



University of
Stavanger

Faculty of Science and Technology

MASTER'S THESIS

Study program/Specialization:

Industrial Economics

Spring semester, 2012

Open

Writer:

Terje Laksesvela Helland

.....
(Writer's signature)

Faculty supervisor: Tone Bruvoll

Supervisor: Oddmund Fuglestad

Title of thesis:

Establishment of an overall strategy for procurement at an international exploration well project: Characteristics and Challenges

Credits (ECTS): 30

Key words:

- International exploration well project
- Overall strategy for procurement
- Category management and strategies
- Strategy development and alignment

Pages: 79

+ enclosure: 6

Stavanger, 11.06.2012

Acknowledgement

This thesis is the final part of my master's program which combines advanced drilling and completion courses with business and administration disciplines at the University of Stavanger. I would like to thank fellow students and professors for support and motivation during these five years.

Initially, I want to thank my faculty supervisor at the University of Stavanger Tone Bruvoll for excellent guiding and support in relation to this master thesis. Thank you for structural advice and valuable input.

I also would like to thank my supervisor in Statoil, Oddmund Fuglestad for professional input and support through the entire process. Thank you for your attention and time.

Several people in Statoil have expressed interest in this thesis, especially the category responsible group have contributed with a number of presentations. To you, I'm thankful. In addition, I will express appreciation to interviewees and members of the Amundsen #1 exploration well project. Thank you for including me in an exciting project.

Finally, I would like to thank my wife, family and friends for their support.

Stavanger, 11 June 2012

Terje L. Helland

Abstract

“Strategy is the direction and scope of an organization over the long term. Ideally, the strategy has to match its resources and its changing environment and in particular its markets, customers or clients so as to meet stakeholders’ expectations”.⁶

This quotation related to the meaning of strategy is stated by G. Johnson and K. Scholes and includes several important features of the strategy concept. Statoil is currently building a global exploration unit with the ambition to become a leading exploration company. Consequently, the company’s supply chain management strategies have to be aligned with this corporate objective. Three supply chain management strategies are stated in Statoil’s management system including category strategy, project strategy and specific procurement strategy. Strategic alignment between supply chain – and corporate strategies is a question of sharing information, the status of the procurement function, managing organization change and the knowledge and skills of the procurement personnel.⁵ An overall strategy for procurement at an international exploration well, requires a strategy per goods and services. Statoil’s framework in order to manage future demand is basic category management. Category management is a strategic approach to maximize business profitability. In general, the approach is about changing sourcing in a radical way or a way that provides radical improvements. This could include competition to drive down prices, changing internal processes or use suppliers to change value of products. The potential benefits of category management in a supply context are numerous. For instance, category management can support in delivering dramatic results in terms of price, risk, cost and value. It can make a clear contribution to the bottom line in an organization, as well as making a solid contribution to shareholder equity. Category management enables the organization to improve the respond to demands of the end customer and link these to supply – chain possibilities.¹³ Based on category management, strategic actions can be identified within each category. Therefore, the category strategies form the basis for project – and specific procurement strategies, and these have to give guidelines at international exploration well projects related to such as demand, spend, main cost drivers and market. The category strategy should also document relevant facts, different analyses, experiences, risk and uncertainty measures and goal settings. The different elements have to be updated in order to achieve the best agreements for the company. Category management achieves a practical and systematic approach to handle facts, experiences and risks that influence each category. This master thesis examines characteristics and challenges related to an overall strategy for procurement at an international exploration well project. The single – case study design utilized in this research is related to an international exploration well project in Statoil termed “the Amundsen #1 exploration well project”. In particular, several of the valid category strategies at the Amundsen #1 exploration well project, are evaluated based on relevant theory and presentations by the category responsible group in Statoil. Several remarkable findings were identified in relation to this master thesis. Although the findings are linked to the concrete research questions and the organization utilized in the case study, I believe that the findings could be of interest for other global companies involved at international projects as well.

List of contents

Acknowledgement	II
Abstract	III
List of contents	IV
List of figures	VI
List of table	VI
1. Introduction	1
1.1 Study objectives	1
1.2 Structure of the thesis	2
2. Statoil in brief	3
3. Theory review	5
3.1 A framework to the strategy concept	5
3.1.1 The meaning of strategy	5
3.1.2 Levels of strategy within a company	7
3.1.3 Strategic alignment	9
3.2 About the Supply chain management process	11
3.3 Category management and strategies	13
3.4 Project strategy (Overall Procurement Strategy)	21
3.4.1 Specific procurement strategy	22
4. Methodology	34
4.1 Methodologies classification	34
4.2 Classification of research methods according to key research objectives and questions	36
4.3 Qualitative research design	38
4.3.1 Single and multiple case design	40
4.4 Validity and reliability	40
4.5 Exploration results	42
5. Case study – The Amundsen #1 exploration well project in Alaska	43
5.1 Statoil in Alaska	45

5.2	Organization structure	46
5.3	Well construction process	46
5.4	Overall strategy for procurement	49
5.4.1	Procurement objectives	50
5.4.2	Procurement challenges	51
5.4.3	Market screening of Alaska	51
5.4.4	Helicopter and chartered fixed wing transport	53
5.4.5	Drilling Services	56
5.4.6	Drilling mobile units and LWI	59
5.4.7	Offshore support vessel	61
5.4.8	Supply base, transport and waste disposal	63
5.4.9	Surface equipment	65
5.4.10	OCTG and related equipment and services	67
6.	Discussion.....	70
6.1	Characteristics and challenges	70
6.2	Discussion of the utilized case study	73
6.2.1	Gap 1: International guidelines	73
6.2.2	Gap 2: Cooperation with other operators	74
6.2.3	Gap 3: Internal processes.....	74
7.	Conclusions and Recommendations	76
8.	References	78
9.	Appendix	80
9.1	Interview guide	80
9.2	Findings from interviews	81

List of figures

Figure 1: International exploration and production (INT) will provide a major part of Statoil's future production growth ²	3
Figure 2: The process of aligning supply and corporate strategies ⁵	10
Figure 3: The Supply chain management (SCM) process architecture in Statoil ¹²	12
Figure 4: Manage future demand ¹²	16
Figure 5: Detailed approach for category management ³¹	17
Figure 6: Category structure in Statoil (42 categories) ¹⁵	18
Figure 7: The basis for classifications of global and local/regional categories ⁸	19
Figure 8: Total spend 2011: BNOK 124.....	20
Figure 9: Supplier cost in % of total operational cost.....	20
Figure 10: Establishment of a specific procurement strategy ¹²	23
Figure 11: Illustration of the dynamic interaction between category strategy and establishment of a specific procurement strategy. The strategy process can be separated in four main levels ⁸	25
Figure 12: Three main phases in relation to specific procurement strategy establishment ⁸	26
Figure 13: Porter's five forces model and considerations ⁸	29
Figure 14: Kraljic's portfolio matrix ⁸	30
Figure 15: Strategic issues in the three strategic directions ⁸	31
Figure 16: Level interactions ⁸	32
Figure 17: The examined category strategies are highlighted with red arrows.....	44
Figure 18: The Amundsen #1 exploration well location ²²	45
Figure 19: The generic Exploration Value Chain Process. DGA, DGB, DGC, AP _x , AP _y , AP _z and DG0 represents decision gates (DG) and approval points (AP) in an investment project ²⁴	47
Figure 20: The Well construction process ²⁵	48
Figure 21: Illustration of the project schedule 2012 – 2014 ²²	48

List of table

Table 1: Basic research design ¹⁹	35
Table 2: Classification of research methods ¹⁹	37
Table 3: Qualitative data collection techniques ¹⁹	39
Table 4: Case study tactics for four design tests ²⁰	41
Table 5: Market information in relation to the Amundsen #1 exploration well project ²²	52
Table 6: Scope of the Helicopter and chartered fixed wing transport category strategy ²⁸	53
Table 7: Scope of the Drilling service category strategy ²⁸	56
Table 8: Scope of the Drilling mobile units and LWI category strategy ²⁸	59
Table 9: Scope of the Offshore support vessels category strategy ²⁸	61
Table 10: Scope of the Supply base, transport and waste disposal category strategy ²⁸	64
Table 11: Scope of the Surface equipment category strategy ²⁸	65
Table 12: Scope of the OCTG and related equipment and services category strategy ²⁸	67
Table 13: Main findings from the conducted interviews.....	85

1. Introduction

Oil and gas are one of the most important energy sources for today's society. Due to the world's demand for energy and because of increasingly matured fields on the Norwegian continental shelf (NCS), Statoil is currently in an expansive phase internationally, actively seeking international opportunities.¹ An essential part of international exploration wells is related to the establishment process of an overall strategy for procurement. In modern time the corporate world has changed more than ever before, resulting in procurement moving from being a tactical buying function concerned with transactions, acquisitions and small value improvements where possible, to a strategic provider to overall organizational success. With this change to a strategic contributor, a requirement of new approaches originated, such as category management in a supply context. Category management is about delivering improved value to the organization compared to traditional incremental improvement activities. The potential benefits of category management are numerous. For example, category management can support in delivering dramatic results in terms of price, risk, cost and value. It can make a clear contribution to the bottom line in an organization, as well as making a solid contribution to shareholder equity.¹³ When establishing an overall strategy for procurement at an international exploration well, supply chain management strategies have to be considered. Three supply chain management strategies are stated in Statoil's management system, including category strategy, project strategy and specific procurement strategies. Category strategies form the basis for project – and specific procurement strategies and are comprehensively examined in relation to this master thesis.

1.1 Study objectives

The main objective of this master thesis is to examine characteristics and challenges in relation to the establishment process of an overall strategy for procurement at an international exploration well project. Several research questions were specified in relation to this objective. The examined research questions are:

- How is supply chain management strategies aligned with corporate and business strategies in an organization?
- How is the overall strategy for procurement process at an international exploration well project structured?
- Which goods and services are included in an overall strategy for procurement at an international exploration well project and how are these optimized according to category strategies?

The main emphasis of this master thesis is category strategies as they form the basis for project – and specific procurement strategies. In order to perform this research, the valid category strategies at the case study of the Amundsen #1 exploration well project in Alaska are considered. The purpose is to evaluate how the category strategies are customized according to international exploration well projects. The master thesis will expectedly give valued input to the category responsible group and divisions involved in international projects. The theories utilized in relation to the stated objectives and research questions are gathered from scientific articles, presentations from the course MIN120 Contracts – Design and Management and textbooks. The presented theory is combined with my explorative findings, in order to examine characteristics and challenges of an overall strategy for procurement at an international exploration well project.

1.2 Structure of the thesis

The master thesis consists of seven main chapters. Chapter 1 Introduction, presents an outline to the thesis, study objectives and structure of the thesis. The research questions in relation to the thesis are established in this chapter. Chapter 2, presents Statoil in brief and some general facts about Statoil. The comprehensive decision process for investment projects is illustrated. Chapter 3 Theory review, consists of theory related to the concept of strategy, the supply chain management process and the three identified supply chain management strategies in Statoil's management system. Chapter 4 Methodology, presents the research methods utilized in relation to the master thesis. The selected methods are based on the established research questions and include literature review, case study and qualitative semi – structured interviews. Some considerations related to validity and reliability are stated, as well as exploration results. Chapter 5 presents the utilized case study of the Amundsen #1 exploration well project. In particular, valid category strategies at the international exploration well project are examined according to theory stated in chapter 3. Several preliminary findings were identified through the evaluation. The revealed discoveries from the conducted qualitative semi – structured interviews, are mainly incorporated in chapter 5. They are used to confirm or disprove the preliminary findings of the evaluated category strategies. Chapter 6 includes a discussion of characteristics and challenges related to an overall strategy for procurement at an international exploration well project. Three key gaps based on the preliminary findings of the evaluated category strategies are discussed. Chapter 7 Conclusions and recommendation, complete my thesis as the final conclusions and recommendations are outlined according to the results and discussion.

