppliers more or less have available substitutes. A challenge may be the established relationships between Axess and their suppliers. This is the situation with IKM. One employee in Axess notes that it is fairly easy to find substitutes for them (Appendix 10), while another one (Appendix 9) state that it is difficult to find substitutes for IKM's services due to their knowledge of Axess. It will further in this analysis be assumed that there is no supply scarcity of IKM's services, but a lack of good enough services. IT Nor has one person in the company who have internal knowledge about Axess, and usually fixes all their problems (Appendix 12). Axess recently began cooperating with a different software-provider in order to create a better-suited database (Appendix 11), and IT Nor might not be used as much after the new software is ready. The existing relationship with IT Nor is expensive for Axess, in terms of consultancy-charges, but on the other hand Axess gets the needed help immediately. For Onix and IT Nor, who both deliver IT-systems and services, there are many suppliers and buyers in the market. It is a high demand for their services, but the competition is also high. Suppliers that are of the right size and geographically located nearby are of importance here, because this will increase the availability of supporting personnel. Axess also mentioned their good

relationships with Waage, who are extremely flexible in terms of pick-ups and do not charge for express delivery if the goods can be picked up on an already planned route (Appendix 8). Waage operates in a market where it is difficult to develop these services in a way that makes it difficult for competitors to imitate them, thus the buyers should select suppliers based on price, delivery terms, flexibility and relations.

Logistics Complexity

The complexity of the logistics can be described by the needed or required after-sales services. In general it is difficult to measure the logistics complexity of services, since the consumption takes place simultaneously with the delivery. Because of this it is rarely required any after-sales services of the delivered service, and the logistics complexity is generally considered to be low. The IT-companies, IT Nor and Onix, might need to be available for their customers after installation of software. New software often has bugs that need to be fixed, or the users need instructions on how to use the system. For these suppliers the logistics complexity might be characterized as high. The other suppliers, such as KAM, Dacon, Vertikal Service and Vinde, who hire personnel to companies such as Axess, does not have a high logistics complexity. The services provided by the hired personnel might need to be conducted several times during the lifecycle of the offshore- and onshore installations, but this can be characterized as maintenance and not after-sales services. WWS, who rent out equipment, and Waage, who transports goods, does not have high logistics complexity either.

Entry Barriers

If the entry barriers are high or low are characterized by the cost of entering the market. It can be noted that the entry barriers are high for all of the industries that these suppliers operate in, due to various reasons. For suppliers such as IT Nor and Onix it requires that a potential new entrant develops an IT-systems that can compete against already established software. Such systems are usually expensive and time consuming to develop, and require large investments. For the personnel hiring suppliers, such as Dacon, KAM, Vertikal Service and Vinde, it may not seem like it requires large investment and that the entry barriers are low. In reality the courses needed by the personnel, such as in NDT and RAT, are extremely expensive and time consuming. In addition the RAT-certified workers need to take a SOFT-course to be allowed to work on the NCS. This costs approximately 30.000 NOK per employee and then the worker needs 800 hours of practice before level 2 of the

course is approved (Appendix 11). The equipment, such as the rope access equipment, is also expensive and must be maintained and renewed once a while. WWS has equipment for approximately 50 MNOK in their storage (Appendix 5), and during the last two years they have renewed their equipment and strive to be ahead and up to date on any improvements (Appendix 5). In order to compete against WWS, a possible entrant or an established smaller supplier, would need to make large investments. An additional barrier for new entrants is that companies, such as Axess, need to rely on their suppliers and the services they offer. If something were to happen it would lead to huge financial consequences for Axess, and thus the already established relationships with suppliers are preferred. New entrants cannot boast of their high reliability and quality, thus they are rarely chosen compared to established actors. The transportation industry is highly competitive, and it is fairly easy to find substitutes. The new entrants would first of all need to invest in trucks, or other means of transportation, which are expensive investments. But the main challenge that new entrants face is the fact that Waage has been able to establish a very good relationship with their customers. By not charging Axess for express delivery, even though they have the opportunity to do so, is one of the factors that are appreciated in a volatile industry.

Pace of Technology

Few of Axess' suppliers are affected by changes in technology. IT Nor and Onix are the two suppliers who are affected by this. The technology is constantly improving and the software needs to be up to date. Axess has a form of maintenance contract with both IT Nor and Onix, where Axess buys the new versions of software when they become available. The suppliers of IT-systems need to make sure that their services are updated and bug-free in order to function optimally. The rest of the suppliers can be characterized with a low pace of technology, even though they still need to ensure that their equipment meet the required standards set by the government.

Summary

Based on the sections above it is possible to determine if the profit impact and supply risk is high or low. Table 7 show the conclusions about the profit impact and supply risk for the nine suppliers, together with the determined categories.

Company Name	Profit Impact	Supply Risk	Kraljic's Matrix
Dacon Inspection AS	High	High	Strategic
IKM Mekaniske Kristiansund AS	High	High	Strategic
IT Nor AS	Low	High	Bottleneck
KAM Lifting Consult	High	High	Strategic
Onix AS	Low	Low	Bottleneck
Vertikal Service AS	High	High	Strategic
Vinde Tilkomsteknikk AS	High	High	Strategic
Water Weights Scandinavia AS	High	High	Strategic
Waage Transport AS	Low	Low	Routine

Table 7. Classification of suppliers

Based on table 7 it is possible to place the suppliers in Kraljic's matrix:

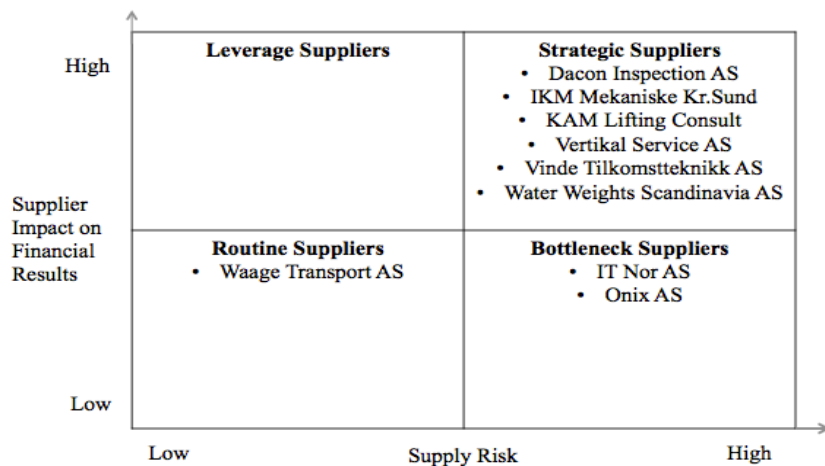


Figure 15. Kraljic's classification matrix (Based on van Weele 2010a)

5.1.3 TCA criteria

As mentioned in section 3.4.4, specific assets and uncertainty are the two most important aspects in TCA, which are elaborated here.

Specific investments

Axess has made investments in time and money to implement and learn the different IT software in Axess (Appendix 11). Both regarding IT Nor, which is the supplier of the intranet software Agresso, and Onix, the supplier of a personnel coordination program. As

mentioned in the previous section, Axess regularly invests in new updates of the software Onix provide, and the employees in the Coordination Department who uses this program daily, participate in courses held by the supplier. This is referred to as human-asset specificity. Additionally, Axess has made special adjustments to the software provided by IT Nor, to meet their own needs. IT Nor has a unique knowledge about the needs and adaptations that Axess requires in a software on a daily basis (Appendix 12). This might be referred to as dedicated assets specificity on the buyer side. It is confirmed by the internal interviewee who has close contact with the personnel hiring companies, that most of these companies have made specific investment in knowledge and competence to meet the demand from Axess (Appendix 11). The suppliers train their employees and let them participate on courses in the disciplines that are frequently demanded from Axess. It is also mentioned in an internal interview that Vinde recently has employed and recruited personnel with NDT and RAT competence, which is assumed to be in relation to the demand from Axess (Appendix 7). In appendix 8 it is said that Axess has a regular dialogue with Waage about procedures and how Axess want a transaction to be carried out. Axess has also set guidelines regarding ordering and tracking that Waage must obey. These specific assets are investment in time consumed from adapting how to do it the way Axess requires. WWS stated that they renewed their equipment base two years ago, and stated that this was a specific investment related to Axess (Appendix 5). IKM has made adjustments to meet the requirements Axess has set regarding the documentation and designing phase. They have also started to use extra storage space because of Axess and the need for testing the parts or products before sending them to the Axess warehouse (Appendix 4). It is assumed that the asset specificity that IKM has done, has a larger financial impact than the suppliers that “only” have invested in learning new ordering procedures.

It can be argued that all of the personnel hiring companies in this research have made specific investments in connection to their relationship with Axess. But these investments, considered in a larger perspective, might be seen as competitive moves to meet the demand in the market, rather than specific investments directly related to Axess. Even if the suppliers state that some of the investments are done in relation to Axess, this might be a potential source of error. Many of the suppliers probably communicate what they believe Axess wants to hear (see discussion in 4.5.3). Basically, many other companies than Axess

can use these resources/the specific assets. Axess is also able to turn to other suppliers in most of the situations.

Complexity / Uncertainty

Bounded rationality and opportunism is an important aspect to evaluate, when the focal firm is a service providing company depending on other people (in terms of own employees and suppliers) for their input. Uncertain and complex environments will in most cases be characterized by bounded rationality and often information asymmetry. The fact that personnel in Axess and hired personnel might act opportunistic is a very important aspect to have in mind.

There are mainly two different project types run by Axess, urgent projects and projects planned well in advanced. Some projects are more standardized, such as yearly inspections where the same item/equipment are controlled on a yearly basis (see chapter 2). Generally, it can be stated that the urgent projects experience more uncertainty than other projects, and that the larger projects experience more complexity than other.

When Axess hires personnel on projects, they do not always know what they get ex ante (section 3.4.1.2). Sometimes most of the supplier's personnel pool is booked on other projects, and Axess might end up with the least experienced personnel. Axess tries to have this aspect under control by always sending out an Axess work leader together with hired personnel and also with newly recruited Axess personnel (Appendix 11). Another buying situation characterized by complexity and uncertainty is between Axess and their supplier of fabrication (IKM) and hiring of specialized competence such as crane personnel (KAM). These transactions are done in an environment where the suppliers sometimes are more knowledgeable than the Axess employees (Appendix 10). It is therefore important to trust that the supplier is doing its best, but Axess still monitors the work of the supplier. The exchange with IKM might be classified as a typical ex post problem. When a beam is delivered according to clearly defined specifications and a particular failure of the quality control occurs, it will be difficult for Axess to monitor this, creating a higher transaction cost.

Regarding the IT-suppliers, IT Nor and Onix, the complexity in the market is high, because Axess is not able to fix problem with the software themselves. Axess is sometimes

completely dependent upon these suppliers, and their situation is vulnerable because it is only one person who holds the knowledge about the situation with Axess (Appendix 12).

5.1.4 RDT Criteria

Based on the concept of RDT, Axess lacks a self-sufficiency of necessary resources in order to deliver all projects themselves. Therefore they need to rely on their suppliers in delivering of their service to their end customers. While this is a strategic choice made on purpose by Axess, it also creates some interesting dependency aspects in their supplier relations. Since Axess is dependent upon their suppliers in order to meet the demanded output from the customers, it is crucial to investigate the power-dependence structure in the relationship between Axess and their suppliers.

The calculations in the following sections are based on sales numbers received from Axess. The categorizing of the suppliers done by Axess may contain potential bias, since the categories are large and include many different suppliers (see 4.5.3). One example of this is the IT category, which also includes purchase costs related to insurances and legal advisory services. Therefore the calculated percentage might be misleading, since we are only analyzing the IT-suppliers.

5.1.4.1 The Importance of the Resource

To investigate the importance of the resource, the total amount of purchase in each of Axess' categories should be combined with the total share bought from each supplier. In the table underneath, only the categories where the critical suppliers are situated in are included.

Category	Purchased by Axess in 2013
Personnel	kr 47 470 823
Transport	kr 2 334 716
Fabrication and equipment	kr 30 487 398
IT	kr 25 285 977

Table 8. Total purchased by Axess in different categories

If we take the supplier's annual sale to Axess and divide it by the total amount purchased by Axess (147 MNOK) and then multiply it with 100, we are able to determine a percentage that represents Axess' dependency upon the studied suppliers for each of the

relevant categories. Another calculation that is of importance is by taking the annual sale from the supplier to Axess in 2013 and divided by the annual total sales of the supplier in 2012. Then we get a percentage that shows how much of the suppliers revenue that stem from Axess, which can be referred to as the supplier's dependence on Axess. The other percentage should be viewed as Axess' dependency on the suppliers. Since the accounting figures from 2013 were not published at the time of the thesis writing, we had to use numbers from both 2012 and 2013. We are aware that this is a source of error, but at least it shows how Axess can conduct this analysis in the future (see chapter 4.5.3).

Company Name	Annual Sale From the Supplier to Axess 2013	Total Purchased in category by Axess 2013	Annual Total Sales of the Supplier 2012	Share of Total Purchases in Category Axess	Axess Share of Suppliers Total Sale
Dacon Inspection AS	kr 3 592 517	kr 47 470 823	kr 23 626 000	7,57 %	15,21 %
IKM Mekaniske Kristiansund AS	kr 3 069 874	kr 30 487 398	kr 36 582 000	10,07 %	8,39 %
IT Nor AS	kr 2 164 255	kr 25 285 977	kr 35 018 000	8,56 %	6,18 %
KAM Lifting Consult	kr 4 626 646	kr 47 470 823	kr 18 123 000	9,75 %	25,53 %
Onix AS	kr 286 809	kr 25 285 977	kr 13 862 000	1,13 %	2,07 %
Vertikal Service AS	kr 5 421 977	kr 47 470 823	kr 24 359 000	11,42 %	22,26 %
Vinde Tilkomstteknikk AS	kr 3 363 542	kr 47 470 823	kr 7 432 000	7,09 %	45,26 %
Water Weights Scandinavia AS	kr 2 497 073	kr 30 487 398	kr 18 965 000	8,19 %	13,17 %
Waage Transport AS	kr 1 362 519	kr 2 334 716	kr 106 321 000	58,36 %	1,28 %

Table 9. Dependency calculations (Suppliers Sale 2012, Source: Forvalt.no 2014b-j)

For the analysis of these calculations, a percentage around 10 % is assumed to be a large share of a company's total sale/purchases. When comparing these sales numbers, the dependence relationship is balanced between Axess and the software companies, IT Nor and Onix. As we can see, the exchange value with Onix is very low, compared to IT Nor, which may be due to more comprehensive purchases from IT Nor. Axess buys around 10 % in the relevant category from both Dacon, IT Nor, KAM, Vertikal Service, Vinde and WWS, which tells us that Axess' purchases in the relevant categories are spread over multiple suppliers or that there are some potential sources of errors due to the categorization as mentioned above. It is important that Axess does not become too dependent upon few suppliers, and multiple sourcing will be discussed in section 5.2.1.3. The calculated dependency percentage for Dacon, KAM, Vertikal Service and Vinde does not necessary represent any concerns when looking at them individually, but when

summarizing the percentages it is revealed that those four companies account for almost 36 % of all hiring of personnel in Axess. This highlights the importance of a good relationship. When looking at the column “Axess share of Suppliers Total Sale”, we see that Axess accounts for between 15-25% of the sales from both Dacon, KAM and Vertikal Service, while as much as 45% of the sales from Vinde are related to Axess. This demonstrates that Vinde is very dependent upon Axess as a customer, even though Vinde thought that Axess represented only around 10 % of their sales (Appendix 6). Axess is much more dependent on Waage than the other way around. The dependency condition show that Axess buys almost 60 % of their needed transport services from Waage, while Axess only accounts for 1,28 % of their total sale.