2. Statoil in brief

Statoil is an international energy company headquartered in Norway. The integrated oil and gas company is the leading operator on the Norwegian continental shelf (NCS) and holds approximately 35 years of experience. Statoil consists of about 20 000 employees and operates in 36 countries worldwide. The company is listed on the New York and Oslo stock exchanges. Statoil focuses on innovation in exploration and production to recover valued resources formerly considered as inaccessible. Fields on the Norwegian continental shelf are becoming increasingly mature. Consequently, Statoil is actively seeking international opportunities to apply expertise in deep water and offshore



Figure 1: International exploration and production (INT) will provide a major part of Statoil's future production growth².

development projects. The company has high ambitions for international growth and the upstream strategy for exploration is to develop a leading global exploration company. This includes finding new oil and gas barrels through global prioritization, early access and more effective exploration. Statoil's existing licenses are presently estimated to have resources of just about 22 billion barrels of oil equivalent and reserves of six billion barrels.³ Statoil is engaged at international fields located in among others Algeria, Brazil, Egypt, Indonesia, Nigeria, Russia and Tanzania. Exploration is considered as an essential way to achieve additions to resources and reserves. This includes oil equivalents that are potentially recoverable and oil equivalents that are achievable with existing technology and possible to develop profitably now. In order to serve this purpose, Statoil grouped all exploration resources into a single business unit as a part of the Statoil 2011 process. The intention was to give exploration more visibility and empowerment. Statoil's current asset portfolio has a potential to deliver 2.5 million barrels of oil equivalent (mmboe) per day in 2020. This is an ambitious goal and in order to achieve this Statoil needs to continue the growth rate from the last decade over the course of the next 10 years. One of the key elements in order to realize this goal is making considerable finds through exploration and increase activity in unconventional areas. An international exploration well project includes several project phases. The Capital Value Process (CVP) is Statoil's decision process for investment projects stated through the Statoil book. CVP is an extensive and structured method to project identification, planning and execution, where an investment project is developed from a business opportunity into the most profitable operation for the total value chain, in accordance with Statoil corporate requirements. Business development opportunities or acquisitions enter into the relevant decision gate as the project matures. Statoil's management system consists of the Statoil book, corporate function requirements (FR) and Business area requirements. FR05 Project development states Statoil's functional requirements for investments project post DG0 through DG4, according with the CVP. Decision gates (DG) are specified at different points between project phases in the development of a project. When a business idea is identified

and the establishment of a new business case has been approved (DG0 is passed) the project development (PD) process is applied. The PD process consists of defined project phases including DG1, DG2, DG3 and DG4.⁴ DG1 includes an approval to start concept planning/feasibility. The concept planning phase's objective is considering and justifying further development of the business case, and the establishment of an investment project. Feasibility studies are performed in order to validate that one concept is commercially, technically and organizationally feasible. It should also investigate that the value chain fit and that economic analysis and relevant stakeholder analysis justify further development. DG2 involves concept planning. DG2's objective is identifying alternative concepts, selecting a feasible concept, state and document the selected concept and progress design basis for approval at DG2. A main element in DG2 is the commercial aspect, e.g. agreements, marketing and supply, legislation, taxes and product sharing.⁴ DG3 includes definition. The objective of this phase is to further mature, state and document the business case constructed on the selected concept for project sanction. This phase includes among others forming the basis for agreement (e.g. contract) awards. DG4 is about starting operation (execution). The objective of the execution phase is realizing the business case. To drive and withstand the growth ambitions beyond the next 10 – 15 years Statoil needs to access opportunities and reserves beyond what they have today. The ratio of oil reserves compared to the oil barrels produced every year needs to be improved. This measure is a predicted key valuation driver in the stock market because it indicates a company's potential future production growth.³ Compared to other similar energy companies Statoil is currently in the lower end of the peer group. The ambition is to lead the peer group in 2015 when it comes to number of barrels of oil and gas reserves added each year through exploration, and the related finding costs. To meet this target there is a need of additional 600 million of barrels of oil and gas reserves every year at a cost of less than 4 USD / barrel on average. Given decreasing discovery sizes worldwide and increasing competition for exploration acreage this is a really ambitious target. The best way to achieve this includes among other elements focusing on a selected set of basins included frontiers regions (areas with few exploration wells at present), securing access to exploration acreage at premature stage and scale at a low cost through innovation and new ways of cooperation. Prioritizing, accessing and developing plays in the Barents Sea and other Arctic areas as the Chukchi Sea in Alaska, is an element included in an exploration roadmap ahead.³

3. Theory review

Chapter 3 presents relevant theories that will be applied in this master thesis. An introduction to the strategy concept is given in section 3.1. The objective of this section is to term and analyze the concept of strategy and strategy alignment. Then, Section 3.2 describes the general supply chain management (SCM) process. The next sections 3.3 and 3.4 present the three identified supply chain management strategies in Statoil's management system: Category strategy, Project strategy (Overall Procurement Strategy) and Specific procurement strategy.

3.1 A framework to the strategy concept

The objective of this section is to term and analyze the concept of strategy. The section includes theory related to the meaning of strategy, levels of strategy within a company and strategic alignment.

3.1.1 The meaning of strategy

Several different interpretations of what strategy really means exist among academics and practitioners and include at least ten schools of strategy formation.⁵ The different views range from the prescriptive and economic (e.g. the Positioning School) to the descriptive and behavioral (e.g. the Cognitive School). Quinn's (1980) description of strategy states that strategy is "the pattern or plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole. A well – formulated strategy helps to marshal and allocate an organization's resources into a unique and viable posture, based on its relative internal competencies and shortcomings, anticipated changes in the environment, and contingent moves by intelligent opponents".⁵ Often these strategies are written down in documents (explicit), but they can also be implied and understood by the organization (implicit). Three essential points can be concluded from the definition by Quinn:⁵

1. Scale and scope of an organization's activities over the long run term is influenced by strategy.
2. Being responsive to changes in the external environment is committed by strategy.
3. Strategy concerns about aligning activities with strategic resources and capabilities.

Another meaning of strategy is stated by G. Johnson and K. Scholes (1993): "Strategy is the direction and scope of an organization over the long term: ideally, which matches its resources to its changing environment and in particular its markets, customers or clients so as to meet stakeholders' expectations".⁶ Several fundamental features of the strategy concept are captured by the two quotations. Firstly, they correlate to the "scope" of the organization when it comes to categories of goods or services and of the geographic frontiers that will provide a focus for its activities. A strategy has to emphasize activities a company should or should not

be involved with. Secondly, strategic decisions will also try to match these activities according to the organizations environment and make every effort to match these activities to its resource capabilities. Two major perspectives are identified in order to develop strategies within an organization. The first one is called the “outside – in approach to strategy” and proposes that strategies should be aligned and reactive to current and future states of the external market. The second perspective is called the “inside – out approach to strategy” and implies a resource – based view proposing that competitive advantage is sustained by a company’s distinctive resources and capabilities. The question is then to match activities with the distinctive capabilities.⁵ Furthermore, strategic decisions involve huge resource implications and affect operational decisions by setting of waves of smaller decisions. Such decisions will as well be influenced by those in power inside and around the organization. The long term direction of the organization is likely to be affected by strategic decisions.⁶ Some of these features are concerned with the purpose or content of strategic decisions while others are dealing with an comparison between “strategic” and other forms of decisions. Grant (1991) states that strategy is an “overall plan for deploying resources to establish a favorable position” and he claims that strategic decisions “are important, involve a significant commitment of resources and are not easily reversible”.⁶ Tricker (1989) also states the long term character and wide-ranging horizons of strategic thinking. Descriptions based upon these characteristics of strategic decisions illustrate that the concept of strategy can be applied not only to the business as a whole, but also to functional areas which among others include supply chain management strategies. However, some classifications of the concept of strategy focus only on content and purpose and would only be relevant to businesses as a whole. Hence, Hax (1991) considers strategy expressed as six points:⁶

1. Strategy as a coherent, unifying and integrative pattern of decisions.
2. Strategy as a means of establishing an organization’s purpose in terms of its long term objectives, action programs, and resource allocation priorities.
3. Strategy as definition of a company’s competitive domain.
4. Strategy as response to external opportunities and threats and to internal strengths and weaknesses as a means of achieving competitive advantage.
5. Strategy as a logical system for differentiating managerial tasks at corporate, business and functional levels.
6. Strategy as definition of the economic and non – economic contribution the company intends to make to its stakeholders.

The widely acknowledged idea of strategies at three different levels specifically termed as corporate, business and functional are included in the list. Consequently, the locus of strategic decision making can vary noticeably. Some may state that corporate strategy involves the organization as a whole, opposed to specific business or functional units, and should be the commitment of the management team. Hax’s six points also denote that strategy involves

requirement for the structure of the organization, the separation of tasks and the sharing of responsibilities. To conclude in this part concerning the meaning of strategy it can be seen that strategy involves “concept”, “content” and “process”. “Content” implies which types of strategy to be implemented in order to accomplish the identified objectives. The content of strategy studies the specifics of what’s decided. “Process” includes both steps in the formation or formulation of strategies and phases or steps involved in implemented preferred strategies. In practice all the three separate components are closely interconnected. Now that the meaning of strategy is defined, the next section will have a look at different levels at which strategy is formulated within a company.

3.1.2 Levels of strategy within a company

It is a widely accepted idea within strategic supply management that three different levels of strategy development exist within a company. The three identified levels of strategy development within a company are⁵:

- 1) Corporate level strategy.
- 2) Business level strategy.
- 3) Functional level strategy.

At corporate level the essential question concerns organizational boundaries and in what business the company is. The strategy developed at this level influence the range of integration along the supply chain, specifically characterized as the organization’s scale. Also the organization’s scope will be determined at this level. The organization’s scope is specified as the range of activities in which the company competes. At the preceding decade a lot of companies have reduced in scale and scope as their focus is now concerned on core competences. The reduction in scale and scope of companies has resulted in outsourced peripheral activities. Thus, the importance of managing the supply chain has increased.⁵ The next level of strategy development in a company is termed business – level strategy. The question asked at this level takes account of how the company competes in selected markets. According to Porter (1980) each of the identified markets is likely to be different in terms of rate of change, level of competition, bargaining power and entry barriers. Consequently, each market requires a different strategy. A business – level strategy has to support corporate – level strategy in order to secure that market development and product is consistent with the overall strategic direction of the company.⁵ Porter states that a company has a chain of activities which create value and which are “performed to design, produce, market, deliver and support its product”. Each of the activities employs human resources, purchased input and a type of technology. The business – level strategy then has to give guidelines to these activities and secure satisfactorily interrelationships among them. The strategies for the activities have to support the overall strategy of the business according to objectives, mission, competitive advantage and competitive scope. They also have to be coordinated and optimized to support each other and problems of linkage. The functional strategies ask how the company’s function can support business and corporate – level strategies. Functional

strategies are established by all key functions, including human resources, operations, finance, marketing and supply chain management. Establishment of strategies at this level involves coordination of resources and capabilities to support implementation of business strategies. Personnel with direct responsibilities in relation to functions should be involved in the process of strategy formulation at the business and corporate levels. This will integrate their proprietary knowledge of the function's skills and capabilities, customers and competition into these higher – order strategies.⁵ Business – and corporate level strategies can then be translated by functions into short – and medium – term plans for their separate part of responsibility. A quotation by John Bessant (1991) states that “the world economy is arguably in a state of transition, in which the previously accepted «best practice» conditions for industrial performance are changing and – with them – the whole structure of economic society”.⁶ This statement from John Bessant's book “Managing Advanced Technology” suggests the requirement for developing not only short-term measures to pursue objectives in changing conditions but also strategies with the aim of achieving fundamental and long-term effects in the future.⁶ Supply chain management strategies (functional – level strategy) need to be made and connected into the overall strategic approach being implemented. A process to formulate and apply strategy is described in a popular text by G. Johnson and K. Scholes and includes the following main tasks:⁶

1. Strategic analysis of:

- The environment.
- Expectations, objectives and power.
- Resources.

2. Strategic choice:

- Generation of options.
- Evaluation of options.
- Selection of strategy.

3. Strategy implementation:

- Resource planning.
- Organization structure.
- People and systems.

The “process” and “content” in relation to strategy is certainly important aspects. However, the “context”, with attention to both time and current situation and circumstances needs to be considered. “External” and “internal” environments are both incorporated in the “situation” term. Now that the idea of strategy is well-defined, three levels of strategy within an organization are examined and a general process to formulate and apply a strategy is described, the next section presents the process of strategic alignment.

3.1.3 Strategic alignment

Strategic alignment implies that functional strategies have to be connected with and support business – and corporate – level strategies. Alignment is a crucial aspect in order to achieve that resource allocation and activities at a functional level are consistent with high – level objectives stated in business – and corporate strategies. A company with a high quality corporate strategy has to be supported at a functional level by activities to get the product to market with the highest quality as possible. Strategies have to be aligned. However, it should be noted that functional – level activities should not be constrained to passively accept strategies passed down from a corporate level. Strategy development can be “top – down”, in other words from corporate to functional, and “bottom – up”, indicating from a functional level to a corporate level. Former researches have confirmed the importance of involving supply functions in corporate – level strategy development. Supply chain and corporate strategies are strategic aligned when supply chain management strategies facilitate and support corporate strategy.⁵ For example, Statoil’s corporate technology strategy is created on the corporate strategy, which has set a growth target of achieving 2.5 mmboe per day by 2020. Technology is considered a key to future growth in an increasingly broad and complex business environment with tougher competition.⁷ If the organization’s competitive priority is technology then the supply function should achieve technology inputs from suppliers. In general, an organization’s competitive priorities are a combination of technology, cost, quality, delivery, innovation and flexibility. In other words, supply function goals have to be aligned with the competitive priorities of the organization. An organization will normally develop a reputation created on a couple of the competitive priorities. Such kind of reputation is derived from specific corporate strategies which are supported at business – and functional level. Strategic alignment between supply chain and corporate strategies does not generally require large capital investments, it’s more a question of information sharing, the status of the purchasing function, managing organization change and the knowledge and skills of the purchasing personnel. Any change to corporate strategy should be discussed with the supply chain function. A dynamic strategy former aligned would become misaligned if changes are not transferred across the organization. The process of aligning supply and corporate strategies is illustrated in figure 2.

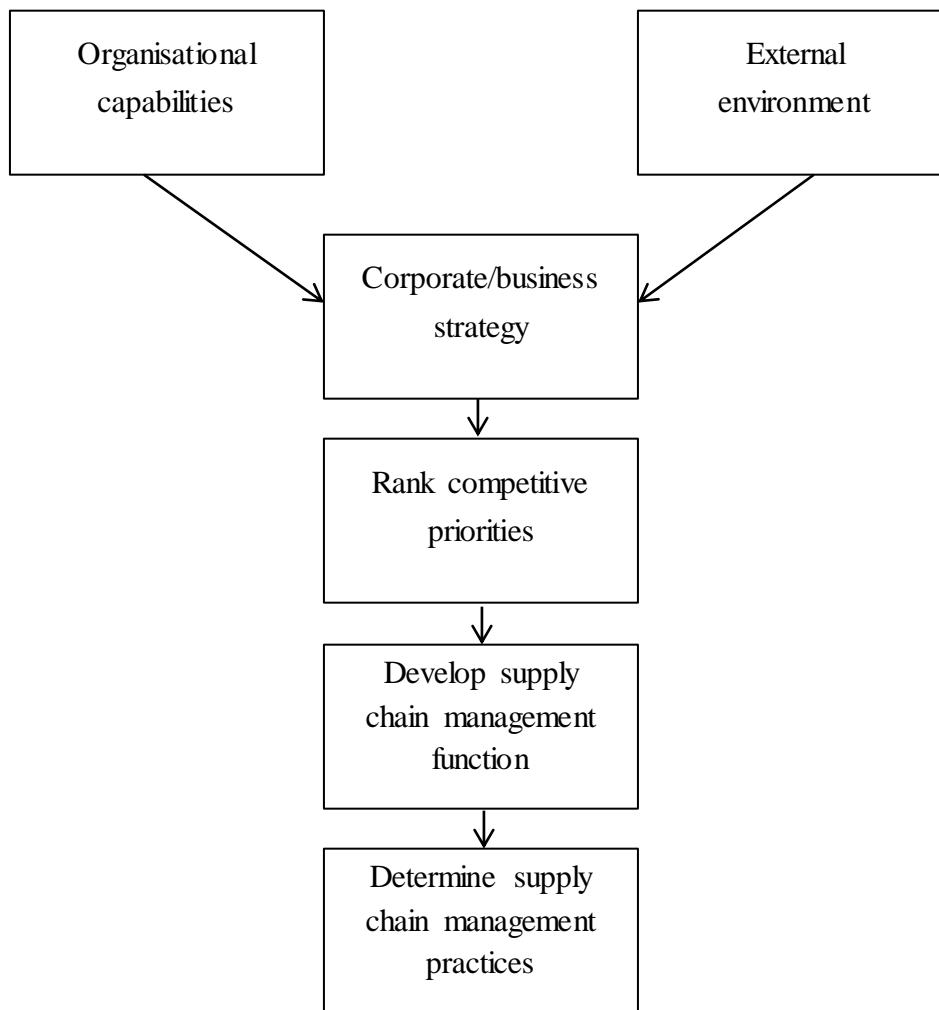


Figure 2: The process of aligning supply and corporate strategies⁵.

As a summary, there is a need to consider both the existing and future situation of external markets and matching activities with distinctive resources and capabilities. Supply chain management strategies should actively contribute in corporate – and business – level strategic decision making. Now that the link between external environments, internal capabilities and the development of strategy is considered, the next section 3.2 will examine the supply chain management process. In particular, the supply chain management process is written from an oil company’s point of view.

3.2 About the Supply chain management process

Most companies, include Statoil, are governed by external requirements such as the Norwegian Public Limited Company Act, OSE and NYSE requirements, Country specific laws and regulations and Norwegian Code of Practice for corporate governance. However, laws and governing documents do not include all commercial aspects.⁸ To pursue that all commercial aspects are incorporated, it is necessary to implement and manage supply chain management (SCM) in an appropriate manner. With the emergence of a global market economy there has been a growing tendency for companies to cooperate closely with suppliers and providers to form what's termed "supply chains." Well managed supply chains can improve the incomes of its participants considerably. It is important to have a clear understanding of what supply chain management is. Supply chain management can be described as the integration of key business processes from end user through original suppliers which provides products, services, and information in order to add value for customers and other stakeholders.⁹ A decent supply chain is fundamental for a company to survive, and a poor supply chain will cause product and services not being able to deliver when demanded by the market.¹⁰ Costs, customer services, quality and delivery requirements are important aspects. The main objective of the supply chain management function in Statoil is described to connect the business need with supplier and adding value in a compliant manner. Supply chain management integrates procurement, inventory and logistics with the business processes. The function's responsibility includes:¹¹

- Establish, communicate and implement the group's supply chain management policy and strategy.
- Establish and implement category strategies.
- Establish and implement the group's governing system for supply chain management.
- Identify best practices and communicate those across group.
- Advice in matters related to supply chain management.
- Monitor current process practices and implement corrective actions.
- Execute the entire supply chain management process as described in figure 3 below.

The process owner Supply Chain Management (SCM) is responsible for the SCM process in Statoil. The SCM process is one of the common work processes that are valid across the organization, and figure 3 below illustrates the entire process.¹²

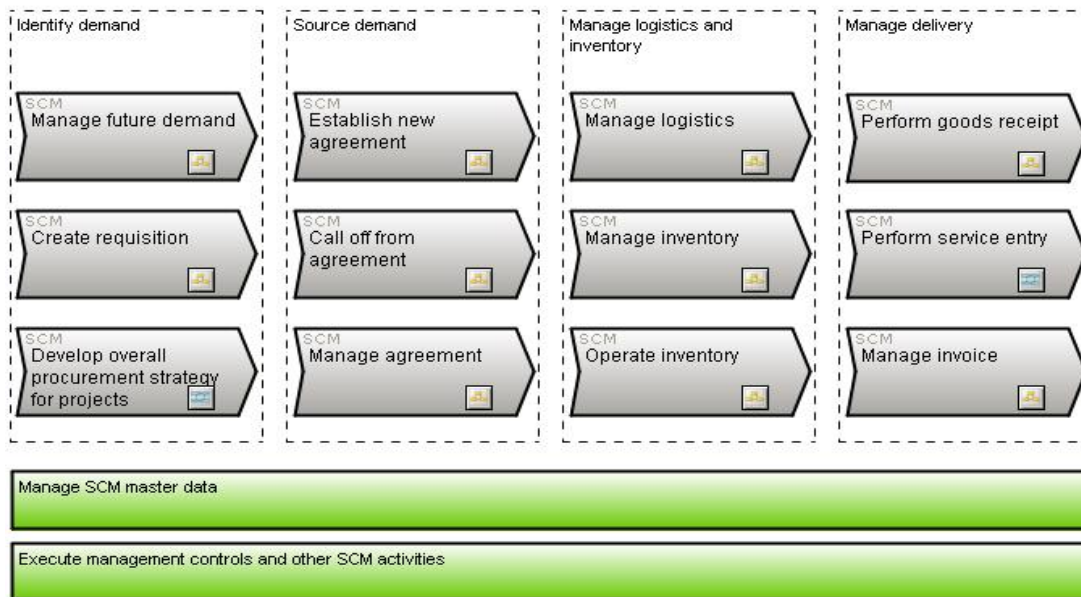


Figure 3: The Supply chain management (SCM) process architecture in Statoil¹².

Several functions and roles across Statoil are involved, and these include work processes for personnel working within Procurement, Material management, Logistics and Central Accounts Payable. Procurement is responsible for all procurement activities. This is done through a category approach to goods and services, based on aggregated demand management, the global market situation and robust analysis to minimize execution risk.¹² The verified demand is crucial, the fundamental in what's procured, and important constraints are established at this stage. The opportunity to influence and improve the verified demand is primarily at this stage. It's important to obtain an innovative and overall approach. The investigation should consider modifications during the entire process.⁸ Material management include planning and controlling the material flow, which in a company runs from supplier, through requisitioning and purchasing, transportation and goods receipt, then from goods issue to person responsible for requesting the material and all the way until the material is installed or consumed. This is a complex task with many disciplines involved, and a lot of variables have to be taken care of. One of these variables is inventory management, and this is in itself a complex task. In a complex organization like Statoil, it's essential to have a broad and transparent material management system, lean processes, trained personnel and easy access to information to be able to manage and control the flow of materials.¹² An optimized comprehensive logistic function is required in order to follow up daily supply activities, support and planning. Some important characteristics of logistics are managing air transport, transportation, base, vessels and installation logistics. The logistic function also includes acquiring and operating vessels. An important part of the SCM process is invoice processing. The main focus is to pay suppliers for their deliveries on time and according to the agreements. To a large extent invoice verification is a centralized function in Statoil, and the majority of invoices are handled by the Central Account Payable organization (420.00

invoices estimated in 2009). When an invoice is received from a supplier the invoice processing procedure starts. The process ends when the invoice is posted and ready for payment. Several tasks are incorporated by the invoice verifier:¹²

- Invoice registration.
- Correct value added tax for the invoice.
- Check that no mismatch between what has been received and invoice occurs.
- Numerous reconciliation, reporting and follow-up tasks.

Different parameters influence the SCM process. These are among others demand, company guidelines, company governing documents, laws and regulations, contract/CMS, ethics and values, policy, time, resources and market.⁸ Three strategies are stated in the management system in Statoil within supply chain management. These are category strategy, project strategy (overall procurement strategy (OPS)) and specific procurement strategy. As discussed in the previously sections, company SCM strategies have to be aligned with business strategies and corporate strategies. The next sections investigate the development process of category strategies, project strategy and specific procurement strategies.

3.3 Category management and strategies

This section presents category management and strategies in a supply context. Category management is a strategic approach to maximize business profitability. The approach focus on the vast majority of an organization's spend on goods and services with third – party suppliers. Category management can deliver dramatic results to organizations in different economic and market conditions and the approach can support in order to respond positively to a variety of different business needs and drivers. It is a process – based approach which integrates several familiar characteristics of business improvement processes and change management.¹³ It is an approach to procurement that has a gaining ground in both public and private sectors. This also includes large oil companies such as Statoil. The main principle of category management is assembling together goods and services bought from similar supply markets and have similar characteristics as a separate group or category. Then, the categories become more manageable from a procurement point of view, as the items in a category require the same supplier market intelligence and sourcing strategies.¹⁴ By the use of this category segmentation, organizations obtain cross – functionally work on discrete categories, investigation of the entire category spend, an overview of how the organization uses the goods and services within the category and considerations of the market and specific suppliers. This comprehensive review process is organized to actively challenge what's established, search for and implement breakthrough opportunities in order to create significant value for the organization. Some forms of value creating related to category management are leverage dramatic reductions in procurement prices, reduce the overall cost or total cost of ownership (TCO), reduce supply – chain risk, mitigate price increases in a rising market and secure increased innovation from the supply chain. Category management has a significant potential related to influence the bottom line or EBITA (earnings before interest, taxation, depreciation and amortization) in an organization. It is also a key enabler within procurement in order to uplift, protect or recover the share price.¹³ In addition, other related potential benefits of category management are:¹⁴

1. Customer needs, desires and aspirations will be connected to supplier market capabilities.
2. Knowledge and experiences are applied to the category management process.
3. Enable business requirements to be developed to deliver the best value.
4. Relevant spend is included in the category in order to maximize the leverage.
5. Support communication across the entire supply chain.
6. Ensure that several procurement options are considered.
7. When categories are managed by experts, any trends or developments related to commercial risk could be more easily identified. This might reduce risk.
8. Permit for predicted or planned technology modifications.

Another type of benefit category management related to category management is corporate social responsibility (CSR). Category management can support the realization of stated organizational CSR objectives in supply chain. There is no single pioneer of category management in procuring as the approach was established across a number of different progressive companies working at the front position of strategic procurement. Category management is built on three concrete fundamentals, specifically termed as strategic approach to sourcing, strong market management and robust change management. Foundation 1 concerns sourcing strategically. As stated in section 3.1.1 there are different interpretations of what a strategy is. The statement by G. Johnson and K. Scholes express that a strategy is much more than a plan or a definition of future directions, although these form key essentials. When it comes to procurement there are two areas where strategies are required. These are identified to be an overall strategy for the procurement function, aligned with and reacting to higher – lever corporate strategy and individual sourcing strategies for discrete areas of spend. According to theory stated in section 3.1, a strategy sets the direction and scope for the procurement function over the long run. The strategy should in an ideal world match the function's resources and capability to changing environments, and in particular to the needs of the organization and internal clients, external markets and best – practice sourcing approaches. In addition, the strategy has to support and be aligned with overall corporate objectives and stakeholders expectations. A strategy for a discrete and defined area of spend sets the directions and scope over the medium term. The spend should ideally match the immediate and future needs and wants of the organizations and its end customers with respect to the current and potential future market.¹³ The second foundation involves management of the market. The emphasis is entirely outside of the business. In other words, the concern is related to market understanding, how business is correlated to that market, market power structure and sometimes even changing the market itself. A research of a market is a complex task involving several elements, such as piecing together fragments of information. In reality, many organizations miss excessive opportunities or their competitive edge by failing to manage the market as a result of one or more barriers. Examples of barriers are getting departments to talk to each other and top management reassurance, predicting the future

demand, lack of creativity and perceptions. Some important aspects in order to understand how strategic sourcing approaches may improve managing the market are knowledge, setting boundaries and the power base. Knowledge relates to market changes, new entrants, substitute products, developments in technology, global events and change in demand. Setting boundaries include seeing beyond the market the organization currently is sourcing from. New opportunities may be discovered in other markets, which could fulfill the demand adequately but on a different way. The power base relates to number of suppliers and degree of competition. The last foundation includes driving change. It is stated that good strategic procurement is more about change management than anything else. A strategy is worthless if it can't be implemented effectively. All parts of an organization have to support, cooperate and active participate in order to implement the strategy effectively.¹³ In order to form a decent strategy, an overall business understanding is essential. The established strategy has to consider dynamic parameters such as budget, overall demand, drilling plans, partners, regulations and financial situation. Both internal and external factors affect the strategy. Statoil's framework is basic category management. Category management achieves a practical and systematic approach to handle facts, experiences and risks that influence each category. Each of the categories should obtain an overview of:⁸

- Demand.
- Spend.
- Main cost driver.
- Market.

This creates a basis to identify strategic actions within each category, specifically termed as category strategies. It is one of Statoil's key objectives to develop, integrate and implement sourcing strategies to achieve the best agreements for the company.¹⁵ Statoil's guidelines for supply chain management are outlined in the Statoil book and governing document FR09 Supply Chain Management. The Statoil Book states the most important policies and requirements for Statoil as an entire group, and hence the corporate policy for the procurement area. The business area requirements are illustrated by figure 3.¹⁶ Figure 4 illustrates how Statoil will manage future demand based on the category management approach.