5.1.4.2 The Control Over the Resource

A good way of determining the control over the resource would be to calculate the exact percentage of market share for each of the suppliers. Then we would be able to be more definite in our analysis of the particular supplier market. As mentioned earlier we were not able to detect the total market where Axess operates, so the aspects regarding the number of substitutes is based on the interviews with the employees in Axess and the suppliers. Even the Axess employees we talked to had difficulties defining the potential suppliers and competitors, which highlights the complexity in the market where Axess operates.

The most critical resource for Axess is coming from the personnel hiring companies, and there is a buyer-dependence in the situations where this resource is needed. This is also the current situation for WWS and KAM. In the relationships between Onix and IT Nor, it is the supplier who has control over the resource. The replacement of such suppliers is also connected to a greater effort than other easily substitutable suppliers. This is mainly because IT software takes longer time to implement and both time and money is spent on learning the software. These efforts are specific investments that create higher switching costs, and leads to buyer dependency.

5.1.4.3 The Availability of Substitutes

It is not easy for Axess to substitute most of their critical resources. The suppliers used today have taken time to build up to be on a sufficiently good level, both regarding knowledge, expertise and quality. Based on section 5.1.2.1, where the market structure was discussed, we got an overview of the level of available suppliers in the market for Axess. It

was concluded that there are few available suppliers (substitutes) for the services that Dacon, KAM, Vertikal Service, Vinde and WWS provides, and many suppliers to choose from for the services provided by IT Nor, Onix, Waage and IKM. In this part of the thesis, when placing the suppliers in the dependency matrix, we focus on the level of available substitutes and the dependency calculations from table 9. By doing this we are able to highlight the relationships that exists in the market between Axess and their suppliers:

		Supplier dependent on Axess	
		LOW	HIGH
Axess dependent on supplier	HIGH	Unbalanced Waage Onix IT Nor	Balanced Vinde KAM Dacon WWS Vertikal Service
	LOW	Balanced	Unbalanced IKM

Figure 16. Dependency matrix - Axess and suppliers (Based on Emerson 1962)

Waage is a supplier that it is easy to substitute because there are many transporting companies available in the market and because there are no specific investments made by Axess, Axess will face a low level of switching costs if they want to replace Waage. But Waage is an important supplier because they show great flexibility in their everyday operation, and it might be difficult to find a supplier providing such flexibility. Axess buys as much as 58 % of all their transportation need from them. There are many suppliers of IT-systems and according to the calculated dependency percentage the relationship between Axess and those two suppliers seem to be balanced. But as mentioned before, Axess has done specific investments in these relationships are therefore highly dependent on those two suppliers. Vinde, Dacon and Vertikal Service are all suppliers of the critical competence of NDT and RAT and this service can easily be delivered by any of these suppliers that are already a part of Axess' supplier portfolio. The dependency percentages show that the suppliers are the most dependent party in all of the relationships, but as we merge this percentage for all of these suppliers it is revealed that Axess probably need them all in order to cover the demand. Axess is dependent on KAM for delivering to the end customers, but the dependency calculation indicates that KAM is the overall

dependent part in this relationship. Because KAM's service has few available substitution options in the market, this makes the relationship high in dependence for both parties. The service that WWS is providing has few available substitutes in the market, while the dependency calculation show that WWS is marginally more dependent on Axess, than Axess is on WWS. IKM is the supplier of fabrication to Axess and many suppliers could substitute their services. The dependency percentage shows that the relationship is balanced, with 10 % versus 8,4%. IKM is still classified as low dependency for Axess due to the many alternative suppliers in the market, which decrease the switching costs if they were to be replaced. IKM on the other hand has done specific investments in the relation to Axess, and they are therefore more dependent on the relationship.

5.1.5 Relational Criteria

Some of the supplier relationships are more influenced than others by the length of the collaboration. Based on the interviews it is assumed that certain norms apply for how things should be done in the relationships, referred to as relational norms in section 3.6. These norms also include the existing mutual expectations to the relationship. In relationships where such norms apply there will always be a potential risk that one of the parties act opportunistic.

Due to ongoing negotiations between Axess and their suppliers, we have received different information about the existing contractual arrangements. We assume that the information gathered in the interviews is correct, and that the information in the documents received early on is not yet updated.

The establishment of relational norms characterizes particularly the relationship with Waage, WWS and to some extent Vinde. In appendix 5, WWS states that up until recently the cooperation has been based on mutual loyalty, dependence and a well-balanced relationship. It is also stated that they have cooperated with Axess since the start up in 1998 (Appendix 7). Recently, the two parties signed a written contract with terms and conditions. In appendix 8 the importance of Waage's local connection is stressed as a crucial aspect of the relationship. This is mainly because Waage is able to exert greater flexibility in the everyday operation than the larger actors in the market. Waage has a local branch in Kristiansund, but in recent years they have merged with a larger company called SR Group. There exists no written contract between Axess and Waage at the moment.

Also Vinde highlighted how important the relationship has been for the buyer-supplier cooperation between the two parties. In appendix 6 Vinde says that they were totally dependent on the relationship with Axess the first 4-5 years and that it was thanks to them they were able to establish in the offshore market. Axess and Vinde are right now re-negotiating a framework agreement.

When the current buyer-supplier situation is characterized by relational norms combined with a lack of contractual agreements, this might represent an essential safeguarding need. The most important foundation, making these relationships work adequately, is probably the existence of trust and the relational norms.

5.2 Evaluate Market Structure

In this section the theories are combined in order to evaluate the market structure and governance form for all of the suppliers. The model below shows where in the conceptual model (presented in section 4.1) this section belong:

2. EVALUATE MARKET STRUCTURE

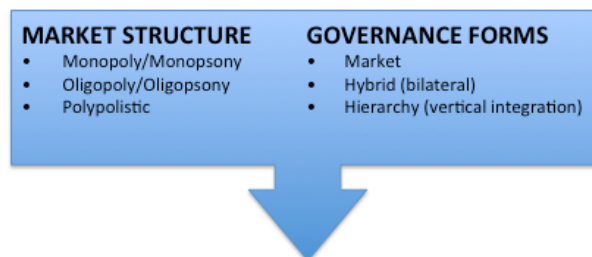


Figure 17. Step 2 in the conceptual model

5.2.1 Kraljic's Four Stage Approach – Stage 2 and 3

In section 3.3.1.2 it was mentioned that Kraljic noted that only the strategic suppliers should be further analyzed in stage 2, 3 and 4. Due to the number of suppliers analyzed, and the research problem consisting of recommending strategies for all of them, it was decided to also analyze the non-strategic suppliers in the remaining stages.

5.2.1.1 Market Analysis

In this stage of the analysis the bargaining power of Axess as a customer is weighted against the bargaining power of its suppliers. The factors that will be investigated are the

capacity the suppliers possesses, the type and the quality of services offered, the reputation, years of experience and the suppliers net profit.

The Capacity of the Suppliers

The suppliers' capacity may be an indication of bargaining power in terms of the need to fill available capacity. If the supplier has a lot of capacity to fill, then the buyer holds the majority of the bargaining power, but if the supplier has scarce capacity then the supplier holds the bargaining power. The capacity of suppliers who provide services are difficult to measure, since it cannot be measured in e.g. capacity of machines, or in availability of raw material. A possible way of measuring it is by the number of employees. In the interview with IKM (Appendix 4), they stated that they could not afford to turn down PO's from customers due to lack of capacity, because of the strong competition in their geographical area. WWS mention (Appendix 5) that they seek to help Axess in every possible way. If WWS get enough time they are usually able to provide Axess with the equipment from other storage locations. WWS only has 5 employees and thus the administration capacity is fairly low. Vinde sometimes needs to decline requests from customers because they are fully booked (Appendix 6). One of the issues Vinde have with Axess is that Axess can keep the personnel booked on projects, while Vinde needs to decline other offers, and then Axess cancel the personnel only hours before they were scheduled to be used. The cooperation with KAM has increased the capacity to Axess, because it became easier to sell the service to the end customers when they could hire additional personnel from KAM (Appendix 10). Axess is still trying to find substitutes to the services offered by KAM since they need to increase the capacity of these services additionally (Appendix 10). The other suppliers, such as Dacon, Waage, IT Nor and Vertikal Service seems to have enough employees to handle the demand.

Company Name	Number of employees
Dacon Inspection AS	33
IKM Mekaniske Kristiansund AS	15
IT Nor AS	30
KAM Lifting Consult	16
Onix AS	16
Vertikal Service AS	33
Vinde Tilkomsteknikk AS	29
Water Weights Scandinavia AS	5
Waage Transport AS	65

Table 10. Number of employees at the suppliers (Source: Forvalt.no 2014b-j)

The Importance of the Offered Services

It may be considered dangerous to draw conclusions based on generalizations, but according to Axess there are huge differences in how the categories are perceived. The personnel hiring suppliers are perceived to contribute with value-added activities to the end-customers, and thus Axess. If the end-customers are pleased with the provided services, they might use Axess again, which leads to value-added for Axess. On the other hand we have transport- and IT-services, which may be viewed as supporting activities, and does not contribute to value-adding in the same way. It is still important that these activities function as planned, in order to execute the scheduled activities. Additionally, the suppliers who offer personnel with NDT competence, are often more critical than suppliers who offer personnel with other types of expertise, such as inspection of lifting equipment. There are few suppliers who offer personnel who can perform NDT combined with RAT, and according to the Group Leader for the Coordination Department in Axess, they are constantly looking for personnel with NDT competence, especially if it is combined with RAT (Appendix 11). In section 5.1.3 it was mentioned that Vinde recently hired an employee with NDT competence, thus the figures from table 1 are updated, see table 12. Fabrication is not considered critical since there are many available substitutes in the market. WWS does not have many substitutes in the market, but in the interview it was indicated that Axess holds the bargaining power in this relationship (Appendix 5).

Company	Category	Sub-Category
Dacon Inspection AS	Personnel	NDT ; RAT
IKM Mekaniske Kristiansund AS	Fabrication and Equipment	Surface Treating ; Welding
IT Nor AS	IT	Programming ; Software
KAM Lifting Consult	Personnel	Cranes ; Lifting
Onix AS	IT	Programming ; Software
Vertikal Service AS	Personnel	NDT ; RAT
Vinde Tilkomsteknikk AS	Personnel	NDT ; RAT
Water Weights Scandinavia AS	Fabrication and Equipment	Loadcells ; Waterbags
Waage Transport AS	Transport	Parcel-services

Table 11. Services provided by Axess' suppliers

It can be concluded that the suppliers who offer personnel with NDT and RAT competence have more bargaining power than Axess, thus Dacon, KAM, Vertikal Service and Vinde possess a high level of bargaining power, while Axess holds the bargaining power with the suppliers of IT, transport and fabrication. Meaning that IT Nor, Onix, IKM, WWS and Waage hold a lower bargaining power compared to Axess.

Reputation and Experience

The supplier's reputation is viewed as an internal resource, which it is difficult for others to imitate. It often takes time to develop a good reputation among the buyers by delivering services based on the expectations of the customers, but it only takes one bad job to break it down. It is difficult to measure reputation since the customers who have good experience with the supplier would recommend the supplier to others, while the customers who are not happy with the supplier would not recommend it to others. One of the problems with measuring services is the perception of the bought services. Further it is assumed that Axess would not use the nine suppliers if they were not pleased with the purchased services.

Experience of the supplier is also important in order for the buyer to trust that the supplier is doing a good job. Experience is gained over time, and the number of years the suppliers have been in the market may be an indication on level of experience. The nine suppliers have various numbers of years since they were established, varying from 6 years in the

industry to 29 years. Based on this it can be stated that suppliers such as Waage, WWS and Dacon holds high bargaining power, Onix, IT Nor and IKM holds medium bargaining power, while KAM, Vertikal Service and Vinde holds small bargaining power.

Company Name	Established
Dacon Inspection AS	1991
IKM Mekaniske Kristiansund AS	2003
IT Nor AS	1998
KAM Lifting Consult	2008
Onix AS	1995
Vertikal Service AS	2007
Vinde Tilkomsteknikk AS	2007
Water Weights Scandinavia AS	1985
Waage Transport AS	1985

Table 12. Suppliers' establishment (Source: Forvalt.no 2014b-j)

Net Profit

The changes in net profit can tell the buyer if the supplier is stable, or a supplier who manages to “get back on his feet”. It is important to be aware that the net profit does not reveal why the supplier is doing good or bad, to detect this, one would need to investigate all the accounting figures. As mentioned in section 4.5.3, accounting figures from 2011 and 2012 are used because the 2013 figures were not yet published. If one look at Dacon and KAM’s figures it may be stated that they had a downfall in 2011, maybe because of the financial crisis or other events, but they have managed to get reasonable results the following year. The accounting figures of IT Nor, WWS and Waage show that they have increased their net profits from 2011 to 2012. Onix, Vertikal Service and Vinde have had a decrease in their net profit from 2011 to 2012. For Vinde and Vertikal Service this seem to mainly be due to an increase in salary cost, while for Onix it seems to be an increase in other operating expenses. Even though IKM managed to increase their sales revenue with approximately 7,5 MNOK, the cost of material and operating expenses increased with more than that, and the net profit became even lower. The figures are shown below:

Company Name	Net Profit 2011	Net Profit 2012
Dacon Inspection AS	-kr 419 000	kr 3 172 000
IKM Mekaniske Kristiansund AS	-kr 1 801 000	-kr 2 237 000
IT Nor AS	kr 3 248 000	kr 4 016 000
KAM Lifting Consult	-kr 225 000	kr 1 450 000
Onix AS	kr 1 012 000	kr 657 000
Vertikal Service AS	kr 3 077 000	kr 1 667 000
Vinde Tilkomsteknikk AS	kr 432 000	kr 9 000
Water Weights Scandinavia AS	kr 6 292 000	kr 8 102 000
Waage Transport AS	kr 3 851 000	kr 3 930 000

Table 13. Net profit of the suppliers (Source: Forvalt.no 2014b-j)

The bargaining power of the suppliers is higher if they have stable and good economy, compared to a vulnerable and fluctuating economy. When the economy is stable, the suppliers are not as dependent on orders from Axess and do have the opportunity to turn down orders if they are unreasonable. By unreasonable it is meant factors such as the time aspect of expected delivery, the expected prices and other terms of the order that might be difficult to fulfill. Vinde was extremely dependent on Axess from the beginning, but the dependency figure has decreased on an annual basis. Axess have been focusing on using local suppliers, and thus they have helped developed a couple of suppliers that later have become their competitors. Due to this it is crucial that Axess know how the suppliers act in the market, and what their accounting figures are (see chapter 3.6.2 about strategic distance). Axess had a net profit of 12.898.000 NOK in 2012, and this was lower than 2011 due to an increase in salary costs. This net profit is much higher than the net profit of the suppliers, but this net profit is combined for all Axess branches in Norway. Based on the figures one might say that Dacon, IT Nor, KAM, WWS and Waage holds some bargaining power in their relationships with Axess. These suppliers either have increasing or stable net profits.

The Bargaining Power of Axess

Axess has 16 years of experience in the industry. They have been growing extremely fast, and already have 323 employees worldwide where 110 of them are located in Molde. Axess Molde has almost twice as many employees as Waage, which is the largest of the

nine suppliers. This shows that Axess is a much larger actor in the market than its suppliers, and thus the need for higher capacity from their supplier has increased. This is also shown by the net profit of Axess, which is higher and more stable than the net profit of its suppliers. The level of dependency Axess has towards their suppliers depends on the services the suppliers offer. Some of the services are more critical and the relationship between Axess and suppliers who offer critical services needs to be good. Axess select their suppliers based on prices and deliverability, but once the cooperation has been established the focus shifts from transaction to relationship (Appendix 7). Another employee in Axess supports this (Appendix 8), where he states that the company wants to have few, but good cooperation partners. The reputation of Axess among their suppliers seems to be two-sided. On one hand there is WWS who states that they trust Axess and are very happy with the cooperation, and on the other hand there is Vinde who states that they think Axess operates in an unstructured manner with lots of cancellations. In total one might say that the bargaining power of Axess is relatively high, but it is depending on the supplier.