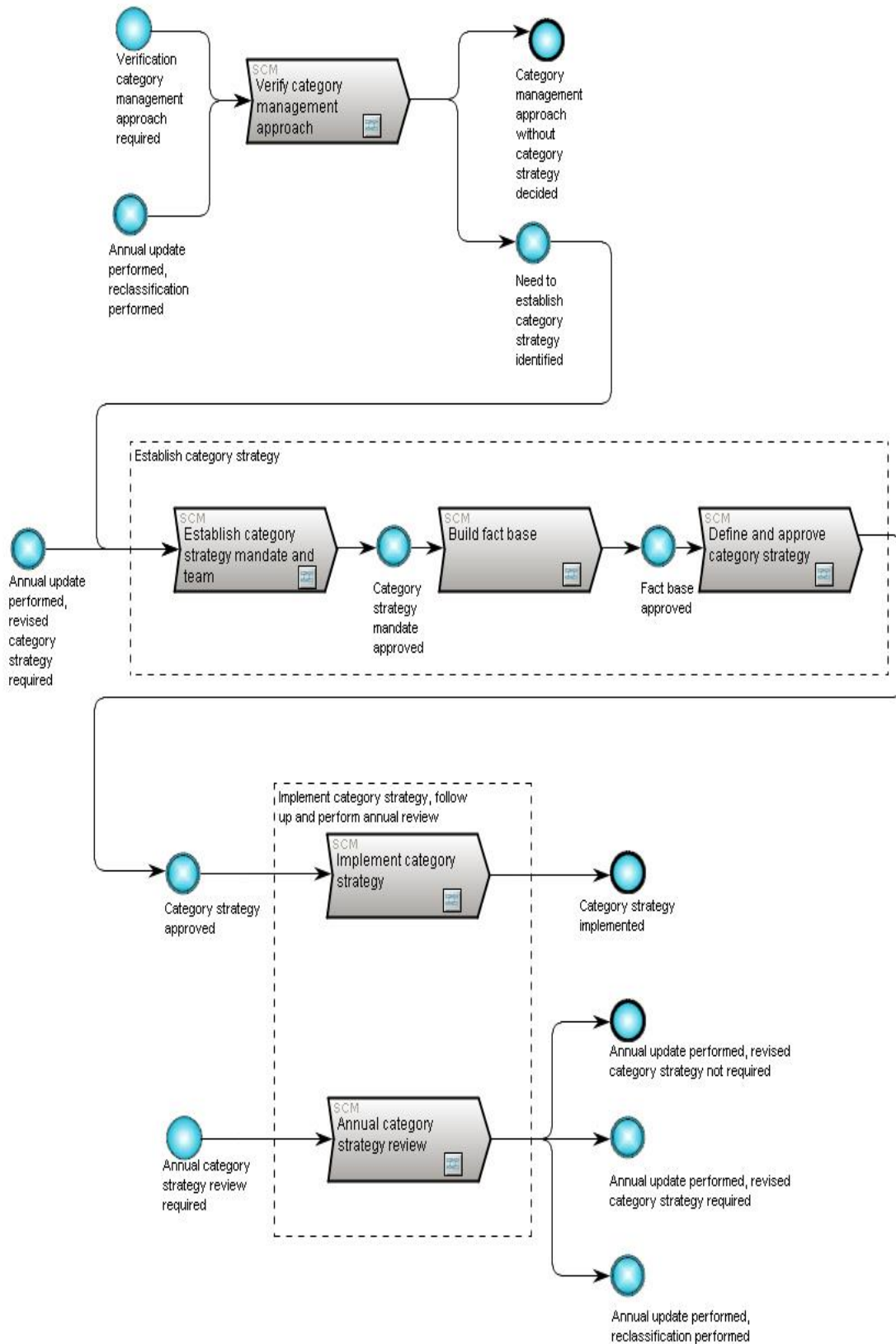


Figure 4: Manage future demand¹².

The detailed approach for category management and implementation of category strategies is described in the supply management work process under “manage future demand” and consists of five main phases as illustrated by figure 5.

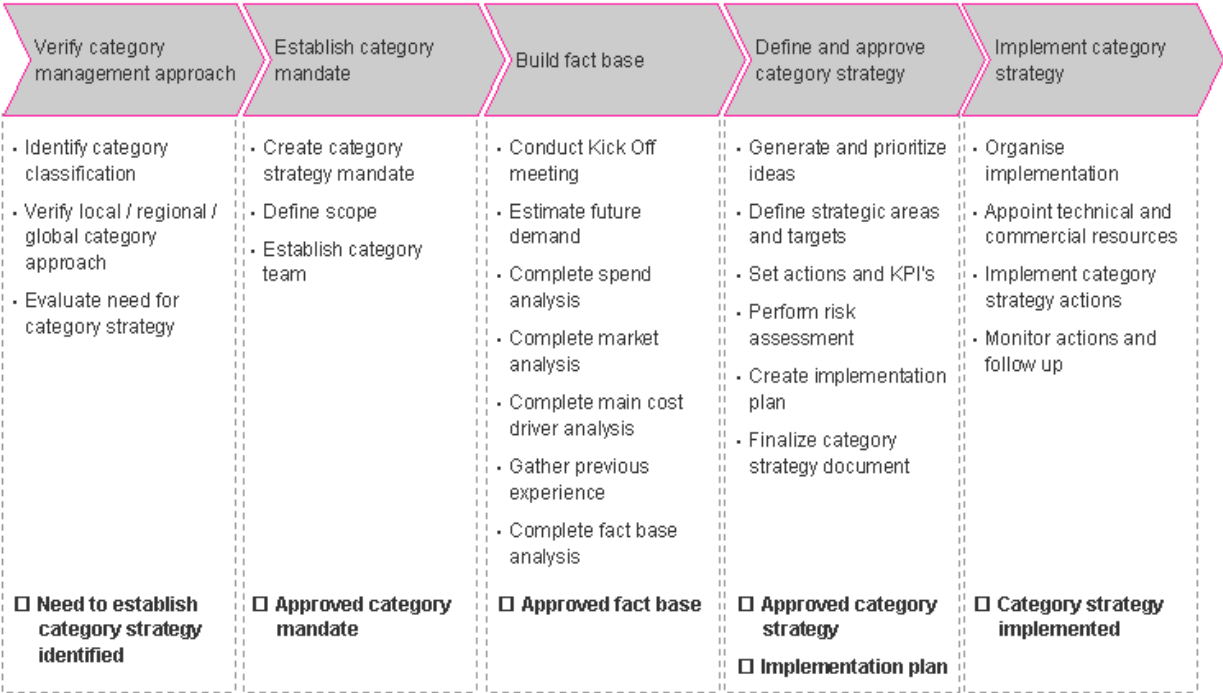


Figure 5: Detailed approach for category management³¹.

Category management is a concept in which the total range of goods and services needed are broken into specific groups of similar or related goods and services⁸, these groups are known as categories, and all categories have a set of goods and/or services defined by a single code and a description.¹⁵ The codes and descriptions can be found in SAP and are equal to “Material groups”. Oil companies have a differentiated strategic approach to category management and a category is managed according to one of the following alternatives:¹⁵

- Categories with local/regional strategies and local/regional implementation.
- Categories with global category strategies and local/regional implementation.
- Categories with global category strategies and global implementation.

“Local” is defined as country specific and “regional” implies cross country (e.g. Norway and Denmark). The term “global” denotes world-wide. The different categories can be illustrated as a wheel with a core and two circles. The core demonstrates CPO (Chief Procurement Officer) who is responsible for management follows up of the categories. The inner circle shows the area the different categories are placed. The outer circle illustrates all categories covered by FR09 – SCM.¹⁵

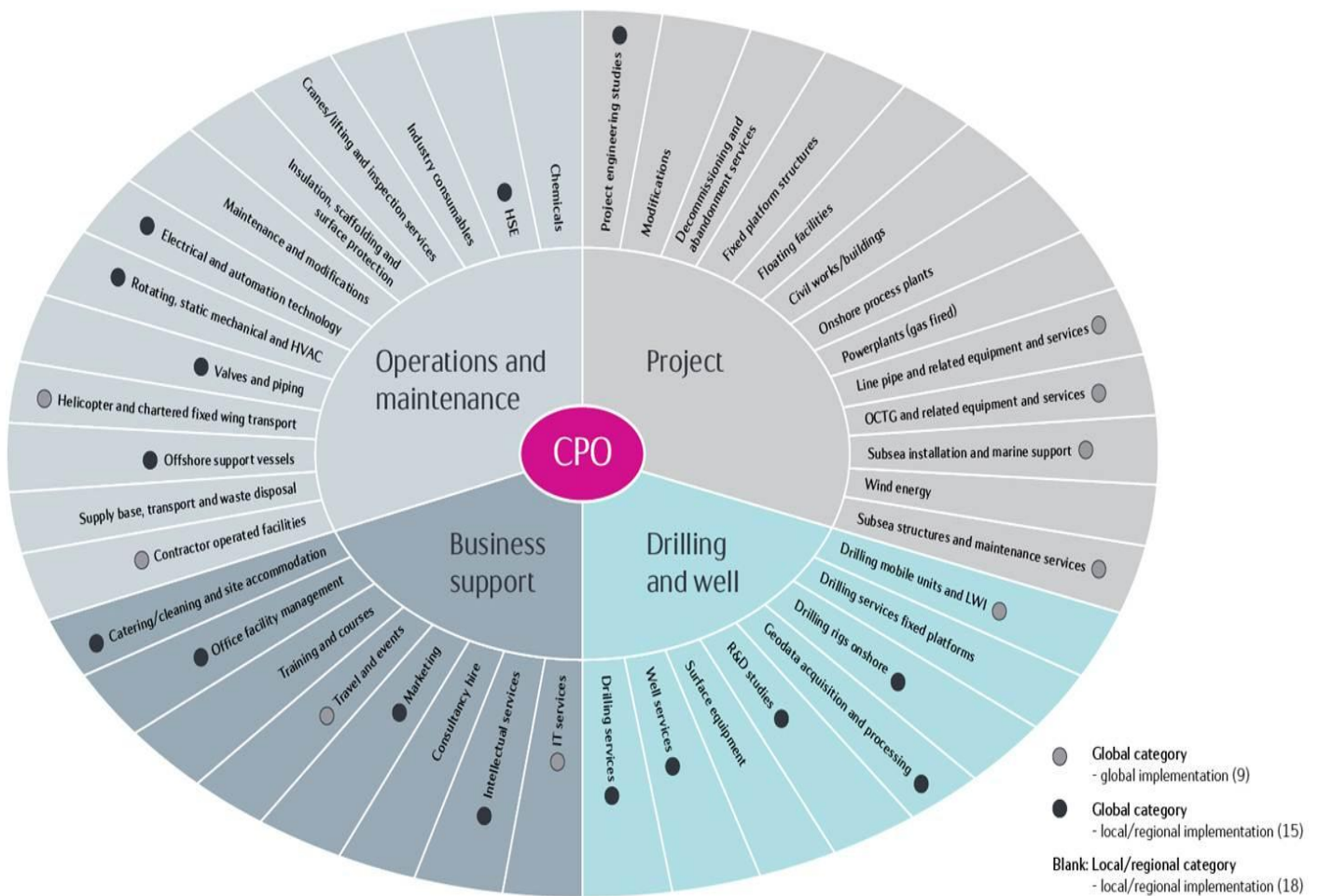


Figure 6: Category structure in Statoil (42 categories)¹⁵.

Globally defined categories have a category responsible, while in categories defined as local/regional the necessity is evaluated by the procurement leader. The purpose with category management is to make certain an accurate scope of category strategies and how to carry out the implementation of these. Category management should also ensure lean processes, experience transfer across regions/locations and a single Statoil approach based on economies of scale and synergies. The classification of local/regional versus global categories is a dynamic process dependent on Statoil's marked development and strategic importance. The reasoning for establishment of the differentiated strategic approach to categories (global or local/regional categories) can be illustrated by figure 7.⁸ The figure illustrates the basis for classification of global and local/regional categories. The two axes are strategic importance (business risk and financial risk) and availability. Essential assessment issues are:⁸

- Strategic importance
 - Strategic impact for Oil Company.
 - Geographical allocation of spend.
 - Financial risk.

- Price elasticity.
- Level of service – consequences of delayed supplies.
- Importance to internal customer.
- Refer to strategy of technology.

➤ Availability

- Market competition.
- Company and suppliers negotiation strength (price takers versus price makers).
- Market restrictions and risks.

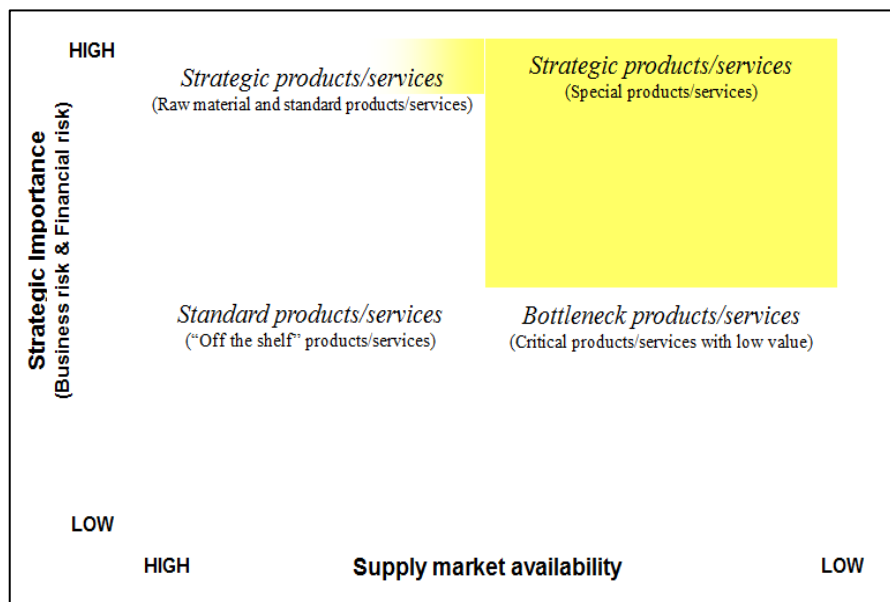


Figure 7: The basis for classifications of global and local/regional categories⁸.

Different approaches and strategies are established and used dependent on position in diagram 7. Figure 8 illustrates spend by procurement category area in 2011. The total spend in 2011 was mainly divided into two separate parts. These parts were TPD (46%) and DPN (28%).

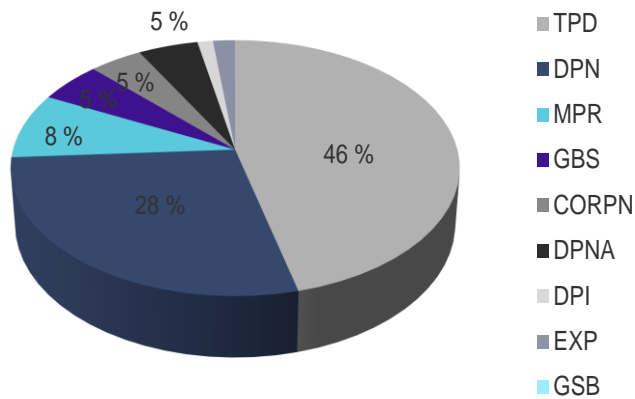


Figure 8: Total spend 2011: BNOK 124.

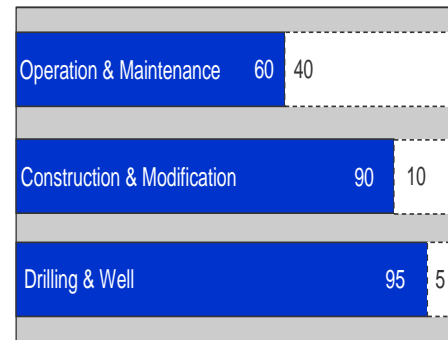


Figure 9: Supplier cost in % of total operational cost.

According to figure 9 suppliers contributed to a large extent of total spend in 2011. Hence, the suppliers account for a large proportion of Statoil's total value creation. The suppliers are in other words crucial for Statoil's success. The company's purpose is appropriate suppliers with compliancy to all existing Statoil requirements. However, an underlying conflict of target occurs due to different objectives. The suppliers will try to realize and succeed on their own objectives, specifically increasing their margins in agreement with company. There are different strategies and methods used by suppliers to increase their margins. The main groups are:⁸

1. Market discrimination.
2. Strategically pricing.
3. Variation order strategy.
4. Renegotiations.
5. Claims for compensation.

Companies have to be aware of the effects of suppliers' strategies. The suppliers will attempt to influence in all procurement phases. Market discrimination and strategically pricing are often associated with the pre-procurement phase. Variation order strategy and renegotiations are used when executing the agreement. Claims for compensation occur after the agreement is completed. A significant challenge by strategy development is to consider the effect of supplier strategies and form countermove actions to eliminate or reduce the effects of these.⁸ In order to reduce costs, it's essential to follow up the suppliers closely. Some examples of adverse behavior by suppliers with cost consequences are:⁸

- PO – deviations – reservations, deviations and assumptions, vagueness (vague scope, lump sum etc.).

- Incorrectly invoicing – volumes, pricing etc.
- Use of wrong personnel categories (cost impact).
- Use of mob-/demob rates – cost coverage.
- Commodities procured by supplier – deviations regarding volumes, basis and compensation.
- Practicing rates (day rates versus week rates), hire of equipment, escalation of rates and prices.

Countermeasures companies use in order to reduce and eliminate suppliers strategies are demand verification, specification management, negotiation strategy, contract management and contractual follow – up.

3.4 Project strategy (Overall Procurement Strategy)

A project strategy or an overall procurement strategy (OPS) is a part of PEOPS (Project Execution and Overall Procurement Strategy) and stated in governing document FR05 Project Development. It is one of the identified supply chain management strategies and will be examined in this section. The objective of the overall procurement strategy is to describe the strategy for overall procurement in reference to the “Supply chain management process architecture” (figure 3), and investigate options to the preferred procurement strategy (optional strategies) and how these optional strategies are evaluated compared to the preferred with respect to market opportunities, commercial mind-set and competition. A general requirement is that the overall procurement strategy has to be aligned with relevant category strategies and based on the outline procurement strategy developed prior to DG1. A general overall procurement strategy characteristically consists of:¹⁶

- The key objectives of the procurement strategy.
- Current market situation assessment.
- Optional procurement strategies and consequence on follow on strategies assessment.
- Background for the chosen subdivision into contract packages.
- A description of the linking, interface and interdependency between contract packages.
- The philosophy of pre-qualification and applicable law requirements.
- A purchasing strategy with general standardization requirements and the use of company’s framework agreements.
- An evaluation of synergies with other company projects and activities.
- An evaluation of procurement related risks including mitigation actions.

- A description of individual contract packages including a short-term description of the scope of work, main milestones, contract model, interfaces, compensation format, cost estimate, options and a plan for the preparation of specific procurement strategies.

The overall strategy for an international exploration well project has to include a strategy per required goods and service. Some of the required goods or services may already have existing master service agreements / frame agreements with suppliers and the international exploration well project can execute the contracts as call – offs. If no existing agreements are applicable for the international exploration well project, new agreements need to be established. When establishment of new agreements have to be performed, this is done in two different ways dependent on agreement value. If the new agreement exceeds 10 MNOK a specific procurement strategy has to be established and approved. A new agreement below 10 MNOK does not require a specific procurement strategy. The main elements included in the process when establishing a new agreement below 10 MNOK are planning enquiry, search and select tenderers, create and send enquiry, evaluate tenders, recommend supplier and create agreement. The strategy per goods or service needs to be established based on relevant category strategy. In general, the required goods and services for an international exploration well project could be identified in categories on figure 6. Then, the relevant category strategies should be used in order to form a detailed overall strategy for procurement. The procurement process has to ensure that the project goals are achieved in a cost-effectively way. The next section 3.4.1 introduces a methodical approach for the establishment of a specific procurement strategy. The different main steps in the approach are presented, as well as some of the analysis used in order to form a strategy. Several of the established specific procurement strategies in Statoil have previously established category strategies, and much of the work done at a category level can be used when preparing a specific procurement strategy. This applies directly at the analysis level. Analyses carried out at category level can be used directly in the specific procurement strategy with updated quantities.

3.4.1 Specific procurement strategy

Large oil companies like Statoil have many established strategies. All developed strategies are consistent and may influence each other. Some examples of strategies are technology strategy, management strategy, IT strategy, specific procurement strategy, category strategy, drilling strategy, business strategy and project strategy (Overall Procurement Strategy). This section introduces the specific procurement strategy, which is required to establish when a new agreement exceeds 10 MNOK. The main elements included in the establishment process of a new agreement exceeding 10 MNOK are prepare specific strategy, prequalify potential tenders, finalize specific strategy, produce and send enquiry, communicate with tenders and receive tenders, evaluate tenders and perform agreement award. Figure 10 illustrates the entire process.

Establish new agreement > NOK10M

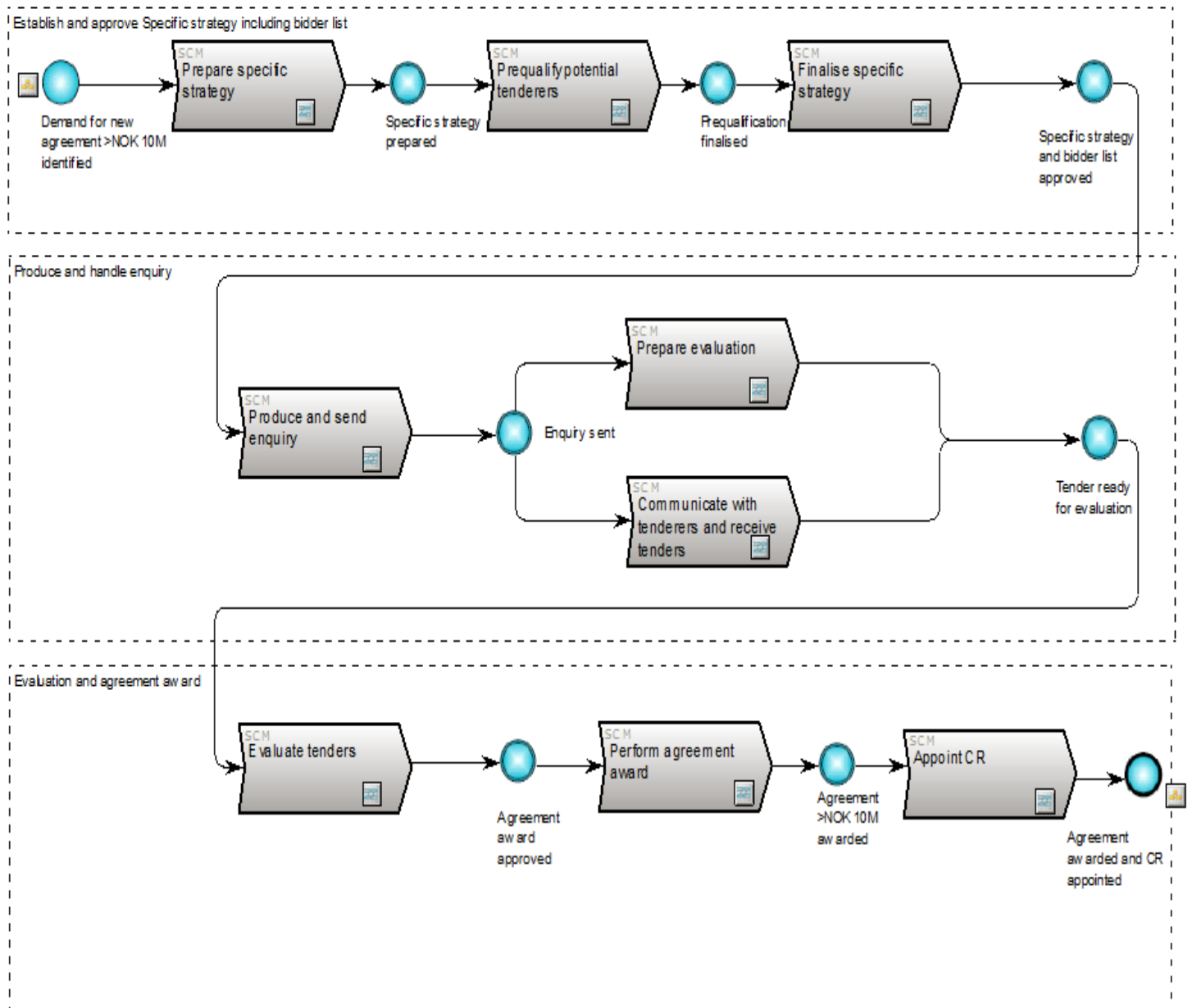


Figure 10: Establishment of a specific procurement strategy¹².

The methodical approach for the establishment of a specific procurement strategy can be divided into six main steps⁸:

1. **Demand:** Find applicable facts and verify actual demand.
2. **Analyses:** Analyze specified facts with input to strategy establishment.
3. Consider relevant elements regarding **Goal setting, Specification and Contract models.**
4. **Porter's five forces and positioning:** Use procedures in order to establish an optimal strategy directed against the market and the suppliers.
5. Consider **Critical factors:** The essence from prior work finding relevant key elements for input to the strategy.
6. Establishing **Specific procurement strategy**, included prequalification.

Demand is obviously the first and essential main step in the establishing process. As presented in section 3.3 important constraints are established at this stage. The analyses have to investigate the available market, spend, risk and uncertainty, buy/make and main cost drivers. It's important to establish consistent goal settings, specifications and contract models. The goal settings have to be based on quantifiable achievements. Potential suppliers and partners have to be compliance according to Statoil's Code of Conduct. The element is important in order to ensure compliance to Statoil's IDD and CSR process and Anti-trust laws. Acknowledged facts and information are systematized by different types of models. Some examples of models utilized are Kraljic's Matrix, Porters five forces analysis and SWOT analyses. The specific procurement strategy should also include schedule and implementation plan, estimated values, and local regulations in the area considered. The last step before the final strategy is formulated consists of critical factors. The critical factors have to ensure that all crucial elements are included in the strategy. There are no fixed arrangements between the different levels, and the different levels have to be customized according to the specific procurement. The interaction between category strategy and specific procurement strategy can be illustrated by figure 11. Prequalification is a parallel activity implemented as the specific procurement strategy is formed.