5.2.1.2 Strategic Positioning

In this stage the suppliers are positioned in the purchasing portfolio matrix. The strength of Axess is measured against the strength of the supplier in order to find a strategic position. The analysis from section 5.2.1.1 is used as input.

Exploit

If Axess possesses a strong position in the market and the suppliers are less strong, then an aggressive strategy is recommended. With an aggressive strategy Axess might be able to increase profits, but they should not take advantage of their strong position. Since all of IKM's analyzed factors above are medium strong, except for net profit, it can be stated that IKM is a medium strong company. IKM is a much smaller actor in the market than Axess, and with poor net profits the last couple of years and available capacity, Axess is considered to be the strongest company. Based on the analysis of Onix's factors one might say that the factors are considered as low and medium strong, but because of the decreasing net profit and the high level of capacity it is concluded that Axess is medium strong in this relationship, while Onix's company strength is low. As mentioned earlier, Vinde was dependent on Axess the first years of operation and Axess was responsible for

approximately 90 % of their revenue (Appendix 6). Now, their net profit shows that they are growing and the number of employees is increasing. Vinde are not fully independent of Axess yet but their strengths are emerging, and it is crucial that Axess is aware that Vinde might become their competitor during the next couple of years. So far, Vinde have only achieved to become medium strong in the relationship with Axess, while Axess is considered as a strong company.

Balance

In chapter 3.3.1.3 it was mentioned that a balanced strategy is recommended if the supplier neither is associated with major risk or major benefits. In the analysis above it was noted that Dacon offered services that were essential in Axess's operations, and that Dacon had been in the industry for a long time. In addition their net profit was fairly high, and based on the number of employees the level of capacity was high. Dacon is therefore viewed as a medium strong company, and the same factors make Axess a medium strong company as well. IT Nor also offer services that are important to Axess and have a high net profit, but as mentioned in section 5.2.1.1 these services does not contribute to value-added for Axess and only act as support services. IT Nor have been in the industry as long as Axess, and have several years of experience, and they also have a high level of capacity. Based on this it is concluded that both Axess and IT Nor are medium strong companies in their relationship. Vertikal Service is another company who has a high level of capacity and offer important services to Axess. Opposed to the other two companies, Vertikal Service has not been in the industry for more than 7 years and their net profit is not as stable as the other supplier's net profit. Even though the net profit of Vertikal Service is decreasing, it should be seen in the context of an increase in employees, and thus they are growing. Based on this it can be stated that Vertikal Service and Axess have a relationship where they are equally strong at the moment, but as Vertikal Service is growing fast, Axess needs to monitor this supplier. WWS is a strong supplier with long experience in the industry and high net profit. In addition they have a low level of capacity, and more power against the buyer compared to suppliers who have a high level of capacity. Based on these factors Axess should have developed a diversified strategy against WWS, but due to the good relationship between Axess and WWS (as mentioned in section 5.1.5) a balanced strategy is more suitable.

Diversify

If a diversified strategy is recommended, the suppliers hold more bargaining power than Axess and searching for substitutes may be necessary. Axess is honest about finding additional suppliers for KAM's services, but so far they have not found anyone that deliver a satisfying level on the services. KAM is considered a strong company due to their limitations on capacity and the importance of their services, which means that Axess is considered as the weaker part in this relationship. Even though KAM contributed to an increase of capacity in Axess and they are satisfied with the cooperation, Axess should seek to find other suppliers in order to not become too dependent on one supplier. In section 5.1.5 and Appendix 8 it is mentioned that Waage became a part of SR Group in 2013, which made them an even bigger provider than they were, both national and international. Waage have high capacity, and high net profit, but it is mostly due to their reputation and experience that the company is considered as medium strong. Since Waage have other large customers who contribute more to their revenue than Axess does, such as Transocean (Appendix 8), it can be concluded that Axess is a weak company in relation to Waage.

The suppliers should be placed in the matrix in the following way:

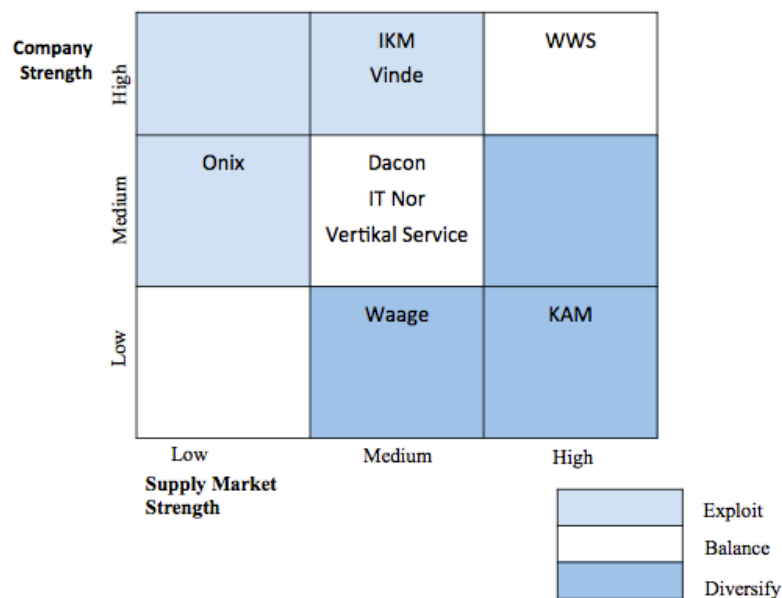


Figure 18. Company and supplier strength (Based on Gelderman 2003)

5.2.1.3 TCA, RDT and Relational Market Structure

According to TCA a safeguarding problem exist where there are made specific investments in the buyer-supplier relationship that cannot be used towards other suppliers or buyers. RDT focus on the importance of the resource, and the firm’s ability to replace those resources. The specific assets may be deployed on both the buyer and the supplier side, but here we specify which side the investment is mainly deployed on. This is important to do when it is evaluated against the bargaining power in the market. Looking at the focal firm and their suppliers, the specific investments done on the supplier side may not be of big importance, since most of the investments actually can be used in other relationships. But in order to place each of the suppliers in the bargaining power matrix, we need to exaggerate our arguments and classify the specific investments for mainly on the supplier side or on the buyer side. The concept of bargaining power is thoroughly discussed in section 5.2.1.1, where the theoretical framework focuses on the work of Kraljic. The discussion about bargaining power is combined with important factors from TCA and RDT, see chapter 5.1.3 and 5.1.4, and thus the matrix for Axess’ nine most critical suppliers will look like:

Specific assets mainly on:	Substantial Supplier power		Substantial Buyer power	
	Buyer dependence		Supplier dependence	
Buyer side	IT Nor Onix		1	4
Supplier side	Waage WWS Vertikal Service KAM Dacon		2	3
				IKM Vinde

Figure 19. SPI and power-dependence (Based on Buvik and Reve 2002)

In the first cell in the matrix, the specific investments are found mainly on the buyer side and the buyer’s power is low. Recall that the calculated dependency percentage also was low for both of these companies and that this relationship is associated with high switching costs for Axess, making this a risky relationship for Axess. In these relationship Axess has the incentive to safeguard their specific investments, but it is the supplier who “control” the cooperation. The next cell is where Axess’ bargaining power still is low, but the specific investments are done on the supplier side. The incentive and the ability to safeguard the specific investments are tied to the supplier, mainly because they exert great

market power against Axess due to a lack of substitutes in the market. So, if the supplier finds it necessary, they should establish contractual arrangements to safeguard the specific assets. The last cell relevant for Axess is where their bargaining power is high, and the specific investments are done mainly on the supplier side. The calculated dependency percentage also showed that Vinde sold a large share of their total sales to Axess, making them dependent upon Axess as a customer. IKM is dependent upon Axess partly because of their bad net profit, and because they have done specific investments, while Axess will have low switching costs if they want to break out of the relationship. These relationships are risky for the supplier and they should seek to enter a contractual arrangement with Axess, or find additional customers to rely on. Axess has the highest bargaining power in these relationships, and therefore does not stress to safeguard any supplier-specific assets. This matrix shows that when the specific investments in a relationship become substantial, eventually a need for safeguarding of these investments will arise. Then, a need for better governance performance will also occur and the relationship should move on to a more hybrid form of cooperation or internal organization.

Based on RDT there are different actions one might do to balance the operations in a buyer-supplier relationship. First, internal coordination might be an alternative, the introduction of a supplier development program can be relevant or the focal firm can introduce multiple sourcing. For Axess' situation this can be important to do to become less independent on critical sources of supply, or in the relationships where specific investments are conducted, multiple sourcing can act as a safeguarding mechanism. The level of specific investments on the supplier side should be decisive in selecting sourcing strategy. When looking at potential ways to handle asset specificity combined with sourcing strategy one might evaluate the focal firm's suppliers according to the following matrix:

Sourcing strategy:	Asset specificity on Supplier side	
	LOW	HIGH
Multiple sourcing	Waage Vinde Vertikal Service Dacon 1	IKM 4
Single sourcing	WWS KAM Onix IT Nor 2	3

Figure 20. Sourcing strategy and SPI (Based on Buvik and Andersen 2011)

Regarding this matrix, compared to the Figure 19 above, is that one now is able to distinguish between a high and low degree of specific investments and not only decide if the specific investments are employed mainly on the buyer or the supplier side. When placing the suppliers in the matrix it is crucial to look at the level of differentiation of the services. The first cell in the matrix represents a situation where it exist specific assets on the supplier side, but they are low. There are also many suppliers to choose between, and Axess uses a multiple sourcing strategy on these services. In these relationships the purchasing departments role should be proactive, to focus on supplier selection based on selection criteria and perform evaluation of the suppliers. The market structure here is referred to as monopolistic competition. The second cell describes the supplier relationships where the suppliers provide the customer with rather homogeneous products, such as transportation and equipment. Single sourcing is chosen in these cases in order to economize on transportation and logistics costs. The case with Axess is that they have made specific adjustments to the standard modules of IT-software they have invested in. So, while the level of specific investments is low on the supplier side, the buyer side has done substantial specific investments towards the supplier. Which have built up high switching costs for Axess. The market structure in this cell is perfect competition, also called competitive market. The third relevant box in the matrix for Axess is cell four, which is a market condition referred to as a bilateral monopoly that is supported by competition. IKM has invested in specific assets, to meet Axess' requirements, at the same time there are many suppliers providing the this service that Axess could turn to. In relationships like this, to source from multiple suppliers works as a safeguarding mechanism and is keeping the risk for opportunistic behavior somewhat under control.

5.3 Summary of Analysis

The objective in this chapter has been to connect the Kraljic framework with the concept of TCA, RDT and RCT in order to conduct a thorough analysis of Axess and their suppliers. Table 14 summarizes the sections discussion Kraljic's stage 1. It is important to notice that the entry barriers for all of the services the studied suppliers are providing, has high entry barriers, meaning that it is difficult for competitors to enter the market. The supply scarcity and the relational aspects in the buyer-supplier relationships make it even more difficult for competitors to enter the market, and for Axess to find suitable substitutes.

Company Name	Supply Scarcity	Market Structure	Substitutes	Logistical Complexity	Entry Barriers	Pace of Technology
Dacon Inspection AS	Low	Supply-Side Oligopoly	Low	Low	High	Low
IKM Mekaniske Kristiansund AS	Low	Polypolistic Competition	High	Low	High	Low
IT Nor AS	Low	Polypolistic Competition	High	High	High	High
KAM Lifting Consult	High	Supply-Side Oligopoly	Low	Low	High	Low
Onix AS	Low	Polypolistic Competition	High	High	High	High
Vertikal Service AS	High	Supply-Side Oligopoly	Low	Low	High	Low
Vinde Tilkomsstteknikk AS	High	Supply-Side Oligopoly	Low	Low	High	Low
Water Weights Scandinavia AS	High	Supply-Side Oligopoly	Low	Low	High	Low
Waage Transport AS	Low	Polypolistic Competition	High	Low	High	Low

Table 14. Summary of supply risk

The existing switching costs, and the level of specific investments was also discussed and whether it is found mainly in the buyer or the supplier side in the relationship. The findings from the analysis are summarized in table 15:

Company Name	SPI mainly on	Level of SPI	Bargaining power mainly on	Real substitutes *	Switching costs	Axess sourcing strategy
Dacon Inspection AS	Supplier	Low	Supplier	Few	Low	Multi
IKM Mekaniske Kristiansund AS	Supplier	High	Customer	Many	Low	Multi
IT Nor AS	Customer	High	Supplier	Many	High	Single
KAM Lifting Consult	Supplier	Low	Supplier	Few	Low	Single
Onix AS	Customer	High	Supplier	Many	High	Single
Vertikal Service AS	Supplier	Low	Supplier	Few	Low	Multi
Vinde Tilkomsstteknikk AS	Supplier	Low	Customer	Few	Low	Multi
Water Weights Scandinavia AS	Supplier	Low	Supplier	Few	Low	Single
Waage Transport AS	Supplier	Low	Supplier	Many	Low	Multi

* Many suppliers loose their potential of being substitutes due to a lack of skills, expertise or quality

Table 15. Summary of the analysis

6.0 Discussion

In chapter six the findings from the analysis are discussed in order to answer the propositions, the research questions and finally the research problem.

6.1 Select Supplier Strategy

The last step in our conceptual model (discussed in section 4.1) combine step 1 and 2 from the analysis in order to select a supplier strategy that minimizes the supply vulnerability and increase the potential buying power.

3. SELECT SUPPLIER STRATEGY

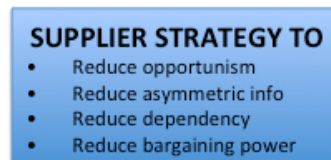


Figure 21. Step 3 of the conceptual model

In stage four of Kraljic’s approach, the strategies that are applicable for the four different classifications are presented. Based on this, the suppliers should be categorized as follows:

Strategies Characteristics	Partnership	Competitive Bidding	Secure Supply	Category Management and E-Procurement Solutions
Objective	Create Mutual Commitment in Long-Term Relationships	Obtain “Best Deal” for Short Term	Secure Short- and Long-Term supply and Reduce Supply Risk	Reduce Logistics Complexity, Improve Operational Efficiency and Reduce Number of Suppliers
Suitable For	Strategic Suppliers	Leverage Suppliers	Bottleneck Suppliers	Routine Suppliers
Decision Level	Board Level and Cross-Functional Approach	Board Level and Purchasing	Purchasing and Cross-Functional Approach	Purchasing and Cross-Functional Approach
Suppliers	Dacon, IKM, KAM, Vertikal, Vinde and WWS		IT Nor and Onix	Waage

Table 16. Supplier strategies (Based on van Weele 2010a)

These suggestions are only based on Kraljic's four-stage approach, and may not be suitable for the buyer-supplier relationships to Axess since we need to combine these findings with the findings of TCA, RDT and RCT. In the following section the research questions and propositions will seek to answer the research problem, which is “What strategies can Axess AS utilize to manage their supplier relations?” and investigate if the strategies suggested by Kraljic are the ideal strategies.

6.2 Research Question 1

The first research question regards finding aspects of a supplier that are considered to be critical for Axess. This research question will be answered in section 6.2.3 based on the propositions, the analysis and the underlying theory.

6.2.1 Proposition 1

PI: Axess AS is highly dependent on individual suppliers.

This proposition requires that we look at the matrix we discussed in RDT, which shows if there is a balanced or unbalanced dependence between Axess and the suppliers. Some of the factors analyzed in Kraljic's first stage may also be applicable to this proposition since it investigates if there are possible substitutes, e.g. if there exist supply scarcity or if the entry barriers are high. The specific investments will also be useful to investigate, since this might reveal if one of the parties in the relationship is more dependent on the other. All of these aspects might answer if Axess is dependent on individual suppliers.

In section 5.1.4.3 a matrix of the buyer and suppliers dependency of each other was presented. If there is a low level of substitutes, then one is dependent of the other party. Further this matrix is based on chapter 5.1.2.1, which presents the level of substitutes for all of the suppliers. This matrix shows that Vinde, Dacon, WWS, KAM and Vertikal Service have balanced relationships with Axess, where one is highly dependent on the other, due to the low level of substitutes and high entry barriers. Since the entry barriers are high it is more difficult for new entrants to enter the market and achieve enough market shares to compete against the established actors. In addition the dependency calculations from table 9 show that there are mutual dependency between Axess and the listed suppliers. Since there are few substitutes for the suppliers in the market, it is essential that Axess establish well-functioning relationships with them. Axess holds unbalanced

relationships with Waage, Onix, IT Nor and IKM. In these relationships it is noted that Axess is highly dependent on Waage, Onix and IT Nor, while the suppliers have a low dependency level on Axess. Axess is not dependent on IKM due to the level of substitutes and the specific investments made by IKM. The services are not as critical as the services provided by the other suppliers, and it is easier for the suppliers that have unbalanced relationships with Axess to standardize their services. Based on this matrix alone, it shows that Axess have both balanced and unbalanced relationships with their suppliers, and it shows that Axess is dependent on all of their suppliers, except for IKM.

In Kraljic's first stage it was investigated if the supply scarcity of the services offered by the suppliers were high or low. If the supply scarcity is low, then Axess is more dependent on the supplier than if there is no scarcity. As mentioned in the analysis it is difficult to estimate the number of substitutes, since not all of the suppliers in the market are considered to be substitutes. This may be due to lack of skills, experience or poor quality on the services offered. The authors have had several discussions on how many suppliers may be applicable as substitutes, and concluded that five out of nine suppliers do have few available substitutes, see table 6. Based on supply scarcity and substitution it is clear that KAM and WWS are suppliers who actually have few substitutes, while IKM, Vertikal Service, Dacon and Vinde have available substitutes that are not considered as good enough. Since the entry barriers are considered as fairly high for all of the suppliers, due to the large investments needed to enter the market and the required service level, the chances of new substitutes for the established actors are low. Based on Kraljic's first stage it can be concluded that Axess is dependent on KAM, WWS, Vertikal Service, Dacon and Vinde, due to the low number of substitutes in the market.

The level of specific investments in the relationship is also essential when investigating if Axess is dependent on any of their suppliers. If Axess has a high level of specific investments towards its suppliers, then it is more costly for Axess to switch suppliers. In chapter 5.1.3 it is noted that Axess have made specific investments towards IT Nor and Onix. In addition, the suppliers who offer personnel have trained their personnel in order to suit the demand from Axess. Waage, IKM and WWS have also made specific investments in terms of adapting their routines to the requirements of Axess. It can be discussed if the mentioned specific assets can be classified as a high degree of asset specificity, and thus if it complicates the possibility for Axess to switch suppliers. In the

analysis it was noted that Axess had made high specific investments in relation to IT Nor and Onix. But since Axess is developing a new IT-system with another supplier, the future relationship with IT Nor and Onix may not be of great significance to Axess.

From the discussion above it is clear that the two analyzes provides the reader with different conclusions, but the authors have from the beginning noted that all of the analyses will be applied, and combined give an answer to the research questions. Combined it can be concluded that Axess is dependent on KAM, Vinde, Vertikal Service, WWS and Dacon.

6.2.2 Proposition 2

P2: Axess AS faces sufficient bargaining power in its relationship with individual suppliers.

In order to answer this proposition we need to look at the market structure and the bargaining power of the suppliers. This is analyzed in Kraljic's second stage, and will be applied for this proposition. In addition the matrix of specific investments and bargaining power from figure 19 will be used.

Kraljic's second stage seeks to analyze the bargaining power of the suppliers against the bargaining power of the buyer. The analyzed factors revealed that some of the suppliers possessed higher bargaining power than Axess, but Axess was in most of the cases viewed as the strongest company. Even though the majority of the suppliers were strong in some of the analyzed factors, they were weak in other factors, and thus the importance of the factors needed to be considered. Based on the industry Axess operates in and the strict regulations they need to follow, it is crucial that Axess have trustworthy hired personnel and employees in order to perform the best jobs. If something were to go wrong it could lead to tremendous consequences if the fault could be traced back to Axess. Thus it is assumed that the most important factors that were analyzed in chapter 5 are the importance of the services and the experience. Within the importance of the offered services we found that Dacon, KAM, Vinde and Vertikal Service hold high bargaining power due to the rental of personnel, while in the experience factor it was found that Dacon, IT Nor, Onix, WWS and Waage holds high bargaining power. Since Dacon is the only one who holds high bargaining power in both of these two factors, we need to look at how the capacity of these suppliers affects the bargaining power. KAM, WWS and Vinde are suppliers who

have been categorized to have a low capacity, and thus higher bargaining power. If we then gather all these factors, it shows that KAM, Dacon, WWS and Vinde are suppliers who have high bargaining power. With the other suppliers it is Axess who holds the majority of the bargaining power.

In addition to the factors analyzed in Kraljic's second stage, the relationship between bargaining power and specific investments has also been investigated. In this analysis the bargaining power and specific investments is either classified as high or low, and cannot be classified as medium such as in the matrix of Kraljic. Since an additional factor has been added to the analysis, the outcome might be different from Kraljic's stage two. IT Nor and Onix were not considered to be strong suppliers at first, but due to the level of specific investments the switching cost for Axess has increased. On the other hand it was concluded that Dacon, WWS, KAM and Vinde were considered as suppliers with high bargaining power, but because of the specific investments done by these suppliers it is costly for them to lose Axess as a buyer and thus Axess has higher bargaining power. In figure 19, Waage is also identified to be located in a cell where Axess' bargaining power is low, but due to the specific investments it is also costly for the supplier to replace them. Since Waage became a part of SR Group last year, it is difficult to know if it will have any administrative consequences or if business will remain as usual. The dependency calculations showed that Vinde sold approximately 45 % of their total sales to Axess, which means that Vinde is extremely dependent on Axess and that their bargaining power is low compared to Axess. Since IKM have made specific investments towards Axess, in addition to having bad net profits and many substitutes, it is concluded that IKM also have low bargaining power compared to Axess.

If the two analyzes are combined it can be concluded that some of Axess' suppliers holds the bargaining power in their relationships with Axess. We are aware that Axess is trying to develop new software, and thus the bargaining power of the existing IT-suppliers will eventually decrease. Therefore it is concluded that the suppliers who hold bargaining power in the relationship with Axess are KAM, WWS and Dacon.

6.2.3 RQ1: *What makes a supplier critical for Axess AS?*

The key members in the focal firm's network are an essential factor for success, because they are an important part of the service delivery. In section 5.1.1.3 it is noted that the key network members are critical for the success of Axess, and thus these members require more resources and attention than members that are not as important. One of the reasons why it is important to focus on the relationship with the key members may be the lack of substitutes for some of them, thus it is crucial that the relationship function. One example of this is the relationship between Axess and KAM. Axess state that they have had conflicts with KAM on a personal level (Appendix 10), but since there are no good substitutes the relationship needs to be maintained.

Axess has started to investigate what makes a supplier critical (see chapter 2.2.4), but this investigation needs to go beyond only looking at the service the suppliers provide. The criticality of a supplier is a complex factor, and should be based on a combination of various factors. Proposition 1 and 2 seek to answer this research question, and based on them and theory it may be noted that the criticality of suppliers depend on factors such as specific investments, available substitutes, the services offered and the dependency level in the buyer-supplier relationships. These factors are discussed in the propositions above, and thus the bargaining power and dependency in the buyer-supplier relationships should be sufficient enough to determine if a supplier is critical for Axess' operations. The reasons why these factors are highlighted are because they answer if the company should continue to spend time and resources on the relationship or if it should seek to diversify the supplier portfolio. Some of the factors may be strong enough to determine if a supplier is critical by themselves, such as the number of available substitutes in the market. If there only are one or a few suppliers who provide the needed service it could be concluded that this supplier is critical for Axess, but in general one should also look at the other factors as well in order to determine this. Axess has not been structured in their selection of suppliers, and both Axess and the suppliers would benefit from a decrease in the large number of suppliers, which then again could lead to better relationships with the remaining suppliers and a more structured purchasing function.

6.3 Research Question 2

The second research question is addressing the issue regarding the market structure, and how this affects the buyer-supplier relationship. This research question will be answered in section 6.3.3, by combining the answers from proposition 3 and 4.

6.3.1 Proposition 3

P3: The current purchasing function takes no account of market structure.

To give an answer to this proposition we need to compare today's coordination of the purchasing function with the recommended role of purchasing depending on the market structure. By looking at the matrix that Buvik and Andersen (2011) proposed as a connection to RDT and TCA, we can compare how Axess treat their purchases in the different markets today, and how theory says they should do it. This matrix was discussed in section 5.2.1.3. Based on the level of specific investments on the supplier side and the market conditions surrounding the exchange, we will be able to see if Axess is managing their supplier relations the recommended way according to the proposed matrix.

The first cell in the matrix (cell 1) represents the situation where Axess has multiple sourcing and the supplier has a low level of specific investments connected to the focal firm. In a situation like this the market is classified as monopolistic competition, with many suppliers (substitutes) that offers differentiated products/services. This market structure recommends the focal firm's purchasing function to focus on the selection of buying criteria, evaluation of suppliers and to make adaptations to specific suppliers to get a smooth collaboration. It is important that the purchasing function not only acts as a logistics function, with a focus on only getting enough available resources to the right time and price. When analyzing the sourcing method and the level of specific investments for Axess' suppliers, we were able to place Waage, Vinde, Vertikal Service and Dacon in this first cell. These suppliers are very different, three personnel hiring companies and one transporting company. Regarding Waage, Axess buys as much as 58% of the needed transportation from them, however this is a homogeneous service, and in theory, it is argued that in these cases the focal company should focus on single sourcing, in order to economize on the logistics costs (the transaction costs). This seems to be an area of improvement for Axess, because they have many small orders (both in size and cost) from Waage, so the potential savings related to administration and ordering of the transport services seems to be of a noticeable size in the long run. Today a Logistics Coordinator

manages these purchases, and the focus is as a primary logistics function, which also is recommended by theory. The personnel hiring companies are providing differentiated services, but there are some suppliers providing the same service. In a market situation like this, there should be multiple sourcing and the purchasing function should regularly evaluate the selected suppliers. It is the Coordination Department in Axess who are allocating resources on the projects, and they are operating more or less as a basic logistics function. The way the current purchasing function is organized it is not much time allocated for evaluation of the suppliers. The suppliers are selected mainly for their availability of resources and the pricing of their service. A recommendation based on theory is for Axess to make sure that regularly evaluations are conducted properly and to adapt to specific selected suppliers.

The next cell (cell 2) is the market structure referred to as the competitive market. This is the situation as recommended for Waage described above. The service is homogeneous, the supplier has not done any heavy specific investments in the relation with their customer and it is usually low switching costs for the customer to switch supplier. This market structure may also be referred to as perfect competition or monopoly, depending on the surroundings of the exchange. From Axess' supplier base we find WWS, KAM, Onix and IT Nor in this category. The purchasing function should focus on the getting the correct quantity and to always ensure enough capacity, to the right price. In other words the purchasing function should work as a pure logistics function. Therefore it becomes evident that KAM does not fit into this market structure as they are providing a differentiated service, and Axess should seek to find other suppliers as well. WWS offers equipment for rental, and the Warehouse are usually in charge of these orders. When talking about non-complex products/services in a non-uncertain environment, such as rental of equipment, price is often the determining factor. Since WWS is the predominant supplier within this field, providing a homogeneous product with low variation in quality from time to time, the recommended strategy is actually single sourcing. In relation to both IT Nor and Onix, Axess has done a high level of specific investments in these relationships (asset specificity on the buyer side), and therefore this implies high switching costs for Axess. It is difficult to do multiple sourcing on ERP-systems or company software, due to challenges with merging of two completely different systems. In order for Axess to be secured against these suppliers charging higher prices and/or lowering the performance, it could be relevant to enter a bilateral monopoly. This situation could be a win-win situation

for the two companies, but as this also creates a small number condition (one buyer, one supplier) the need for safeguarding against opportunism also arises and a contractual agreement should be in place. The problem with asymmetric information will also be important to monitor.

In cell 4 the market structure is called the hybrid form, also referred to as bilateral monopoly supported by competition. IKM is the only supplier placed in this description. This is mainly because they have invested in asset specificity in their relationship with Axess, but the buyer power is high and there are available substitutes in the market, it is therefore natural that IKM will seek to safeguard their investments. At the same time Axess is not a huge customer to IKM, so multiple sourcing to many different customers works as a safeguarding mechanism for IKM. While Axess manages this relationship with a role as primary a logistic function, it is recommended for them to become a more interactive purchasing function, that closely monitors the market and the changes to always know who holds the majority of the bargaining power.

The current purchasing function should take more account of the market structure where the exchange with the supplier takes place. By always being updated about the market structure, about who holds the bargaining power and potential changes to the environment where the exchange occur, Axess will be able to allocate their resources where they are strategically most needed.

6.3.2 Proposition 4

P4: The current purchasing function leads to a short-term perspective in supplier selection.

It seems like Axess' intention regarding their supplier relationships is to select few, but good suppliers. Once the collaboration has been established, and the relationship is operating as intended, there is a shift from a transaction focus to a more long-term relational focus (Appendix 10). In 2013 Axess made a strategic move to hire a Procurement Manager. The main idea for doing this was to organize all the purchases along their supply chain, and the main tasks for the Procurement Manager so far has been to establish more formal terms and conditions in the relationships with the suppliers. Right now there are ongoing negotiations between Axess and many of their critical suppliers. The purchases are still coordinated the same way as earlier. The Coordination Department

hire personnel to the different projects, the Project Managers are in contact with the fabrication suppliers and the Warehouse Department rent the equipment needed on the projects.

In Kraljic's third stage of the four-stage approach, the strategic positioning is examined and suggestions for exploiting, balancing or diversifying the supplier relationships are proposed. Also in Kraljic's last stage, the recommended strategies for the different suppliers are mentioned. Based on the analysis of market structure and strategic positioning, long-term commitment with Dacon, IKM, KAM, Vertikal Service, Vinde and WWS were recommended. Reducing the ordering complexity was recommended for Waage and securing of supply in both short and long-term was recommended for IT Nor and Onix. Some of the supplier collaborations have been there for many years, and although a lack of written contractual agreements, one might believe that the establishment of trust and relational norms has been the safeguarding and coordination mechanisms. However, as the market dynamics changes continuously and as a supplier relationship evolve over time, the theory states that the need for governance mode also changes.