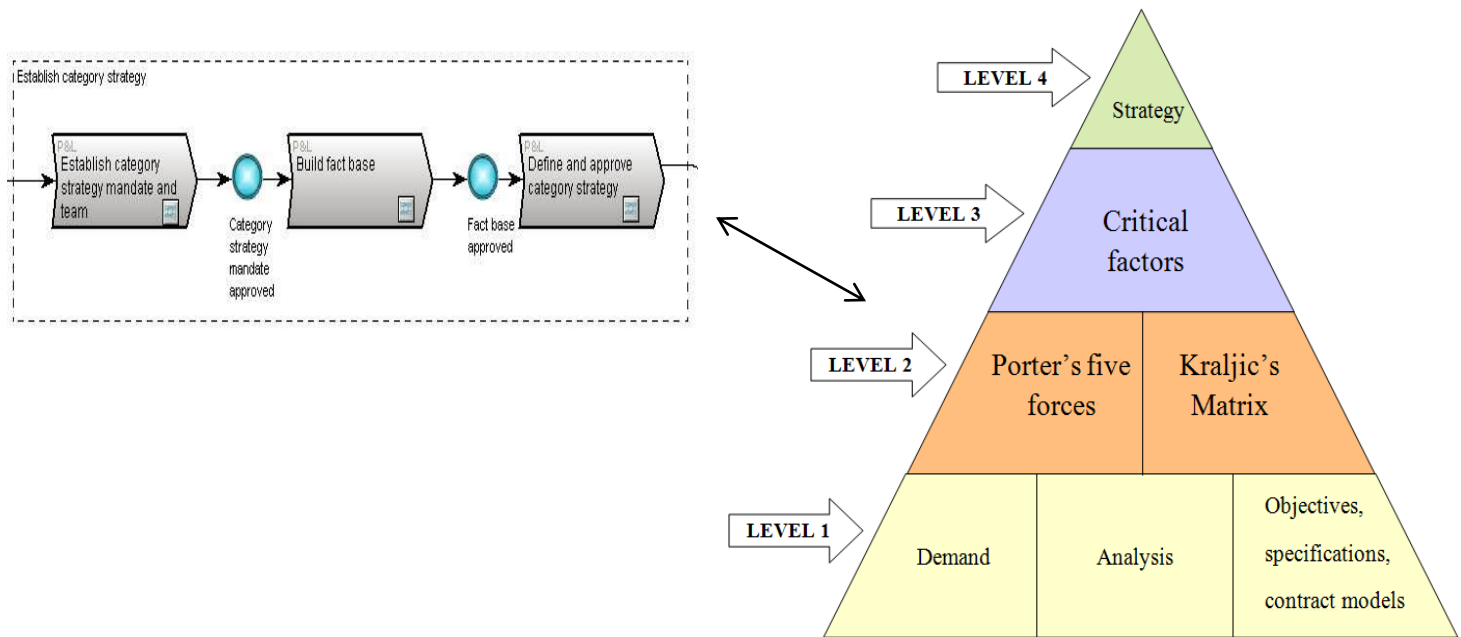


Figure 11: Illustration of the dynamic interaction between category strategy and establishment of a specific procurement strategy. The strategy process can be separated in four main levels⁸.

As stated several times, the specific procurement strategy has to be aligned with the relevant category strategy. Establishment of a new strategy has to include improvements, in other words ambitious and particular goals. In the starting process to establish a new strategy some essential elements need to be prepared. This includes the following:⁸

- Establishment of a cross functional contract team. The contract team should involve functions within procurement, project management, project control, HSE, Quality, Finance and Insurance, technical disciplines, legal, user representative and risk management. A cross functional team ensures attention to all relevant aspects of the strategy, as well as technical and commercial mind-set.
- Consideration of category strategy.
- An overall plan for execution in relation to time, resources and timing has to be established.

Several of the specific procurement strategies have previously established category strategies, and much of the work done at a category level can be used when preparing a specific procurement strategy. This applies directly at the analyze level. Analyses carried out at category level can be used directly in the specific procurement strategy with updated quantities. The specific procurement strategy has to reflect relevant elements from the category strategy. The establishment process includes prequalification and completion of a bidder list. The three main phases for specific procurement strategy establishment is prepare,

prequalify and finalize, as illustrated by figure 12. The preparing phase consists of the methodical approach described above through the six main steps. The four different levels in the specific procurement strategy process are presented in the next sections.

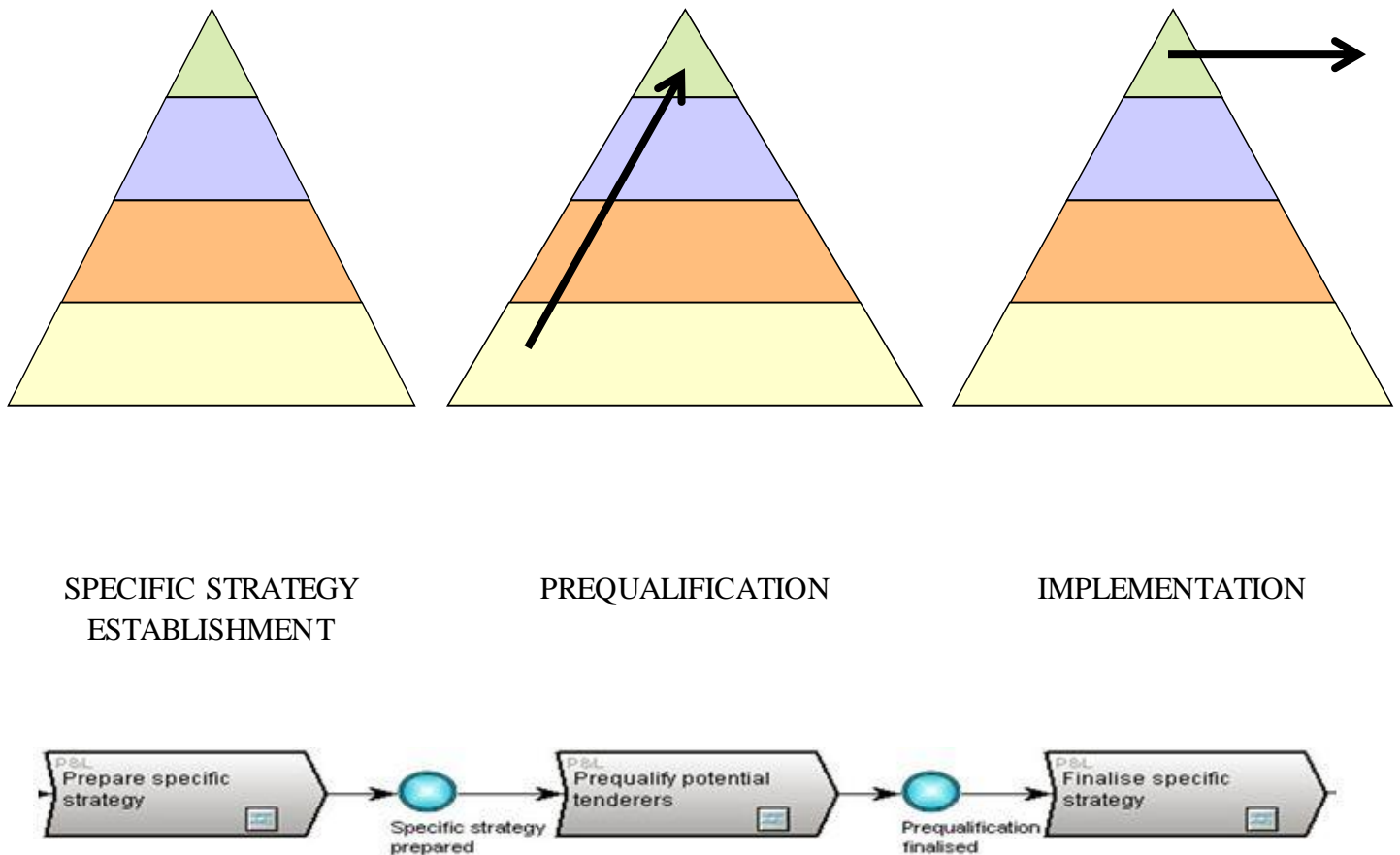


Figure 12: Three main phases in relation to specific procurement strategy establishment⁸.

3.4.1.1 The strategy process – Level 1

Level 1 in the strategy process illustrated by figure 11 includes the three main activities demand, analyses and goal settings. The key steps within demand consist of fact finding and demand verification. Fact findings should ensure that all relevant facts are collected and examined. This information could be found through market reports, business pages, analyses, public information and scientific researches. The information has to be re – evaluated, double checked, compared and evaluated through a critical approach. The purpose of demand verification is to get the most cost efficient solution. Several questions should be examined in order to verify the actual demand. A few examples are: Is the need real or could it be reduced or excluded? Do alternative solutions exist? Is the need nice to have or necessary? How can this be approached more proficiently? Are there any deviations between the actual demand and the tender?⁸ As pointed out by the examples of questions, demand verification should be

done in all phases including strategy establishment, prequalification and implementation. The next step which has to be done at level 1 consists of analyses. Several analyses have to be executed, including:

- Spend analysis.
- Main cost driver analysis.
- Risk and uncertainty assessment – Analysis/Matrices/Evaluation.
- Market analysis – Market shares / Understanding the market.
- Buy – make analysis.

Spend analysis have to be applied in order to get an overview of total spend. It should be investigated how much each goods or service contributed to total spend. This information is essential with respect to future evaluation process and expectations regarding prices. As third – party spend is segmented into categories in order to identify and implement an optimized sourcing strategy, it is possible to reduce cost and consequently increase profit effectively through category management.¹³ Main cost driver analyses are executed in order to reduce costs through improved processes. The cross functional approach includes identifying and quantifying relevant cost drivers. Examples of cost drivers are cost per goods or service (purchase cost), spare parts, maintenance, transaction cost (costs related to establishment of agreements, purchase orders (PO) and invoice handling), logistical costs (costs linked to warehousing, inbound logistics, outbound logistics to end user and return logistics) and cost of installation and removal of materials. The objective of risk assessment is to identify possible risk elements and create actions to remove or reduce actual risks. Risk analyses are performed on elements such as cost, time, technology, capacity, quality and HSE. The risk measures are quantified based on probability and consequence.⁸ In relation to risk analyses a possible fallback – solution should be considered. The purpose of the fallback – solution is to ensure flexibility in the strategy phase, and needs to be established if there are no effects of actions to handle risk or a low probability situation arise. In-house and external solutions have to be evaluated. A market analysis can be described as an externally oriented activity for selecting a supplier or group of suppliers. A market analysis is required in order to get an overview of the actual supplier market for the specific demand. The identified supplier has to satisfy the specific demand in a competitively advantaged manner. It's important to be aware that prequalification, as a part of the strategy establishment process, could limit the actual market. The following characteristics are representative for a supplier with the most competitive advantage:¹⁷

- *They are low – cost producers* who have carried out the most advanced engineering technologies or best practice service concept to achieve the lowest variable costs.
- *They have the best cost control* with the quality processes and supporting systems in delivering the consistent results.

- *They have the best new technology and innovation cycles, with supporting networks of suppliers who get them leading – edge practices.*
- *They are generally first to the market with new improvements as they have a leadership for characteristic goods and services.*

The essential aspect is to understand the future balance of supply and demand and the effects on quality, price and capacity. Relevant information and data have to be collected, systemized and analyzed. A buy – make analysis gives important inputs to the specific strategy, dimensioning and contract packages. It is important to be specific in relation to what's the most cost-efficient to do for Statoil and the supplier. An important aspect is to keep the ordering competence in Statoil. This includes both strategic elements and overall perspective considerations. If the service is strategic important, it is important to keep it in-house. Buy – make analysis should be executed in order to get the right response in the market and with respect to dimensioning of contract packages. A matrix is helpful in these considerations. The last step at level 1 includes goal settings, specifications and contract models. The goal settings should be ambitious, specific and measurable. These have to be based on category management. The selected type of specification has a direct impact on competition. If the specifications are very detailed or supplier specific this generally reduces competition. Performance based – specifications and functional specifications increase competition. A right specification level ensures optimal cost impact. Opened specifications may also introduce new suppliers and solutions. Specification management has an impact on cost, market and risk. Detailed specification may expose Statoil for risk. Opened specifications and effective guarantees should ensure that the risk exposure is on the supplier. Contract models include a contract dimensioning strategy. The main objective is an optimal dimensioning of contracts in order to give the best response in the market. This involves interface management and resources and administration. The output from level 1 has to be used as input to the next levels. Market analysis and cost drivers output will mainly have most relevance in level 2 in relation to Porter's five forces and Kraljic's matrix. Goal setting, specifications and contract model are mainly relevant in level 3 and 4. However, it is important to be aware that findings in upper levels can lead to new activities on lower levels.⁸

3.4.1.2 The strategy process – Level 2

Level 2 in the specific procurement strategy process includes two models. Specifically, these are Porter's five forces and Kraljic's matrix. The two models will be presented in this section. Porter's model is a market analysis tool created by Dr. Michael Porter at Harvard University. The model has been a support to business and marketing strategies for the last twenty years. The model can be used in relation to determine the best suppliers and to analyze markets in developing new products, services, or geographic strategies. As illustrated in figure 13, Porter's model is created on a five – force perspective of the market. These are:¹⁷

- Threat of New Entrants.

- Determinants of Supplier Power.
- Rivalry Among Existing Firms.
- Determinants of Buyer Power.
- Threat of Substitute Products.

Figure 13 illustrates how each force influence the industry competition. Some considerations behind each of these major forces are also outlined.