When comparing the present focus in the supplier relationships with the recommended focus from the analysis for these suppliers, it becomes evident that there is a need for a more long-term perspective. The personnel hiring companies are all suppliers of very critical services to Axess, and therefore a focus should be to gain balance in these relationships over a longer perspective. Today, Axess has contractual agreements of 1-year duration, which is automatically renewed if nothing else is stated, with Dacon, IKM and IT Nor. Axess recently signed an agreement with Vinde valid for 2014, with a written agreement on prices and conditions. Both the relationship with Vinde and IKM is worth to be aware of and to try and exploit the possibilities in the market. The purchasing function in Axess needs to monitor both of these suppliers. For IKM, which have had poor net profits the last year, Axess creates a valuable opportunity to gain some more revenue if they work closer together. Vinde represents a potential risk for Axess, and they are able to grow even stronger and become a huge competitor if Axess does not monitor them closely. Therefore the purchasing function should focus on establishing a contract with them for a longer perspective, not for a period of one year at a time. Vertikal Service and Axess do not have any formalized agreement yet, but there are ongoing negotiations and a plan for making an audit of the firm during 2014. A 3-year agreement has been signed with KAM,

which is automatically extended for 1 year if nothing else is stated. The lack of potential substitutes for KAM creates a need to focus on a long-term perspective with them. It is important to always be ahead with the initializing of a contract and to keep a good communication. Axess and WWS recently signed a framework agreement. In the relationship with Onix and Waage there are no formal written formalized agreements. Both regarding Onix and IT Nor there exists a need for securing the supply from them. Especially since Axess has made investments in specific assets, it is important to keep a closer contact with them. In the relationship with Waage there should be a focus of the procurement function to reduce the complexity of ordering and focus on savings in transaction costs.

Some of Axess' supplier relationships require a more assertive purchasing function compared to how it is organized today. Today, employees in different parts of the organization are responsible for suppliers and to conduct regular supplier evaluations. The disadvantage with this is that a long-term perspective might not be the main focus for the employees that are responsible for the suppliers, which the discussion above seems to be an indication of. Some of the supplier relationships need to be closely monitored, to avoid a supplier becoming a competitor. It is also crucial to focus on nurturing of the most critical supplier relationships, especially since there is a lack of sufficient resources connected to the most critical suppliers.

6.3.3 RQ2: *How does the market structure affect the buyer-supplier relationships?*

Axess experience many different market structures in their supplier relationships and, as mentioned earlier, the market is continuously changing. Therefore it is important to constant monitor the market, in order to know how the transactions and the relationships with the suppliers should be managed. Axess needs to consider a set of important factors regarding the market structure, which will all affect the supplier relationships. These are:

- Total number of suppliers and buyers in the market
- Available substitutes for the different services
- Level of bargaining power for the buyer and the supplier
- Level of buyer or supplier specific investments

In the exchange relationships where there are few suppliers and many buyers, the market structure is referred to as supply-side oligopoly. Under such circumstances the supplier usually holds the majority of the bargaining power, which has a negative affect on the buyer-supplier relationship seen from the buyer's perspective. If, on the other hand, the supplier has done specific investments, the relationship becomes more balanced. When the buyer has low bargaining power and the supplier has done specific investments, the motivation and the ability to safeguard those assets is on the supplier side. In such situations the need for contractual safeguarding is reduced due to the balanced situation, and if one party acts opportunistic it will probably hurt both parties in the collaboration.

Most of the suppliers are operating in a market where it is several suppliers and many buyers, making the market structure classified as polypolistic competition, where the demand and supply market is more or less balanced. The number of available substitutes will influence the buyer-supplier relationships in a positive direction for the buying company, since they have more suppliers to choose from and can spread their transactions over an increased number of suppliers to ensure a good delivery in their projects.

A challenge for Axess is to constantly consider the market structure where the different exchanges take place and then correct their supplier strategies towards this. It is important to know whether the supply-side or the buyer-side is the strongest part, because this will influence the recommended strategic position for Axess. A good purchasing strategy will reduce the possibility for opportunism, will reduce the asymmetric information, stabilize the dependency relationships and monitor the bargaining power.

7.0 Recommendations

Chapter seven shortly presents the conclusion, which is a summary of the recommendations to each of the nine most critical suppliers.

Since Axess does not control all the needed resources in order to be self-sufficient, they are dependent upon the suppliers who control these resources. At the same time this creates an uncertainty in the decision-making of the focal firm. A general recommendation based on the analysis in this thesis is that Axess should seek to reduce the number of vertical tiers, in other words the number of suppliers that they cooperate with. This is important because it is difficult to effectively collaborate with suppliers beyond this tier if there are too many.

Kraljic state that a buying company should select a supplier strategy that minimizes the supply risk and maximizes the buying power. The RDT suggest that the focal firm should focus on reducing as much uncertainty in the relationships as possible and highlights the importance of not becoming too dependent on wrong suppliers. The TCA suggest that in the relationships where substantial investments in specific assets are done, to safeguard from opportunism. The RCT highlights the importance of the relational length and the established norms.

Factors from these theories have been combined and together form a recommended supplier strategy for each of the critical suppliers to Axess. These are found in section 7.1.

7.1 *Strategy Recommendations*

Dacon: There is a balanced relationship between Dacon and Axess, where they both are dependent on each other. Dacon is providing a critical service and they therefore hold the majority of the bargaining power. At the same time they are dependent on Axess since the purchases Axess made from them represents a large share of their total sales, while Axess is dependent on Dacon due to the low number of potential substitutes and the high entry barriers in the market. Dacon operates in a market where there are many actors providing differentiated services, which mean that a multiple sourcing strategy is needed and Axess should focus on searching after additional suppliers. Axess' purchasing function should

regularly evaluate Dacon and their performance and investigate the possibility to adapt even more closely to them. The four-stage approach of Kraljic recommend that a partnership with Dacon should be established, which seems reasonable in order to secure long-term supply from Dacon as a provider of a critical resource.

IKM: IKM is a small actor in the market compared to Axess and has little bargaining power in the buyer-supplier relationship, since Axess holds the majority of it. This is mainly because IKM is providing a less critical service compared to the other suppliers and Axess is able to choose between several potential suppliers without facing any switching costs related to it. IKM has deployed specific assets by starting to use extra storage for testing of the products bought by Axess and they have adapted certain routines that Axess requires. Based on Kraljic's theory the supplier recommendation is to establish a long-term commitment with IKM, in order to secure supply, but this is not necessary because IKM is the dependent party in this relationship. It is possible that IKM will try to seek written contractual agreement with Axess to secure itself from a risky relationship.

IT Nor: Axess holds an unbalanced relationship with IT Nor, where Axess is the dependent party in the relationship. Even though there are several suppliers of IT-systems in the market and the dependency condition are similar for the two parties, the specific investments made by Axess increase the cost of switching supplier and thus increase the dependency level of Axess. Since IT Nor is the independent party, they also hold the majority of the bargaining power in the relationship. We are aware that Axess is seeking to develop a new IT-system with another supplier, but since we do not know what consequences this might have for the software provided by both IT Nor and Onix, we focus on the situation today. Multiple sourcing may be difficult in this situation due to the provided service, thus the need for a written agreement increase. One alternative is to enter a bilateral monopoly situation with IT Nor, which makes it even more important that Axess focus on safeguarding themselves against opportunism and asymmetric information. Based on the Kraljic theory, it is proposed that Axess needs to secure their supply and reduce the supply risk. By establishing a contractual agreement with IT Nor, Axess could be able to control the use of consultancy hours and costs related to this.

KAM: The relationship between Axess and KAM is classified more or less as balanced, with both parties highly dependent on each other. Axess is dependent on KAM due to few

available substitutes and the need for the service they provide, while the dependency calculations show that approximately 25 % of the total sales come from Axess, which makes KAM dependent on Axess. The importance of KAM's services have an effect in their bargaining power in the relationship with Axess, but since Axess is such a large customer they cannot afford to misuse this bargaining power. Similar to Dacon, Axess should use multiple sourcing for the services that KAM provides, but as mentioned Axess has so far not been able to find other suppliers of the same services. While Axess search for additional suppliers they should regularly evaluate KAM as a supplier and consider if specific adjustments can be done in order to enhance the collaboration. Based on Kraljic's strategies, it is suggested to establish a partnership with KAM. Partnership might be exaggerated, but a close collaboration with KAM is needed to maintain the capacity of these services towards the end customer.

Onix: Axess and Onix have an unbalanced relationship. The dependency calculations for are fairly low; Axess is only responsible for approximately 2 % of the total sales in Onix, while Axess only purchases approximately 1 % of total purchases in the category from Onix. There are many substitutes in the market, but since Axess has done specific investments towards Onix and Onix has control over the resource (the service) it is concluded that Axess is the dependent party. As for today's situation, multiple sourcing is difficult to use on ERP-systems but a bilateral monopoly between Axess and Onix might be a solution. According to Kraljic's theory, Axess should seek to secure their supply and thus reduce supply risk. Onix is in a similar situation as IT Nor, where Axess seek to develop new software to replace them as suppliers.

Vertikal Service: Vertikal Service has a balanced relationship with Axess, where the two parties are equally dependent on each other. Axess is dependent on Vertikal Service due to the low level of substitutes and the importance of the resource they are providing, there are also high entry barriers for new entrants. Vertikal Service is dependent on Axess because they have made specific investments in this relationships and because Axess' high share (22 %) of purchases from them. Vertikal Service operates in a market where there are few good enough providers of this service, and Axess should seek to regularly evaluate their performance. Kraljic suggest partnership as a strategy, which is suitable with the criticality of the provided services. It is recommended that Axess closely monitors Vertikal Service, and seek to regularly evaluate them. The accounting numbers for Vertikal Service show

that they are growing fast and have recruited new employees lately. They are fairly new in the industry, which probably make them eager to fill their capacity, on the expense of becoming Axess' competitor.

Vinde: The relationship with Vinde is balanced. Similar to the other suppliers who have balanced relationship, it is the low level of substitutes and the high entry barriers for new entrants that cause Axess to be dependent on Vinde. Vinde is mostly dependent on Axess due to Axess' large share of purchases (in total 45 %) from Vinde. Due to this high share of purchases, together with Vinde's specific investments in the relationship, Vinde's bargaining power is low. Vinde is in a market situation where they provide differentiated services and with a couple of suppliers in the market, multiple sourcing should be selected as a strategy. Vinde recently hired an employee with the most demanded competence from Axess, they also said that they were tired of Axess cancelling projects close up to project execution, so it is assumed that Vinde will try and fill all their available capacity, by being Axess supplier or in competing business with Axess. It is recommended that Axess seek to regularly evaluate and monitor this supplier. Kraljic suggest partnership as a strategy, which is suitable with the criticality of the provided services.

WWS: Similar to the suppliers of personnel, WWS also have a balanced relationship with Axess. Axess is dependent on WWS due to their "monopoly" in the market, but also due to their relationship history. Axess' purchasing share of WWS' total sales are marginally larger than the other way around, which makes WWS marginally more dependent on Axess as a customer. It is also important for WWS to know that Axess always returns to them as a supplier, because the collaboration lead to an increase in their workload. It is recommended to use single sourcing with WWS due to the homogeneous products with low variations in quality and the strong position of WWS in the market. According to the theory of Kraljic it is suggested with long-term commitment/partnership as a strategy, which seems reasonable with single sourcing and their already strong relationship. The establishment of a formalized framework agreement that was recently put in place is a step in the right direction.

Waage: Axess has an unbalanced relationship with Waage, where Axess is the dependent party. Waage is responsible for approximately 58 % of Axess' purchases within transporting services. The services provided by Waage are not as critical as the services

provided by the suppliers of personnel and there are many potential suppliers to choose from, but Waage is providing extra customer service that adds value to Axess. It is difficult to recommend a strategy for Waage due to their merging with SR Group last year, but assuming there will be few changes in how the business is done, it is recommended that Kraljic's strategy of "category management" should be applied. This is also consistent with the need for single sourcing due to homogeneous services and in order to economize on the transporting costs. The establishment of a contractual agreement will to some extent safeguard Axess' dependency condition in relation to Waage, and is recommended for Axess to implement.

8.0 Further Research

This chapter presents an overview of further research that could be conducted in order for Axess to achieve a more structured purchasing function and better relationships with the suppliers.

First of all it could be useful to conduct a similar research study with the correct accounting figures (all from the same year), and investigate if the data used are reliable and thus if the results are consistent with the first research study.

One alternative for further research is to interview even more suppliers, since they might have opinions about additional aspects than the suppliers that are already interviewed. Another possibility is to include the customer perspective, and investigate how they may affect the choice of suppliers and if they influence the supplier relationship Axess have. By including this perspective it provides both the researchers and the readers with a holistic perspective, and thus other factors that affect the supplier relations and strategies might be uncovered.

This study has an explanatory research design, which seeks to answer why or how certain events occur. As an alternative for further research it could be applied other research designs, such as exploratory research design which investigate various phenomenon. This might reveal other aspects or contexts that have not been revealed in this thesis.

One final suggestion is to include the international aspects of Axess organization. There might exist cultural differences that affect the buyer-supplier relationships, which lead to other recommendations than what is found in this thesis.

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Appendix 1 – Depth Interview

Interview with Procurement Manager, Ole Kristian Blindheim

AXESS

How many employees are there in Axess Norway and in Axess in total?

In total there are 330 employees. In Norway the numbers are 110 employees in Molde, 70 employees in Kristiansund, about 40 employees in Orkanger, 20 employees in Trondheim and 20 employees located in Bergen. Then it is 50 employees in Brazil, 5 employees in Singapore and in Axess North America (which include both Houston in USA and St. John's in Canada) there are about 8 employees located.

What is the revenue for Axess?

The revenue in 2012 was about 414 mill NOK, and the goal for 2103 was 500. The numbers for 2013 is not ready yet.

What is Axess long-term goals, and short-term?

In general we aim to reach 600 mill NOK in revenue and to have an EBIT (earnings before interest and taxes) of 10 %. The objective for purchasing in Axess is to pursue good procurement by buying cheapest and best – get the right quality to the right price. Collaboration- and supplier agreements are key to good purchasing. Good and long-term agreements will lead to increased security of supply and the best price in the long run.

What is the most common provided service?

Inspection is the most common service. Which would be services regarding material testing such as Non-Destructive Testing (NDT), certification and re-certification jobs and quality controls.

Who is the primary target group for Axess?

Rig- and oil companies, as well as energy operating companies.

Who are your primary customers?

Some examples of customers are Seadrill, Transocean and Statoil.

What would you say is Axess core competence?

Our core competence is inspection- and engineering services, especially related to maintenance, certification, and recertification, and safe lifting operations. We are renowned for having engineers both in the office and out doing the jobs offshore. Crane and lifting equipment is a core area for us.

What would you say is Axess competitive advantage?

This would be the unique competence that our engineers have. Both engineering and calculation is important aspects in this matter. Especially HSE has a great focus in our company – it is “in our bones”, and a part of our “way of life”. Rope-Access techniques are important and many of our employees like to climb in their spare time, which have made them have a natural focus of risk assessment. Axess prefers to hire people who are doing extreme sports, much due to their views on risk.

SUPPLIERS

What is your understanding of the supply situation of Axess?

I would say that the situation for Axess is twofold. On one hand we have the traditional suppliers of goods & services and on the other side we have the suppliers of personnel. We are dependent on hiring external resources. When the engineer from the office is going to an onshore or offshore installation to do a job, this person needs a team with him. What we have done is to enter long-term contracts and developed a set of standard agreements for suppliers of personnel and freelancers. Freelancers have their own rates, but Axess wants to apply the standard agreements in such situations. These agreements have a normal duration of 1 year and with corresponding rates. These contracts may be negotiated individually, both with freelancers and suppliers of personnel. Vertikal Service and Vinde TT, has been the two of our biggest suppliers of personnel for many years.

In your opinion, what needs to be improved?

It is a lot of work related to the search of personnel with the needed competence. Simply calling around to different freelancers is a huge and time-consuming task. You need to call one at a time, which requires many phone calls. There are great demands for such services, and when others are busy, so are we. We perform many inspection jobs. When doing this it is important to detect potential additional sales. If the field engineer sees that something should be repaired or corrected this should be communicated to the customer as a recommendation and it may lead to a job later on. As an example, National Oilwell have

fixed prices they relate to and preferred suppliers, but it is impossible for us to predict very precisely the expected demand for the coming period and then communicate this to our suppliers, much because of these additional sales that might occur offshore.