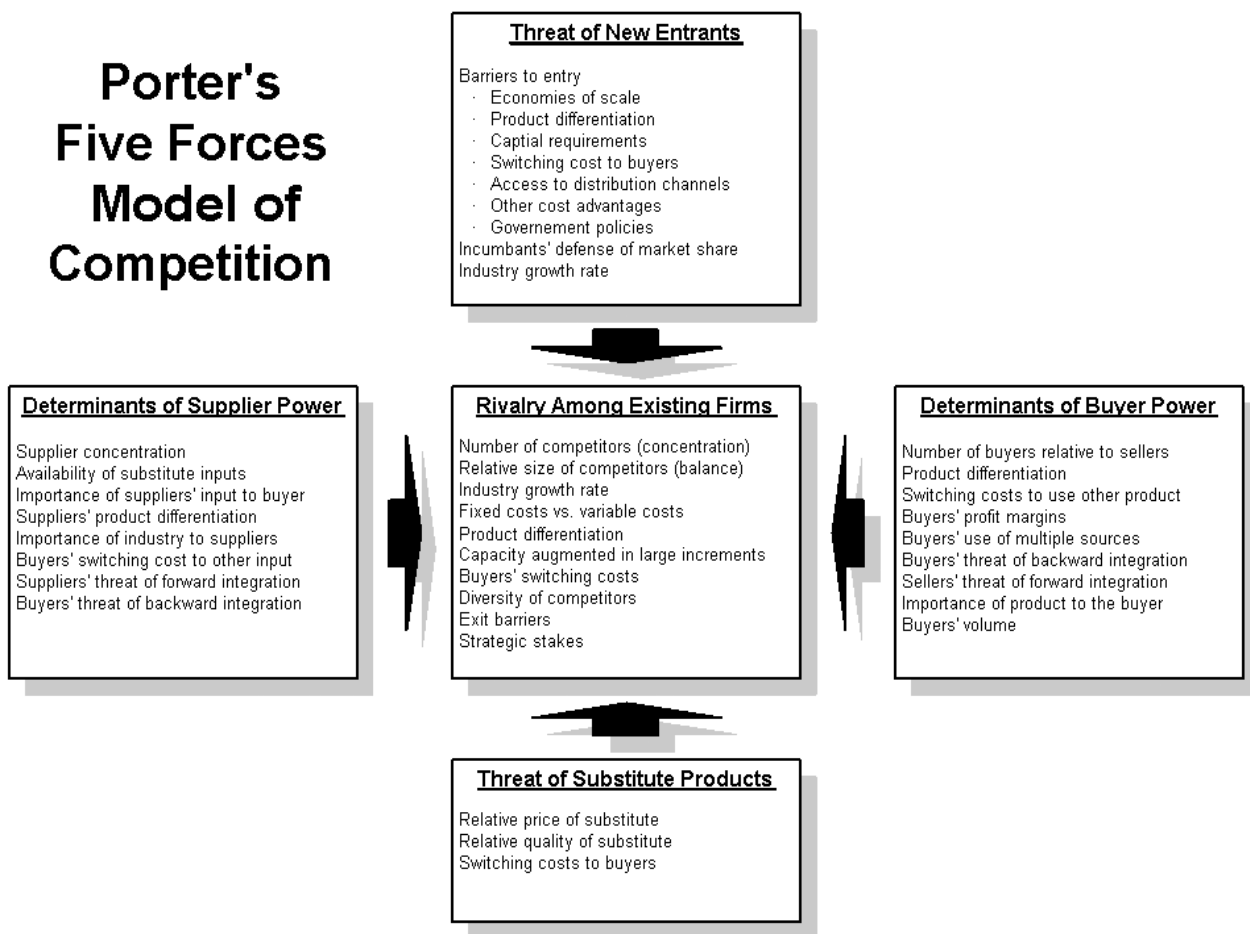


Figure 13: Porter's five forces model and considerations⁸.

Three of the forces refer to competition due to external sources, while the remaining two are internal threats. The model generally defines the competitive intensity and consequently the attractiveness of a market. All the five forces apply whether an industry is national or global, and the collective strength of the five competitive forces regulate the capability of a company to earn on average, rates of return on investment in excess of the cost of capital. The strength of the five forces depends on industry and varies as the industry develops. Industry

profitability is determined by the five forces as they influence prices, costs and required investments of organizations in an industry. In other words, all the elements related to return of an investment. Threat of substitution and buyer power has impact on the prices a company can charge. Buyer power may also influence cost and investment as powerful buyers usually demand expensive service. Cost of raw materials and other inputs are determined by the bargain power of suppliers. The intensity of rivalry has an impact regarding prices and costs of competing in areas such as plant facilities, product development, advertising, and size of sales force. The last of the five forces, the threat of entry, puts a limit on prices and forms the investment required to prevent entrants. Several trends have a significant effect on the five competitive forces. The trends include among others technology, regulatory, global markets, economic, demographic, social values and local laws. For example, pure competition works toward technical efficiency and inefficient companies producing at high cost will not survive in competition with technically efficient companies producing on average costs. Intense global competition causes cost reduction. The Porter model is also a remarkable platform in order to understand strategies, expected fluctuations in the market, new technology directions, and how to advance market leverage. The horizontal forces in figure 13, Suppliers ↔ Rivals ↔ Customers, define the economic structure of the market. The vertical forces in figure 13, New Entrants ↔ Rivals ↔ Substitutes, define potential change to a market. It is crucial to understand how these forces work and interact when choosing the most suitable suppliers for the required demand.¹⁷ The second model which could be used at level 2 in the specific procurement strategy process is Kraljic's matrix / Kraljic's purchasing portfolio model. This model was the first comprehensive portfolio approach for purchasing and supply management. Kraljic's purchasing portfolio model involves construction of a portfolio matrix where products are classified based on two dimensions: profit impact and supply risk. The model is shown in figure 14.

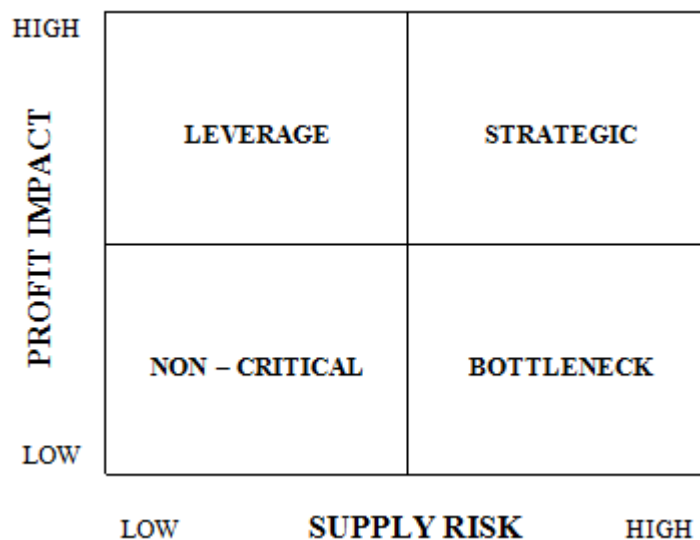


Figure 14: Kraljic's portfolio matrix⁸.

As pointed out by the matrix, not all products and buyer – supplier relationships can be managed in the same way. In general, the purpose of the purchasing portfolio matrix is to develop differentiated purchasing and supplier strategies. Figure 15 illustrates three strategic areas of the matrix with corresponding directions. The directions are utilize, balance and diversify. These are highlighted in respectively green, yellow and red.

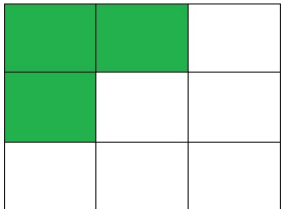
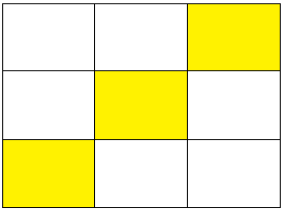
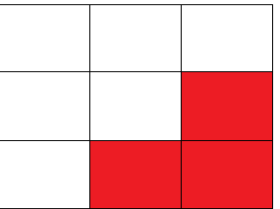
Strategic issue	 (Utilize)	 (Balance)	 (Diversify)
Price	Press to reduce	Opportunistic negotiations	Low profile
Sourcing strategy	Spot	Contracts and spot	Secure supply
New suppliers	Monitor / observe (periodic market assessments)	Selected suppliers	Search actively
Buy / make	Buy + / Make -	Selective assessment	Buy - / Make +
Substitutes	Monitor / observe	Pursue opportunities	Search actively

Figure 15: Strategic issues in the three strategic directions⁸.

The strategic directions give differentiated approaches related to important strategic reflections. An important part of the analysis is to identify where the company is positioned in the strategic areas and where they want to move. If Statoil has identified their position to be non-critical, they might move from single contracts and PO’s to the use of frame agreements. Buying power should be identified and utilized. In a leverage position Statoil may perhaps consider developing a strategic partnership. Illustration of this is high tech R&D partnership. A strategic partnership has to be well considered and the supplier has to contribute to Statoil’s competitive advantage.⁸ In a strategic position Statoil might terminate partnership as strategic partnerships often are complicated. The attention should be to find new suppliers and reduce supplier dependence. In a bottleneck position the focus should be on substitutes, opening up specifications, search for alternatives and risk reducing actions. Supplier dependency has to be reduced. The amount produced from level 2 will be the input to level 3. The output from level 1 should also be used in relation to level 3 considerations.

3.4.1.3 Critical factors – Level 3

Critical factors are the last step before the specific procurement strategy can be established. Critical factors are positioned at level 3 in the strategy process and they have to be identified in order to establish a strategy. Both internal and external critical factors have to be managed. The critical factors could be related to elements such as competition, scope, capacity, Quality/HSE, personnel, innovation and time. The critical factors have to be a summarization and pinpoint of the most vital aspects to ensure when establishing the specific procurement strategy. They have to be concrete in order to secure efficient strategies. For instance, minor competition is not a well – defined exact critical factor. Lack of competition with two suppliers sharing the market geographically is a more detailed statement.⁸ It is important to emphasize on formulating the critical factors in an optimized way.

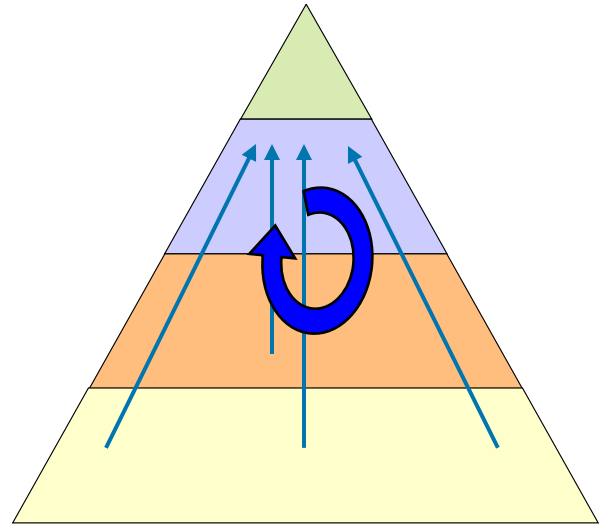


Figure 16: Level interactions⁸.

3.4.1.4 Specific strategy in the SCM process – Level 4

The specific procurement strategy consists of the essence from previous levels in the strategy process. The objective is to deliver goods and services according to the actual demand and enable improvements that ensure the most cost efficient solution. The critical factors are expected to act as catalysts of the earlier levels in the specific procurement strategy process and have to contribute establishing an operative strategy with specific measures. All assessments and analyses have to be integrated into a strategy. The elements from the strategy process have to be handled holistic and in parallel. As stated in section 3.3 an overall business understanding is essential. Some illustrations exemplify this:⁸

- Lack of capacity → develop / find new suppliers.
- Lack of skilled personnel → challenge suppliers.
- Lack of new technology → enter new markets, support the industry.
- Lack of suppliers → strategic cooperation with one of them to secure capacity.
- Lack of competition → affect market situation.

The methodology related to a specific procurement strategy process includes four key steps. These are category management considerations, strategy foundation based on the results from analyses, ambitious and achievable goals and prequalification as a part of the strategy process. Some of the challenges associated with specific procurement strategy development include

specific goal setting, implementation: Operation and KPI identification, synergy management and cost reduction. Strategy considerations include the elements market, risks and contractual models. Risks and contractual models are managed in Level 1 – Analysis and Objectives / Specifications / Contract models. Considerations linked to risks are scope, quality, HSE, personnel, innovation, capacity and response time. Contractual model considerations include dimensioning, length, options, incentives and compensation format. Strategy considerations related to the market consist of relation type, timing, horizontal / vertical integration and competition model / parallel agreements. According to figure 12, prequalification has to be performed in parallel with the process of establishing a specific procurement strategy. The process starts at level 1 and ends before the strategy is finalized. Prequalification is executed in order to identify and accept potential suppliers in a market segment by avoiding unnecessary risks, utilizing new opportunities in the market and understanding unavoidable risks. Whether a supplier is capable to fulfill an agreement or not is determined by prequalification based on the selection criteria. A strategy is not successful until it has been implemented. This includes approval, internal and selective marketing of strategy after IBC, enquiry according to goals and strategy, negotiations, supplier follow – up and contract administration. As a summary of the specific procurement strategy process, the finalized new strategy has to reflect relevant elements from the previous phases including demand, analysis, goal settings, models, critical factors and considerations related to prioritizations and cost benefit. The strategy elements have to be specific, manageable and realizable with required resources to obtain anticipated effects and goals. In order to ensure achievement, routines for implementation of the strategy have to be established. Main issues from prequalification and strategic considerations have to be consistent. If relevant, the strategy has to include main elements related to evaluation criteria and weighting.⁸

4. Methodology

Chapter 4 presents the research methods utilized on this master thesis. The selected methods are based on the defined research questions. These methods are literature review, case study and qualitative semi – structured interviews. First section 4.1 presents a general introduction to classifications of methodologies. Then, section 4.2 introduces classification of research methods according to key research objectives and questions. The qualitative research design is presented in section 4.3. In addition, this section includes some reflections related to single case design and multiple case design. The quality of the research is considered in section 4.4 Validity and reliability. Section 4.5 presents some exploration results.

4.1 Methodologies classification

Methodology can be described as a general approach to studying research topics. A methodology specifies how the studying process of a phenomenon will be carried out.¹⁸ Ellram (1996) classifies research methodologies in two dimensions. Specifically, these are the type of data used and the type of analysis performed on the data. Further classifications of type of data include two parts: empirical and modeling. Real world data or hypothetical data, both anticipated for different types of manipulation into a model, can be categorized as modeled data. Empirical data consists of gathered data from surveys or case studies from the real world. Type of analysis can be separated into quantitative - and qualitative analysis. The main difference between the two types of analysis is related to the use of statistical and mathematical methods of research in quantitative methods. Qualitative research tends to emphasize on written theory and not so much on statistical and mathematical approaches.¹⁹ Thus, qualitative results are normally expressed verbally, often to create an understanding of relationships or complex interactions. Quantitative results are expressed in numerical, quantifiable terms. The selection of research method depends on the researcher's goal and researcher questions. Table 1 illustrates a sample of techniques rather than a complete explanation. Results from quantitative analysis are expressed in numerical quantifiable terms, as opposed to qualitative analysis where results are frequently expressed verbally. In some case study research, both methods are combined. Empirical data will be exposed to greater risk compared to modeled research, due to the fact that empirical research tend to be less predictable and controllable.¹⁹ This master thesis tends to emphasize on written theory and data. However, there are some outlines to the statistical approaches used in relation to the strategy establishment process. I will put emphasis on the use of a qualitative analysis together with an empirical type of data. In addition, I will examine an overall strategy for procurement at an international exploration well project through existing literature on the subject and interviews with experienced project characters in Statoil. According to table 1 – Basic Research Design, this fits to the upper right position of the table.