In some urgent cases it happens that the supplier is not quality-controlled in advance, which is not good at all. The supplier needs to be familiar with relevant offshore requirements and to be aware of the standard regulatory. Not all of our employees use the supplier register; we therefore have an internal job to do to encourage the use of this register. From now on it will not be easy to register new suppliers, the ones already registered needs to be checked first when choosing a supplier. The objective is to be able to check which suppliers are located in the register, and if the correct type of provider is not registered then one can start to look for other solutions.

What information is important to know about a supplier before choosing it?

We have three main factors we need to think about before choosing a supplier. First, the supplier needs to have the correct competence, such as approved procedures and possibly certifications. The supplier is not required to have certain certifications, like ISO 9001:2008, but it is advantageous. Exactly what types of criteria we require from our suppliers needs to be included in our procurement procedure eventually. Secondly it is important to look at quality assurance. The supplier should preferably have a governing quality assurance system, such as an ISO-certification. Many suppliers tell us that they are “according to the ISO-certification”, but that does not have to mean anything. If you are ISO-certified, for example ISO-9001 then Det Norske Veritas (DNV) has conducted the certification and it is trustable. Last the supplier’s economy is of great importance. We must investigate the economy and how solid the supplier is operating. We are not that good to investigate this yet. A discussion is ongoing right now, whether an economist or not should conduct this work for our existing suppliers or someone else in the organization.

How would you describe the general supplier structure?

We have good access to suppliers today, but a challenge is to find the right supplier in each particular case and thereafter to build a stronger relationship with them. We try to use framework agreements with those suppliers that we use a lot, to try and control the rates a bit more. We are also in a situation where we easily build up our sub suppliers. Suddenly a supplier has become a competitor, and this is unavoidable. It will therefore be a balance

between continuing to work with a supplier or to use someone else in a “weaker” position and maybe not in the same core business area as us. Earlier, we have not been aware enough on “use” or “do not use” among our suppliers.

Can you mention two extremes of supplier relationships?

Since we are not able to promise anything about the upcoming demand among our customers, such as “we are going to need 10 tons of steel next year”, we rarely use framework agreements with this type of suppliers. We have a framework agreement with Tools for delivery of equipment and clothing to our field engineers. This agreement is applicable for all our Norwegian branches, because they have retail outlets all over Norway and deliver directly to us. Then we have Møllerodden AS in Haugesund, which frequently deliver, hook blocks to us – we will have a collaboration agreement with them. We have done a QA audit there just recently, to qualify them for doing overhaul and re-certification of crane hookblocks. On the other hand we mostly do only buying and selling without any form of agreement, but we have good contact and relationships with our suppliers regardless of this. IKM Mekaniske in Stavanger is not our supplier as of today, but we shall visit them in hopes of future collaboration. This is to have a supplier in the Stavanger area, which is a central location for many offshore projects and clients. Our three key factors must be investigated before we agree on something. I do not think that we can have framework agreements with fabrication or manufacturing suppliers. We rather need to get an overview of what the provider can and cannot do, and then obtain information about rates and receive offers in each case.

What would you say defines the most important suppliers?

An important supplier delivers a critical competence (NDT inspection or equipment) or component (i.e. load bearing structure). If the supplier fails in their delivery either timely or on quality, this can have a huge impact on both the end-customer and us. We need to be observant on who we use on our projects and verify whether they have delivered the demanded job earlier on any other projects.

How would you say that your focus differs between the different suppliers?

We need to have better communication with the most critical suppliers, compared to the ones that are less critical. We need to conduct a careful revision of the suppliers and have a procedure to meet the most critical suppliers at least, on a yearly basis. If we identify any

matters in the revision of a supplier, we must evaluate if they are doing anything to improve or if the collaboration should be cancelled. We also need to consider if we should spend time on helping the supplier to develop. There are many factors that need to be evaluated. This is regulated in our QA procedures.

What do you mean suppliers should be measured by?

They should be measured by reliability and ability to deliver, economy and prices, delivery specification and responsiveness. It is also important to know how fast and how often the suppliers are able to deliver. We need to be able to get in contact with the supplier fast prior to the project, and then we need to look back to evaluate if they delivered according to our expectations.

How do you follow-up the suppliers?

The project manager is responsible for the follow-up on project level. If there are large and complex projects that require a lot of monitoring of suppliers, we are able to use additional internal resources. It is important to detect how the project manager should plan and execute this following-up of the suppliers on the larger projects. The customer as well often wants to monitor the process on different points.

How can value-added in Axess be further increased by the suppliers?

Perhaps by trying to control the search for suppliers of a more general range, as well as several supplier agreements. We should also try emphasizing the fact that we have established framework agreements with various customers. An alternative would be to find a certain amount of suppliers who covers an area, and establish framework agreements with these. It is easier for the offices to have suppliers located nearby, so that the travel costs does not exceed the income.

Why do you think it is important to organize/structure the suppliers?

It is important to structure the suppliers in order to know which suppliers are classified for use and also to save time. It is especially important to save time when it comes to finishing offers that we are sending out to win projects. It is important to know whom you should use, and then effectively retrieve prices and information. Many people spend a lot of time searching and getting prices, and often need to increase prices in the offers to cover for

variations in price from a supplier who has not provided feedback yet. We still have much to learn in this area.

What do you know about how the suppliers price their services?

Not sure. We are unable to benchmark the suppliers on this area. We must focus on getting more suppliers on the same job, and then compare them against each other in order to explore this.

How do the negotiations take place? Initiated by Axess or suppliers?

This happens on both Axess and suppliers' initiative. Now in December we invited some of the suppliers here to go through the past year. It is also important to talk about the future perspective, and communicate to our suppliers what our conditions and requirements are.

What is mostly focused on during negotiations? (Price, quality, delivery...etc?)

Most of the time it will be rates and prices that are subject in the negotiations. But if something has not been as expected in the delivery of a project it will be discussed.

THE MARKET

How would you describe the market where Axess operates? (Many competitors, too many providers, unstable etc.)

There is some competition in the market. But there are many who offer either access technique (TT) or non-destructive testing (NDT), but less that offers both.

Who is/are the main competitor/s of Axess?

I do not dare to comment on that. However, there are often many competitors operating in different areas, and many different companies covering parts of the areas Axess operates in. To mention a few, we can say Oceaneering, and Aak.

PURCHASING PROCESS

What would you say that strategic purchases are about?

Strategic procurement in Axess is about the dual aspect of suppliers as mentioned earlier; personnel versus the traditional suppliers. We need to ensure access to sufficient resources and having enough suppliers to use. On the other hand, it is important to have a closer dialogue and a more exact revision of the suppliers. At present we use a new supplier from

time to time, and are unable to obtain prices in time to inform the customer about this in the deals we write. For personnel suppliers the rates are the most important, while for component- and fabrication suppliers the close dialogue is most important. In this area we are unable to provide the quote before we have a concrete case.

What would you say that the focus (objectives) to the purchasing departments in Axess is?

The objective of procurement is that we should make good purchases, as well as being the best possible. Buying as cheap as possible, right price and right quality. But the right quality is just as important, and we do not just choose cheap because it is cheap. I think supplier collaboration is the key to this. We must have good long-term agreements for this, to ensure security of supply. The investments are not measured in any KPIs at the moment, but we are working on this. It is natural to have something on this soon.

How would you describe the purchasing process of Axess?

The purchases happen within the projects, and thus it is the project manager and the staff he/she disposes is responsible. There are very few purchases that go through me.

What are the most critical purchases that Axess makes?

All purchases happening in the projects, and ensuring progress there. The most difficult purchases are the ones that require QC and follow up of progress. These can often be critical (loadbearing structures) when it comes to client requirements (NORSOK) if it is on a Norwegian offshore project. This is not a very developed competency in Axess, and will be an important role for me to help develop, as this is what I was working with at NOV.

What challenges would you say that the purchasing departments face?

I feel like I don't have time to do it all, especially work that is linked to improving the system, such as revision of all suppliers. The challenge will be how to develop a functioning "purchasing department" with the resources in the other departments taking their different tasks and responsibilities in procurement.

Do you use any information system to store all the information? Are these systems good enough?

Everything happens in Excel sheet as of today. In the future it will be appropriate to implement a procurement system. The ERP system is on Agresso, so the natural choice would be to implement the Agresso purchasing module. Onix is the information system for personnel.

Hire of personnel; how have this taken place? Coordination? Project manager?

Department manager?

All hire of personnel should go through "Coordination-team, which is responsible for the allocation of personnel resources. It is strictly forbidden to go outside of this system, and no one should allocate resources themselves.

How does it affect the purchase/purchasing department that the project manager is responsible for ordering, monitoring etc.?

Project managers usually have no expertise to bargain the prices, but it is very important that they have the technical expertise on what needs to be delivered. It is important to include the requirements and expectations of the project in the delivery, and I sometimes join in on the specification process to ensure the delivery.

DEPENDENCE

Do the agreements with the same supplier change a lot from year to year? (How often does it change?)

For those suppliers who have agreements with Axess, the agreements usually run continuously with little changes from year to year. The prices are normally adjusted on a yearly basis. Some have also adjusted their prices every 6 mnts.

Does there exist different types of bindings in relation with customers or suppliers that make it difficult to handle the relation?

Not that I know of. It may be that some customers have a preferred supplier list that makes them want us to use certain providers or give us tips on using a special workshop. Often the customer is still careful to make such recommendations, and I think this has something to do with price.

Does there exist specific investments / bindings / agreements in the supplier relations?

Not that I know of. For example, we have not demanded that our suppliers must have certification, but we may occasionally recommend them to do various things to improve. Our criteria are to be guiding for the evaluation and selection of suppliers. Especially in relation to the criticality, which will be in purchasing procedure.

What do you mean is the most important/significant that we should uncover in this thesis?

That you look at the vendor selection and the list of suppliers, and use theories regarding the strategically important suppliers, classification and grouping of suppliers to find a solution. I am very curious about the theoretical anchors. What we have of written procedures now is only rooted in experiences. Would like you to say something about where we are in relation to theories, that you come with some tips and advice on what we can do in relation to the various suppliers. What we do with volume suppliers and strategic key suppliers for example.

Appendix 2 – Interview Guide External

Bedrift:

Ansatt:

TCA

Frequency

1. Vil du si at Axess er en hyppig kunde hos dere?
 - a. Er det noe mønster – sesongvariasjoner eller jevnlig?

Har dere avtale med Axess per i dag?

- b. Hvis ja: Hva skulle du ønske var annerledes med denne avtalen?
 - c. Hvis nei: Er dette noe dere kunne tenkt dere å inngå per dags dato?
2. Hvordan ønsker dere å samarbeide med kundene deres? Fokus på transaksjon eller relasjon?

SPI

3. Har dere gjort noen spesifikke investeringer/tilpasninger for å kunne levere som avtalt til Axess?
 - a. Hvis ja: Har du eksempel på dette?

Complexity of trade/uncertainty

4. Hvordan blir dere involvert i sluttprosjektene som Axess har styringen over?
5. Hvor god tid vil du si at dere får til å planlegge prosjektene som dere får i oppdrag fra Axess?
 - a. Må dere ofte avslå forespørsler fra kunder pga kapasitetsmangel?

Market

6. Hva er ditt syn på markedsutviklingen i denne bransjen?
 - a. Vil du si at konkurransen innenfor det dere tilbyr er svak/sterk?
 - b. Hvordan vil du si at forhandlingsmakten i markedet er?
 7. Vil du si at det finnes andre gode substitutter for deres tjenester?
 8. Hvem vil du si er deres sluttkunde?
 - a. Hvem er deres største kunde?
 9. Hvem/hvilke vil dere si er deres hovedkonkurrent?

RDT

Uncertainty/risk of supply

10. Foretrekker dere å kjøre egne prosjekt, eller å være leverandører til et prosjekt?
 - a. Hvorfor foretrekker dere det?

Interdependence

11. Hvor stor andel av deres salgsinntekt vil du anslå at Axess står for?
12. Hvilke konsekvenser det få dersom dere kuttet ut Axess som kunde i dag?

Relational theory

Complimentary resources

13. Har samarbeidet med Axess medført at dere har oppnådd noe som ikke ville vært mulig på egenhånd, for eksempel mer-salg eller innovasjon?
 - a. Hvis ja: Hva vil du si har bidratt til dette? Hvordan har dette påvirket relasjonen til Axess?
 - b. Hvis nei: Har du forslag til hvordan samarbeidet kan forbedres?
14. Hva vil du si er deres kjernekompetanse?
 - a. Hva tror du at kundene deres verdsetter ved deres bedrift?

Knowledge sharing routines

15. Deler dere viktig informasjon mellom deres bedrift og Axess som bidrar til et bedre samarbeid?
 - a. Hvis ja: Hvilken informasjon er dette? Hvordan deler dere denne informasjonen? Hvorfor deler dere?
 - b. Hvis nei: Hvorfor deles ikke slik informasjon?
16. Mener du at dere har tilstrekkelig med informasjon om forhold rundt Axess for å kunne ta gode avgjørelser?

Trust

17. Vil du si at Axess holder sine løfter?
 - a. Hvis ja: På hvilken måte? (pris, leveranse, osv.)
 - b. Hvis nei: Hvorfor ikke?
18. Vil du si at kontaktpersonen i Axess som bidrar til et bedre samarbeid?
19. Alt i alt, hvordan opplever dere samarbeidet med Axess?
20. Er det noen andre forhold som bør komme frem og som vi ikke har spurt om?

Appendix 3 – Interview Guide Internal

Ansatt:

1. Hvilke av topp ti leverandørene har du/har hatt kontakt med? Kryss av.

Topp 10 leverandører

- IKM Mekaniske Kristiansund
- IT NOR
- KAM Lifting Consult
- ONIX AS
- Rig Access AS
- Vertikal Service AS
- Vinde Tilkomstteknikk AS
- Water Weights Scandinavia AS
- Waage Transport AS

TCA

Frequency

2. Vil du si at disse leverandørene blir hyppig brukt?
 - a. Er det noe mønster – sesongvariasjoner eller jevnlig?
3. Vet du om det foreligger noen avtale med disse leverandørene per i dag?
 - a. Hva skulle du ønske var annerledes med denne avtalen?
4. Hvordan ønsker du å samarbeide med leverandørene? Fokus på transaksjon eller relasjon?
 - a. Hvordan er samarbeidet i dag?
 - b. Hva kunne vært annerledes?
 - c. En fordel om det hadde vært et tettere leverandørsamarbeid?

SPI

5. Har du eksempel på at Axess har gjort noen spesifikke investeringer for å forbedre et samarbeid med en leverandør?
6. Har samarbeidet med disse leverandørene medført at dere har oppnådd noe som ikke ville vært mulig på egenhånd, for eksempel mer-salg eller innovasjon?

Complexity of trade/uncertainty

7. I hvilken grad involverer dere leverandørene i prosjektene som Axess har styringen over?

8. Opplever dere at leverandørene får tilstrekkelig med tid til å planlegge prosjektene som de får i oppdrag av Axess?

Relational theory

Complimentary resources

9. Hvordan opplever dere samarbeidet med disse leverandørene?
10. Hva vil du si er disse leverandørenes kjernekompetanse? // Hvorfor ble akkurat disse leverandørene benyttet?

Knowledge sharing routines

11. Deler dere viktig informasjon med disse leverandørene?
a. Hvordan deler dere denne informasjonen?

Trust

12. Vil du si at disse leverandørene holder sine løfter?
13. Vil du si at leverandørene deler informasjon som bidrar til et bedre samarbeid? Gi eksempel.
a. Opplever du konflikter med leverandørene fra tid til annen?

RDT

Uncertainty/risk of supply

14. Vet du om noen av disse leverandørene kjører egne prosjekt mot de samme kundene som dere gjør?
a. Hva tenker du om det?
15. Vil du si at disse leverandørene lett kan erstattes/lett å finne lignende tjenester/produkt andre steder?

Interdependence

16. Hvor stor andel av totale innkjøpskostnader vil du anslå at denne/disse leverandørene står for?
17. Tror du det vil få noen konsekvenser dersom denne/disse leverandøren(e) ble tatt vekk fra leverandørlisten?

Market

18. Hva er ditt syn på markedsutviklingen i denne bransjen?
a. Vil du si at konkurransen innenfor det dere tilbyr er svak/sterk?
b. Er det lett å finne substitutter for disse leverandørene?
19. Hvem/hvilke vil dere si er deres hovedkonkurrent?
20. Er det noen andre forhold som bør komme frem og som vi ikke har spurt om?

Appendix 4 - Summary of External Interview

Company: IKM Mekaniske Kristiansund AS

Employee: Vidar Olsen, Project Engineer

This year the winter has been slow, but as always we expect the demand to increase during spring and summer. According to my experience the offshore industry is extremely fluctuating regarding demand and production. If Statoil decide to stop using a supplier, there will be huge consequences for the supplier. The industry consists of strong competition, where the customer often holds the bargaining power regarding price, delivery terms and production method. But the industry is restricted by strict regulations and standards that need to be followed during the production process. There are few, if any, substitutes for the products of IKM, but there are a couple strong competitors, such as Aak, Aak IRV and Vigor.

Our customers are customers such as Axess, who have been a huge customer the last couple of years. We recently re-negotiated our agreement on personnel with Axess, and we are happy with it. Our focus on cooperation with the customers mainly lies in the relationships. Because we are ISO-certified regarding welding the sub-suppliers needs to be approved every other year, thus it is easier to cooperate with customers based on relationship.

So far we have not made any specific investments in order to deliver to Axess, besides using storage space that we had available. Everything that is produced to Axess needs to be tested, and thus the storage space is used for this. So far in the cooperation with Axess we have only acted as supplier of parts, but if there are large projects we might be responsible for both documentation and fabrication while Axess are responsible for the control of the project.

Since the industry is characterized by fluctuation we feel that the available time to plan a project is not determined by Axess, but by the end-customers. Because of our competitors in the area we cannot afford to turn down PO's from customers due to lack of capacity etc. Since our administration is small we prefer to deliver to projects instead of running the projects. We could run the projects, but then we would need to hire personnel.

As I mentioned above, Axess is an important customer for us, and I would estimate that they are responsible for approximately 30 % of our total sales. Thus it would lead to huge consequences for us if they were cut of our customer-list, because it is difficult to find new customers where the cooperation is so good.

Our close cooperation with Axess has lead to better production, better welding etc. This is due to the close contact with the engineers at Axess, who work to improve the construction of the products. Our contact with Axess is much closer than the contact with other customers. Our core competence is welding and metalwork, but the fact that we deliver both documentation and product is highly valued by our customers. In addition, Teknisk Institutt (TI) revises us each year due to our ISO-certification, which again assures our customers that our products are the correct standard. So far we are very happy with the cooperation with Axess, and out experience is that Axess keeps their promises and that the cooperation is characterized by close contact, open dialogue and “open doors”, Sølvi Slåtten and Ole Kristian Blindheim have contributed to this close cooperation.

Appendix 5 - Summary of External Interview

Company: Water Weights Scandinavia AS

Employee: Jan Kristoffer Mathiassen

We are working in an industry where we expect to have enough work, but it is dependent upon the increase of the Norwegian continental shelf activities. The future prospects are positive, and there seems to be a lot of work. We have been in this industry for approximately 33 years and we have specialized our scope of work. We believe we are very competent at what we do, but there are constantly new innovative ideas that increase the competition in the market. There are approximately 5 to 6 small actors in the business but most of them are not considered a threat because our business area is not their main activity. This means that they are not specialized in these areas, and there are companies who deliver imitations of some of the equipment we offer. This is not enough to consider them as a strong substitute. It may be compared to driving a Mercedes and a Lada – they are both cars, but of different standard.

Axess is one of our largest and most important customers, even though this varies on a yearly basis. They receive a discount of 50 % from us, and we are even willing to rent the equipment out for free to Axess if we know that it would lead to Axess succeeding in maintaining their customer resulting in repeat orders for both of us. I would estimate that Axess stands for approximately 6-9 % of our total sales.

We recently established a framework agreement with Axess for the first time. Up until then the cooperation was based on mutual loyalty, dependency and a well-balanced relationship. Our business model is not necessarily based upon making the most money, but ongoing mutual good business. Since we spend a lot of time on establishing good relationships with our repeat-customers, we also spend a lot of time training new users of our equipment in these companies. We feel we have such a good professional working relationship with Axess giving mutual benefits that we expect this to continue for many years. We have limited amount of marketing, and are after 33 years mostly based on track record and “word-of-mouth”. The Water Weights Group is present on shows at all the major exhibitions worldwide.

We would say that our core competence is the rental of equipment, and we believe that there are two factors that are appreciated by our customers. The first one is the equipment where the requirements for quality and documentation are fulfilled. Second we believe it is our high degree of service and we have an ongoing internal quality control to enhance this where possible. Our relationship with Axess has not lead to synergy effect in terms of innovation or additional sales and since we are only 4 employees working in the administration it is restricted how much it is possible to do, but we see the potential in the relationship. For now we choose to focus on our core products.

We, without hesitation, claim that Axess is very trustworthy customer, are easy to cooperate with and we trust that they treat our equipment with care. Axess is also aware that we are not interested in becoming Axess' competitor and not acting opportunistic in any manner, which is why there is a good information flow between the companies. The information that is being shared may be information about the customers, information about the equipment and how it should be treated and also about tenders. Since Axess is such a good customer it is important for us to make sure we turn every rock in order to help them succeed to our mutual benefit. We have the last two years renewed our equipment in order to deliver the newest technology in our electronics areas, and we strive to be ahead and up to date on any improvements. This may be viewed as a specific investment towards Axess. At the moment we have equipment for approximately 50 MNOK in our storage. In addition we have not had any accidents with our equipment in 33 years, which may be a security for Axess.

In addition as part of our agreement we can arrange delivery from any of our locations and storages world wide with a discount, so if Axess need equipment tomorrow in Africa or Singapore this will not be problem. Axess will receive equipment they are familiar with as the group operates with the same equipment.

We accept that Axess need to cancel written orders from time to time, since this is not a common occurrence in these circumstances. Axess would not be charged with a cancellation-fee, as we do for other customers.

Appendix 6 – Summary of External Interview

Company: Vinde Tilkomsteknikk AS

Employee: Jørn O. Halvorsen

The competition in the market is strong, but there are several providers of the same services. After my opinion there are no good substitutes for what we provide. In our cooperation with Axess I would say that Axess holds most of the bargaining power, but we have grown the last two years and thus our bargaining power have increased. Axess is the one who receive our invoice and is our customer but we are aware that it is companies such as Dolphin and Statoil who are the end-customers. Our largest customer is Bilfinger. Vertikal Service AS is one of our largest competitors towards Axess. Langset and Norwegian Offshore Group are even bigger providers of the services, but we have not noticed any competition from them yet.

Axess is a customer with us on a regular basis, but there are definitely variations in demand due to the different seasons. There is usually nicer weather in the North Sea in the summer than during winter, which leads to better working conditions for our rope access technicians. We used to have a frame agreement with Axess, which have been binding from 2008-2009 up until now. We are in the middle of a renegotiation right now.

Our goal is to cooperate and develop as close as possible with our customers, and also to have few but good customers. The geographical location of our customers is not as important for large customers, such as Axess. We only act as sub-supplier to Axess, but we also run project on our own where we act as suppliers. We prefer to run our own projects onshore, while acting as sub-supplier in projects offshore.

We have made many specific adaptations in order to deliver as promised to Axess. We have offered various courses and education to our employees, in addition to recruiting people with the needed competence. Axess sets requirements to both competence and equipment.

We are not involved in the end-projects run by Axess. They plan the entire project and turn to us with a request for personnel. When Axess calls us they usually want the needed personnel yesterday, which means that there is not a lot of time to plan the projects on our behalf. There often is some communication back and forth regarding the requirements and

delivery, and then it is usually canceled. It is difficult with such unpredictability and we wish that we were much more involved in this process. We have discussed this with Axess. Sometimes we have had to decline requests from other customers because we are fully booked. Axess can keep our personnel booked, but then cancel the trip just hours before departure.

It is difficult to estimate how much of our revenue Axess is responsible for, due to annual differences. I would estimate that Axess was responsible for approximately 90 % of our revenue a few years ago, but at the moment I do not think it is more than 10-15 %. This might change in the future.

The economic part of our cooperation with Axess is not very interesting. The rates we offer to Axess are the lowest we have offered to anyone, and we do not receive compensation if Axess cancels the order. If we cut Axess as a customer we would simply make more money, but due to old friendships we keep delivering to them. Cooperation with Axess has over the years made sure that we have achieved something that would not have been possible on our own. We were totally dependent on Axess the first 4-5 years, and it is thanks to them that we got to establish ourselves against the offshore sector. Axess was the main earnings for us for many years, and up until 2012-2013 Axess was very involved in the development of our business.

Our core competence is rope access technique. Our employees are highly qualified, where there are many with craft certificates and many with long experience. The fact that our security-leaders speak Norwegian is an advantage, and I think they are difficult to find with others.

We do not share a lot of information between Axess and us. It has been focused on not sharing information the last couple of years, and this will not change with today's situation. On a general basis one might say that the large actors do not like to share anything. We have the opportunities to become a competitor of Axess, which Axess is aware of. I believe that Axess has more to lose than to gain by sharing information, and that is why they do not do it. We believe that information should be shared in order to promote cooperation. Axess probably has more to gain by achieving a more effective organization.

I think we have a sufficient amount of information about Axess in order to make good decisions, and believe that we have what it takes to create good relations. We do have long experience with Axess, and we have frequent meetings about cooperation that are very good.

We deliver according to what Axess wants, but we have issues with the descriptions of procedures. As a specialist on rope access techniques we have a special procedure that needs to be followed. When we work for customers who are also engaged in rope access techniques we are required to follow their procedure for rope access techniques. In approximately 95% of the cases we work for customers who own such a procedure, and let's say 5% of cases we use our own procedure for this. We do not receive Axess' procedure, either before or after a project, which I think is unheard of. I believe that Axess will have huge problems if something were to go wrong.

The planning in Axess is very messy, and I do not think that Axess always keep their promises. I was told five years ago that Axess signaled that they would focus more on our company, but I have not seen this happen yet. We need to start taking an administration fee for cancellations, since there are an awful lot of cancellations that leads to additional work and expense for us.

We have a dedicated contact person in Axess, which we are pleased with and who contributes to a better working relationship. The regular meetings of cooperation that we have with Axess is very good, but we wish that it would be more predictability in the planning of projects, and that we became more involved. We want to have closer cooperation and do not want Axess to look at us as a potential competitor.

Appendix 7 – Summary of Internal Interview

Employee: Ole Kristian Blindheim

Title: Procurement Manager

We are trying to establish a network of suppliers connected to our office locations in Norway that are able to provide us with everything we need within the different services we have. By associating us with different suppliers both in Trondheim, Bergen, Molde and Kristiansund, will let us use our personnel at each office location to follow-up the suppliers, which is often a crucial part of the project management.

Close supplier collaboration for Axess would be to have regularly meetings with the supplier to have a review of the previous cooperation. It is important not to only engage in a dialogue when collecting information in a tendering phase, but to have regular meetings, such as yearly meetings or audits.

Right now we are discussing the conditions for a new agreement with Vinde. The negotiation is not finished yet, but we are satisfied with the cooperation with them and there is a good match between their personnel and ours. Vinde have expressed that they want a closer relationship with us. At the same time they want more predictability regarding demand. It is almost impossible for us to predict anything about the upcoming demand or if any project is about to be cancelled. This is because it is our end customer who dictates what happens or not. We do not operate with a backlog such as many other companies, and we therefore cannot commit to anything. However, we could try and have a more open dialogue. We have told them that we want to prioritize them, but then the rates they offer us must reflect this.

The cooperation with WWS has been there since Axess started up in 1998. There has been no formal contract, only a simple agreement with price terms. There are few good substitutes for WWS products and services in Norway. Westcon has some of the same products, but not in the same scale. Axess is a relatively large customer for WWS.

As much as 30-40% of my time right now goes to renegotiation of contracts with Norwegian, and a couple of foreign, personnel hiring companies. We have determined

some terms and conditions that has generated lots of questions from the suppliers. We have initiated a dialogue with a foreign company called Mactech regarding long-term rental of personnel for up to six months. But then we need to make a deal committing to a minimum amount of hours during that period. A six month period of work in the UK is containing of more hours than a six months period in Norway. They use a whole different legislation outside of Norway, and they are used to longer working days abroad. In Norway we have a much stricter regulation in terms of working hours, shifts and time off work.

We also hire freelancers from abroad, mainly UK. But in these cases it is easier to hire personnel via a hiring company. In that way we only communicate with that company, instead of with the individual freelancer, which is very time consuming for our personnel coordinators.

We often have to hire personnel with a combined competence in rope access technique and NDT competence. This is a combination that our projects often require. In Norway we need to follow the SOFT-regulations for climbing and rope access, while the international regulation is called IRATA. International personnel with IRATA-certification need a SOFT-certification to work in Norway, and vice versa. We often hire international freelancers on our projects that are executed in UK or other countries, since they require IRATA.

We are trying to use Norwegian personnel hiring companies as far as possible, but it will always be the price and the availability that determines if a supplier is chosen or not. This year we have between 10-12 freelancers in our staffing pool. The contracts with the personnel hiring companies are a bit tricky, because we cannot make any promises about the sales or demand for an upcoming year. We are not able to say anything about the volume.

It is important for us to know exactly what kind of competence our suppliers have in their staffing pools. There are many forms of NDT competence with different levels of expertise within each field. We have clearly stated what kind of competence we need directly to Vinde, and we are dependent on knowing exactly what competence they are able to offer us. I know they have employed NDT personnel with climbing skills not long ago.

We do not have so much information to share with our suppliers, since we cannot promise anything regarding the demand. But it is important to always keep our suppliers informed if we know that anything is happening. If we know that something big is going on, we could notify the supplier and try and give some kind of estimate. But we do not share specific project-related information.

Appendix 8 – Summary of Internal Interview

Employee: Kurt Arve Trang

Title: Group Leader Warehouse in Kristiansund

Since I work at the warehouse we mainly supply to internal projects. Therefore we do not experience the competitive arena in the same way as other departments in Axess.

Dacon is a provider that my department do not use as a supplier that much. They actually call us to rent equipment now and then.

We hire water weights for use in load tests from Water Weights Scandinavia at a regular basis, but then it is Stein Arne who manages all the logistics with them. There are few, if any, good alternative substitutes for WWS today. I would say that they are the sole provider of this in Norway.

Our Logistics Coordinator is in contact with Waage Transport several times per day. They are a large provider both local and national and they have become even bigger now as they have become a part of SR Group. They still have a very local connection with a branch office in Kristiansund. Waage Transport earlier represented approx. 1 MNOK in transporting costs for Axess. They probably have a lot of other customers. I know that they handle the logistics for Transocean, which most likely is a large customer for them.

We are in a good bargaining position relative to Waage, because there are many substitutes for their services and it is easy to find alternatives. But we want to be faithful to those we are cooperating with and Waage exercise great flexibility and make us want to use them instead of the larger carriers like Bring. We have an open dialogue with Waage regarding changes in orders. If we suddenly need an express delivery, they are usually very accommodating on price. I have the impression that they are always trying to help us, but of course within reasonable limits. If we contact them and order a delivery in the last minute to Bergen and they have a car leaving for Bergen the next morning, we could get our delivery on that car, but to the normal price. Talking from experience, when ordering from Bring in the last minute, you also need to pay for express delivery.

I would say that we have a very close cooperation with our suppliers, especially with Waage. But any closer cooperation I do not think is necessary. The next step would be to

simply have a written contract with them. We do not have any written and formal contract with Waage. We would clearly have something to gain by formalizing a contract with them, at least in the long run. I know they offer us decent prices but we do not have any of this in a written agreement. We have talked to them about establishing an agreement, which they were interested in. We do not have any meetings face-to-face, mostly contact over the telephone. If we are about to have a more formal contract, then we should probably have regularly meetings and audits.

We have had a regular dialogue with Waage about procedures, ordering and tracking, to get the best potential service from them. They are very accommodating and service minded. They offer us very good customer service and exercise great flexibility in our projects.

It would have been very noticeable if Waage were removed as a supplier. If we were to use other transport carriers I would be more concerned about the flexibility. I am afraid that large suppliers, such as Bring, Kuehne Nagel and Panalpina, which do not have the local connection, would not be able to exert the same flexibility as Waage Transport.

We are not able to search for prices each time we need a transport service. We turn to Waage straight away because it is simple and we have established routines with them. Waage is a vendor you can trust; they keep their promises, both regarding price and safety of supply. What we are able to save by obtaining prices from many suppliers before selecting one is probably minimal, because it is relatively small deliveries we have. It is not big modules we need to transport, only pallet goods. So no massive savings on these deliveries I would say.

Most of the deliveries made by Waage go by road transport, but they also offer sea and flight transport. When sending shipments by boat, Waage uses a third party logistics provider called SeaCargo. However, we only relate to Waage, because of the established routines and contact.

The long-term plan is to get a more formalized contract with Waage. Then I know we would be able to push the prices down a bit. A written agreement would be suitable for both of us and is something we should have in place.

Appendix 9 – Summary of Internal Interview

Employee: Sølvi Slåtten

Title: Project Manager, Engineering and Construction

The competition Axess meet varies between the different sub departments in Axess. For some services we need to keep our prices low, while we are able to be more selective and exclusive for other services. Axess has many competitors. Linjebygg is a large competitor, especially on the personnel part. Veritas is a competitor on the competent jobs, while National Oilwell is a competitor for the crane department. There are all over many competitors for the rope access jobs. Axess is not identical with any of these competitors.

The bargaining power in the market is changing. Up until now the customer has had such a great need for our services that we have not needed to obey all their dictations. While at the same time I might receive a phone call from a customer who complains about an invoice and the number of working hours spent on a project. I understand it as a threat from them. Right now it seems like there is a balance in the bargaining power. Statoil is a big customer that has experienced poor results lately. It will be interesting to see how the autumn will be.

I started to use IKM by a coincidence, because I heard someone was talking about them here in Axess. So far, there have been very little negotiations with IKM. They base their rates on a steel price and centimeters welded. We are supposed to obtain quotes from three different suppliers when we have a project that includes fabrication, but we do not always do this. My projects are often urgent and with little or no time for planning well in advance, so I feel it is safer to go straight to IKM. They are not the cheapest, but I use them because I know what I get. They are located close to Vestbase and our warehouse in Kristiansund, which also is advantageous.

I often use IKM as a supplier on my projects. That is because I have visited them and gained a good personal contact with them. They are not a large provider, but I really feel that they are listening to our needs. They are very tough in price discussions, gives no discounts.

It is not easy to find substitutes for IKM services. But much of this is due to their competence about how we want to have the documentation and our procedures. The first time you use a supplier you will always have to use some extra time to tell them how you want things done. I have worked a bit with Nordvest Sveis, they are cheaper and closer located to us, but they need additional support regarding the documentation process, which is very time consuming for me.

It would be a good thing to have several suppliers to choose from, especially if we know that IKM is working on a big project, we can delegate other projects to other suppliers to avoid any delays.

We have an agreement with IKM about general terms and conditions that are attached with the PO we send them related to each project. It would be positive if we could be able to simplify the pricing of the service. When I write offers that is to be sent to customers it is difficult to predict small adjustments and additional work that will give an extra cost. We have experienced that the estimate for a job that has been sent to a customer in a quote actually has been tripled from the offered price. We should try to avoid this and give a more realistic price to the customers right away.

The cooperation with IKM is very good. They are very service minded and good with the documentation and administration part and always available after normal working hours. We are usually serving a very demanding MMO customer and it is therefore important that the supplier also deliver according to the requirements.

We have had challenges regarding changes that appear a long the designing phase. Most of these changes are either sent by email or made over by telephone by someone in Axess. We got comments from the supplier that they feel it is difficult to know what it the last updated revision of the design. Because of this we always send a transmittal letter when there are changes in the design. This letter says what revision the design has and then the supplier signs the letter.

It would be beneficial to have a closer collaboration with the suppliers, at least so that we could get a more predictable pricing of our their services and therefore be able to price ours service better to the end-customer. I think it is important not to have any written contract that forces us to be exclusive with a supplier. That would probably be a mistake.

IKM have made special adjustments to fulfill our need and requirements regarding the their documentation process. At the same time I feel that we have invested some work in getting them on a level that we want.

Our contact person in IKM is very good at giving us feedback and suggestions if he believes that we are doing anything the wrong way or if things should be done in a different way. He makes it easier for us to conduct the projects and tells us for example if the steel is different to get ahold of or if the selected welding method is very time consuming.

In larger projects the supplier is always involved a lot earlier than if there are small projects. But the planning phase is usually characterized by too little time. Sometimes our customer sets requirements that our selected sub-supplier must acquire in order to be a part of their project. Statoil sometimes demands that a supplier is registered in a register called Akilles.

If something goes wrong in a project it is usually a shared responsibility between Axess and the supplier. We have a QA-system and we require that the supplier have its own QA-system. We also have audits after something goes wrong in a project, where we go and visit the supplier's location. We do not have any other regular meetings with IKM.

I am not sure if IKM deliver straight to any of our customers, but I guess so. They operate within many different segments. They probably have many other customers that are localized close and around Vestbase in Kristiansund.

I use IKM a lot on my projects, but I do not think that they represent any big value for us regarding purchasing costs.

I think we could actually use Nordvest Sveis on fabrication projects as well. But as mentioned earlier, we would need to use more time to train them in how we want the documentation.

I think that IKM is doing a great job and I trust them. But even if I do, I always check the job myself before sending it off to the customer. They always refer to standards and

regulations when they communicate with us, and are in general very trustworthy. They keep their promises and always deliver on time. If a project is delayed, it is usually Axess fault.

They do not hesitate to send us their welding procedure, which is something that many others would refuse to do. MMO companies are very strict on this and emphasize the importance of visibility in these matters. IKM receives the manufacturing drawings from us and are of course able to reproduce the beams we design, but they do not have access to the calculations we conduct. I do not feel any need for us to share any more information than what we already do. The next step would probably be to have some kind of integrated sharing of drawings, but then it would suddenly be a very close cooperation.

I think that IKM got more jobs when Langset moved their office to Sunndal. I would say that this is the reason why Nordvest Sveis also got more to do.

Appendix 10 – Summary of Internal Interview

Employee: Stian Blø

Title: Service Manager, Crane

I would say that there is strong competition in the market where Axess operates. Axess holds a certain degree of the bargaining power in the market compared to their suppliers, but it is important that Axess is not perceived as a dominant player in the market.

Since I work in the crane department, our main competitors are National Oilwell Varco and Enermech. Regarding our suppliers, I am mainly in contact with IKM Mekaniske Kristiansund (IKM) and KAM Lifting Consult (KAM). Axess often uses these suppliers, and KAM is used on a regular basis, while IKM often varies. It is difficult to find substitutes for KAM, while it is easier for IKM. This is also the reason why there is a formal agreement with KAM, but not with IKM. We are pretty happy with this agreement, but we wish some of the prices were re-negotiated.

Our suppliers are selected based on price and deliverability, but once the cooperation is established we focus on cooperating with our suppliers based on relations. This is especially important with KAM since it is difficult to find good substitutes for their products. So far we are happy with the cooperation with our suppliers, and there are few things we would change if we could. We are not interested in closer cooperation with the suppliers we already have cooperation with, but if we are able to find substitutes for KAM we are interested in closer relationship with them due to the need for increased capacity. Axess has previously had conflicts with KAM on a personal level, and adaptations have been necessary in order to achieve a good cooperation.

We try to not include the suppliers in the projects that are run by Axess in order to maintain the control of the project. If there are areas where the suppliers are better than us and are more knowledgeable than we are, such as welding, then the suppliers are involved in projects. KAM and IKM also run projects against our end-customer, and it is important to be aware that they might become competitors instead of suppliers. We are aware that KAM might become our competitor, but IKM do not have the same business area as we do and will not become a substitute for our services. If we were to lose KAM as a supplier it

would lead to large consequences for Axess, while if we were to lose IKM it would not have any consequences for the company. Our cooperation with KAM has led to an increase in capacity, and it is easier for us to sell our services when we know that delivery is possible.

The core competence of KAM is the competence on cranes while the core competence of IKM is their steel fabrication, and that is the reason why these suppliers have been used. Even though these suppliers are considered important to us, there is no information shared between us in order to withhold the possible competition.

As a conclusion I would say that the cooperation with IKM and KAM are good, and they keep their promises regarding price and deliverability.

Appendix 11 – Summary of Internal Interview

Employee: Jostein Borgen

Title: Coordination Group Leader

I would say that there are still some undiscovered opportunities in the market and that Axess does not exploit their full potential. The market is insatiable the problem is that we all need resources in order to deliver. This is an important part of my work, to find additional sub-suppliers. In some services, we are struggling to find adequate resources and in some departments we are not able to hire people because of regulations. But we will sacrifice a lot to meet a customer's need.

Many want to work for Axess and I receive plenty of applications each week. There was a decrease in the market last autumn and many of our sub-suppliers needed to lay off many of their employees, while Axess employed 70 new employees during 2013. Axess has many competitors on different levels. As an example National Oilwell is a competitor on cranes and Vertikal Service is a competitor on DROPS projects. The most critical suppliers for us are the personnel hiring companies and the most critical competence is within NDT.

In my daily work I am in contact with several suppliers, such as Dacon, IKM, IT Nor, KAM, Onix, Rig Access AS, Vertikal Service and Vinde. Rig Access is a part of a company called SolidTech and due to competing business this company should not be used as a supplier anymore. There are some former Axess employees that started up SolidTech.

With Onix and IT Nor we have a form of maintenance contract, where we buy new versions when they become available. We have done some specific adjustments internal in order to use the databases. If we need some help with this database we need to pay for expensive consulting hours, because there are no Axess employee who have direct knowledge about this. It is difficult to know how long time the supplier actually spends on the different tasks that we ask them to do. The IT employees we have in-house tell us that we always have to have in mind that we might get over charged in situations like this. We are right now collaborating with another supplier to create a better-suited database for us to use regarding the coordination of personnel.

Vertikal Service run projects against the same end-customer as we do. We have stated that we do not like this, but actually there is nothing we can do about it. When we hire them on our projects, they get valuable experience from project management that is just the way it is. We try to monitor our suppliers and what they do. Ole Kristian, the procurement manager, is responsible for the audit of the suppliers. Up until now it has been very different contracts with our sub-suppliers, but we are working on restructuring this. The personnel rates differ between the various suppliers. It is important that representatives from Axess have regular meetings with the suppliers. Everyone must be satisfied in order for the cooperation to work properly. It should be one dedicated person in Axess who managed all the contracts, rather than assign this to many different people in the organization.

We are constantly looking for personnel with NDT competence, combined with rope access technique skills. This is the absolutely most critical competence for us. We are discussing long term hiring of personnel with this kind of competence with a supplier in UK. This is a company that is having contact with several freelancers. It is easier for us to enter an agreement with one party, instead of communicating with all individual freelancers. The SOFT regulations are applicable in Norway, while the international regulations, which is applicable for the rest of the world is called IRATA. These two regulations are difficult to combine, and international workers need to take the SOFT course to be allowed to work on the Norwegian Continental Shelf. This is an expensive (about 30.000 NOK for a level 1 course) and lengthy course (you need about 800 hours of practice in Norway to receive the level 2 certification). Additionally, in Norway you often need to follow NS regulations related to NDT-work, while in UK you follow PCN-regulations and in US combined with the rest of the world ASNT are the reigning regulations. This is sometimes a challenge when it comes to hiring of personnel outside of Norway. Some people are also falsifying their certificates.

We want to have few, but good cooperation partners. Our sub-suppliers often want to get a more predictable demand from us, but we are unfortunately not able to give them this. Some of our collaborators might not be satisfied with this.

The highest hiring rate for personnel was during three weeks this March, where the rate was 36 %. Our objective further on is to maintain a high hiring rate. The idea is that the

engineers and work leaders in the different projects teams needs to be Axess employees, but that all other executing personnel could be hired from sub-suppliers.

I know that many of the personnel hiring companies have done specific investments in order to deliver as planned to us. They train their personnel in different courses to get the competence that we need on our projects. After taking a course one must have a minimum of practice hours before you are able to move on to the next level (often level 1 to 3 in the different NDT competences). We are not able to guarantee that the trained personnel from the suppliers will get their needed practice on our projects.

When we receive a request for personnel, the need to send people offshore is often so urgent that we always must be prepared. The personnel with the least experience are often the ones that are not being booked on any project, or only in the last minute. The Axess Operation-department helps us prioritize between the different projects, if we are struggling to find enough resources to send out.

It is important for us to establish a good cooperation and to have a good contact with our suppliers. We sometimes see that other Axess employees contact the personnel hiring companies directly if they are unhappy with something. This can be devastating for the buyer-supplier relationship and therefore we prefer to have the supplier contact ourselves.

We do not share much information with our suppliers. They always ask for more information in order to plan better, but we do not have this information ourselves. They only receive information about the projects they are hired for. The cooperation with some of our suppliers could probably be better.

The suppliers mostly keep their promises. Some vendors have been sending people with the wrong competence to contribute on our projects. Some people are also blacklisted. We are open about these things with the suppliers.

Appendix 12 – Summary of Internal Interview

Employee: Kjersti Sivertsen

Title: Business Controller

I mainly have contact with IT Nor, which is used on a regular basis. This is a supplier with possible substitutes, but it would be difficult to find a new supplier with the same knowledge about the needed unique adaptations within Axess. We are occasionally entirely dependent on the expertise that IT Nor offers and provides. A vulnerable point in this cooperation is that we only have one person who holds the knowledge about Axess, and usually fixes all our problems. If this person were to get sick or get another job it would be difficult to find a new consultant with the same expertise.

I know there is a formal agreement between Axess and IT Nor, but I am not aware of the details in this agreement. I do have some knowledge about a few other customers of IT Nor, but our Chief Financial Officer (CFO) do have more knowledge than me on this area. If IT Nor were not our customer anymore it would lead to large consequences for Axess. Our cooperation with IT Nor is due to their core competence, which is Agresso expertise (our ERP-system).

We do share information with IT Nor regarding system solutions, e.g. new updates which has led to new opportunities in Agresso smartclient or Agresso web. We trust the supplier since they are known to do as they say in relation to our registration of issues that needs to be fixed immediately. On this area they can be very effective and assist you in solving the problem if possible (this mostly regards one consultant that we have as contact person). I am not sure if they keep their promises related to agreed prices.

On the daily basis the cooperation is really good – but on a superior level they might fail to deliver as promised. With this statement I am thinking of products that does not quite match the expectations we had, which again means that we need additional consulting in order to get the system to work optimally. I am unsure it is appropriate that we have to pay for all those hours if they do not manage to fix the problem, and I have no idea if this is mentioned in the agreement between the companies. Occasionally it feels like we have paid for something that does not always work as promised.