BASIC RESEARCH DESIGN		TYPE OF ANALYSIS	
		Primarily Quantitative	Primarily Qualitative
TYPE OF DATA	Empirical	Survey data, secondary data, in combination with statistical analysis such as: <ul style="list-style-type: none"> • Cluster analysis • Factor analysis • Discriminant analysis 	Case studies, ethnography, participant observations. Characteristics: <ul style="list-style-type: none"> • Limited statistical analysis (often non – parametric)
	Modeling	<ul style="list-style-type: none"> • Linear programming • Simulation • Mathematical programming • Decision analysis 	<ul style="list-style-type: none"> • Simulation • Role playing

Table 1: Basic research design¹⁹.

4.2 Classification of research methods according to key research objectives and questions

A method can be described as a specific research technique. This includes both quantitative - and qualitative techniques such as interviewing.¹⁸ Research methods can be classified according to key research objectives and questions. The definition of research questions is a vital point in a research study, and has to be done carefully. Research questions should include both a substance related to what the study is about and form. Form is related to “who”, “where”, “what” and “how” questions.²⁰ As stated in section 1.1 Study objectives, the following research questions are examined in this master thesis:

1. How is supply chain management strategies aligned with corporate and business strategies in an organization?
2. How is the overall strategy for procurement process at an international exploration well project structured?
3. Which goods and services are included in an overall strategy for procurement at an international exploration well project and how are these optimized according to category strategies?

Table 2 illustrates how research methods can be classified according to key research objectives and questions. This table is not a complete list of every research method available. The purpose is rather to provide an overview of some of the most commonly used methods. To the left of table 2 is four primary objectives of research presented. To support each objective some typically general questions are shown in the middle column. Far to the right of table 2 are appropriate methodologies for gathering data shown.¹⁹

CLASSIFICATION OF RESEARCH METHODS ACCORDING TO KEY RESEARCH OBJECTIVES AND QUESTIONS		
<i>Objective</i>	<i>Question</i>	<i>Example of appropriate methodologies</i>
Exploration	How, why	<i>Qualitative</i> <ul style="list-style-type: none"> • Experiment • Case study • Participant observation
	How often, how much, how many, who, what, where	<i>Quantitative</i> <ul style="list-style-type: none"> • Survey • Secondary data analysis

Explanation	How, why	<i>Qualitative</i> <ul style="list-style-type: none"> • Experiment • Case study • Grounded theory • Participant observation • Ethnography • Case survey
Description	Who, what, where, how many, how much Who, what, where	<i>Quantitative</i> <ul style="list-style-type: none"> • Survey • Longitudinal • Secondary data analysis <i>Qualitative</i> <ul style="list-style-type: none"> • Case study • Experiment • Grounded theory • Participant observation • Ethnography • Case survey
Prediction	Who, what, where, how many, how much Who, what, where	<i>Quantitative</i> <ul style="list-style-type: none"> • Survey • Longitudinal • Secondary data analysis <i>Qualitative</i> <ul style="list-style-type: none"> • Case study • Experiment • Grounded theory • Participant observation • Ethnography • Case survey

Table 2: Classification of research methods¹⁹.

This master thesis is an exploratory research where the research questions are related to how something is being done. A case study methodology is then preferred in order to get depth and insight into an unknown phenomenon. The case study method is commonly used as research method in many situations.²⁰ Case studies can be used in order to create theory and then tested with surveys, or as a follow up to surveys to provide greater insight. In brief, the case study method generally gives emphasis to qualitative, in depth study of one or a small number of cases. A qualitative approach is desired if the objective is to explain and describe a phenomenon due to the depth and richness achieved. Another benefit of a qualitative approach is the ability a researcher obtains in order to go into the how and why questions. The objective of this thesis is to explore how an overall strategy for procurement at an international exploration well project is established. Consequently, I believe an appropriate research design is to use an explorative, qualitative, empirical and single case study design. In addition, I also have applied some explanatory and descriptive research objectives.

4.3 Qualitative research design

Several confusing issues exist in the literature related to discussions of the case study research. One of the issues is that case study research has often been discussed as a “single technique”, such as structured interviews. However, data collection and analysis techniques are actually also part of the case study method.¹⁹ When different techniques are used in order to study the same phenomena it provides validity within the case study method. This is termed triangulation. Three primary techniques can be used in the case study method:

1. Direct observation
2. Indirect observation
3. Interviews

Table 3 describes the three different techniques. In this thesis I have used the interview technique. Interviews are executed for the explorative and descriptive research related to an overall strategy for procurement at an international exploration well project. Qualitative interviews are separated into three main groups. These are structured, semi structured and unstructured interviews. I have used semi structured interviews through a general interview guide. This was a good way to get information from international project participants in Statoil.

QUALITATIVE DATA COLLECTION TECHNIQUES	
Direct observation	<p>Kinesics (body language)</p> <p>Unstructured observations</p> <p>Street Ethnography – observe location</p> <p>Structured observation using:</p> <ul style="list-style-type: none"> • Checklist • Scales for rating • Predetermined categories <p>Participant observation</p> <p>Proxemics (use of personal space)</p>
Indirect observation	<p>Audio recordings</p> <p>Video tapes</p> <p>Content analysis</p> <p>Diary / self – reporting</p>
Interviewing	<p><i>Unstructured</i></p> <ul style="list-style-type: none"> • Conventional • Key information / elite interview <p><i>Semi – structured</i></p> <ul style="list-style-type: none"> • Ethnographic interview • Focus group • Individual biography • Critical incidents • Historical analysis <p><i>Structured interviewing</i></p> <ul style="list-style-type: none"> • Questionnaire (open ended) • Raking / rating scales • Closed end “test”

Table 3: Qualitative data collection techniques¹⁹.

4.3.1 Single and multiple case design

A fundamental issue related to case study analysis is to determine whether a single case or a multiple case study should be used. In order to use a multiple case study it is necessary to decide how many cases that should be done to accomplish the wanted generalizability.¹⁹ A single case study is an appropriate design under several circumstances. Particularly it is well suited to test a well – formulated theory, an extreme or unique case, or a case which reveals a previously inaccessible phenomenon. A single case meeting all of the conditions for testing a theory, can confirm, challenge, or extend the theory.²⁰ I wanted to consider an overall strategy for procurement at an international exploration well project from an oil companies perspective, which brought me into a single case design. The case study was accomplished in relation to an international exploration well project in Statoil, specifically the Amundsen #1 exploration well project in Alaska. Due to my participating in the Amundsen #1 exploration well project in Alaska since November 2011, I also achieved insight to the overall strategy for the procurement process by direct observation.

4.4 Validity and reliability

Whether quantitative or qualitative analysis, four tests relevant for case studies may be considered in order to judge the quality of a research design. As the four tests are common to all social science methods, the tests have been summarized in several textbooks. The following list gives a short outline to the four tests:²⁰

- **Construct validity:** Identify correct operational measures for the concepts being studied.
- **Internal validity** (*for explanatory or causal studies only and not for descriptive or exploratory studies*): Seek to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships.
- **External validity:** Defining the domain to which a case study's findings can be generalized.
- **Reliability:** Demonstrating that the operations of a study – such as data collection procedures – can be repeated with the same results.

For case studies several tactics exist in order to deal with these tests. These are illustrated in table 4.

Tests	Case Study Tactic	Phase of research in which tactics occurs
Construct validity	<ul style="list-style-type: none"> - Use multiple sources of evidence - Establish chain of evidence - Have key informants review of draft case study report 	Data collection Data collection Composition
Internal validity	<ul style="list-style-type: none"> - Do pattern matching - Do explanation building - Address rival explanations - Use logic models 	Data analysis Data analysis Data analysis Data analysis
External validity	<ul style="list-style-type: none"> - Use theory in single – case studies - Use replication logic in multiple – case studies 	Research design Research design
Reliability	<ul style="list-style-type: none"> - Use case study protocol - Develop case study database 	Data collection Data collection

Table 4: Case study tactics for four design tests²⁰.

According to table 4, the case study research method has to satisfy requirements related to validity and reliability. The selected research method should provide reliable knowledge of the research questions. Validity concerns relevance and rationality. The problem is related to whether a study's findings are generalizable beyond the immediate case study. Reliability is related to accuracy or exactness in a study. The main objective is to ensure that if another investigator followed the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should get the same findings and conclusions. It should be noted that the emphasis is on doing the same case over again, not on repeating the results of one case by doing another case study. The goal of reliability is minimizing the errors and biases in a study.²⁰ In this thesis I have used both theory in a single case study and qualitative semi – structured interviewing. The purpose of a qualitative research interview is to obtain qualitative descriptions of the life world of the subject with respect to interpretation of their meaning. Semi – structured interviews are based on an interview guide where a sequence of themes has to be covered, as well as suggested questions. In semi – structured interviews there is an openness to change the sequence and form the questions in order to follow up the answers given and the stories told by the subjects.²¹ In this research a general interview guide was conducted and introduced to a selected group of relevant candidates in Statoil. These resourced candidates were strategic selected, as they were expected to provide information related to the research questions. Essential aspects were considered to be project character and experiences within international exploration well projects. This was carefully done together with my supervisor in Statoil, Oddmund Fuglestad. Among the interviewees were project leaders, drilling supply

responsibilities / logistics managers and other characters related to service procurement in international exploration well projects. The interview guide is attached in Chapter 9 Appendix. The validity of information from the interviews can be discussed, as a sample of seven interviewees is accomplished and the interviewees are located in the same geographical region. However, the information is related to international projects and the interviewees hold extensive knowledge and experience within numerous of different international exploration well projects. This supports the validity requirement. In addition, the interviews were executed in – person, recorded on tape and double – checked through e-mail correspondence with interviewees. This should improve the quality of the interview. The requirement related to reliability is hard to measure in a qualitative analysis. This is because the information becomes individual and circumstance dependent. The information and answers achieved from the interviewees has to be relied on. However, open questions in semi – structured interviews should build up the reliability. In addition, direct observation due to my participating in the Amundsen #1 exploration well project should support the reliability requirement. The general way to approach the reliability problem in a case study is according to Yin (2009) “making as many steps as operational as possible and conduct the research as someone always look over your shoulder”.²⁰ This master thesis’s objective is restricted to the concrete research questions and the organization utilized in the case study. Consequently, the data collection and analyses related to the case study and some of the theory review sections in the thesis are valid for this concrete organization. However, I believe that the results and findings could be valid for other companies involved in international projects as well.

4.5 Exploration results

The necessary knowledge of the theoretic basis in relation to this master thesis is built on the course MIN120 Contracts – Design and Management at the University of Stavanger. In addition, new knowledge is obtained due to literature search, interviews and involvement at the Amundsen #1 exploration well project. Initial research of theory related to an overall strategy for procurement at an international exploration well project revealed that there was limited literature available. Most of the theory concerning category management and strategy is related to a retail or marketing context. In this research category management and strategy is linked to an organization’s sourcing, procurement and supply management process, in other words in a supply context. Consequently, it has been quite a challenge to sort out and identify relevant theory in the literature search.

5. Case study – The Amundsen #1 exploration well project in Alaska

The research design used in relation to this master thesis is an explorative, qualitative, empirical and single case study design, as discussed in chapter 4. A case study gives emphasis to qualitative, in depth study of one or a small number of cases and is suitable if the objective is to explain and describe a phenomenon due to the depth and richness achieved. Another benefit of a qualitative approach is the ability a researcher obtains in order to go into the “how” and “why” questions. That is a significant advantage with reference to the outlined research questions stated in section 4.2. The research method used in order to collect data is qualitative interviews, and the discoveries from the interviews are incorporated thru this chapter. The theory review chapter states that an overall strategy for procurement at an international exploration well has to include a strategy per goods and services. If no existing master service agreements / frame agreements are applicable for the required goods or service at the international exploration well project, a new agreement has to be established. As stated in section 3.4, agreements exceeding 10 MNOK have to establish a specific procurement strategy. The specific procurement strategy has to be aligned with relevant category strategy. Furthermore, the category strategies have to be aligned with business – and corporate strategies in Statoil. Based on the demanded goods and service for the Amundsen #1 exploration well project, several category strategies are identified valid. These are highlighted with red arrows in figure 17 and include Offshore support vessels, Helicopter and chartered fixed wing transport, Supply base, transport and waste disposal, Drilling services, OCTG and related equipment and services, Surface equipment and Drilling mobile units and LWI. The key findings from the conducted interviews in relation to this master thesis are linked to category strategies. Several of the interviewees reveal that they are not familiar with guidelines stated in category strategies. And if the interviewees are familiar with the category strategies, they express that several of the category strategies are not updated and customized according to international exploration well projects. Consequently, section 5.4.4 – 5.4.10 presents evaluations of the valid category strategies at the Amundsen #1 exploration well project according to theory stated in Chapter 3. In general, discoveries from the conducted interviews are used to confirm or disprove my preliminary findings of each evaluated category strategy. The first section 5.1 is written in order to present some general information of Statoil’s activities in Alaska. An international exploration well involves several divisions in Statoil, each working to optimize different areas. Therefore, section 5.2 describes the project’s organization structure. Section 5.3 illustrates the decision gates process and provides a general introduction into project development for an international exploration well in Statoil. Section 5.4 presents the single case study utilized in relation to the selected research method. The main emphasis is related to category strategies in Statoil. Each of the relevant category strategies at the Amundsen #1 exploration well project is evaluated according to theory.

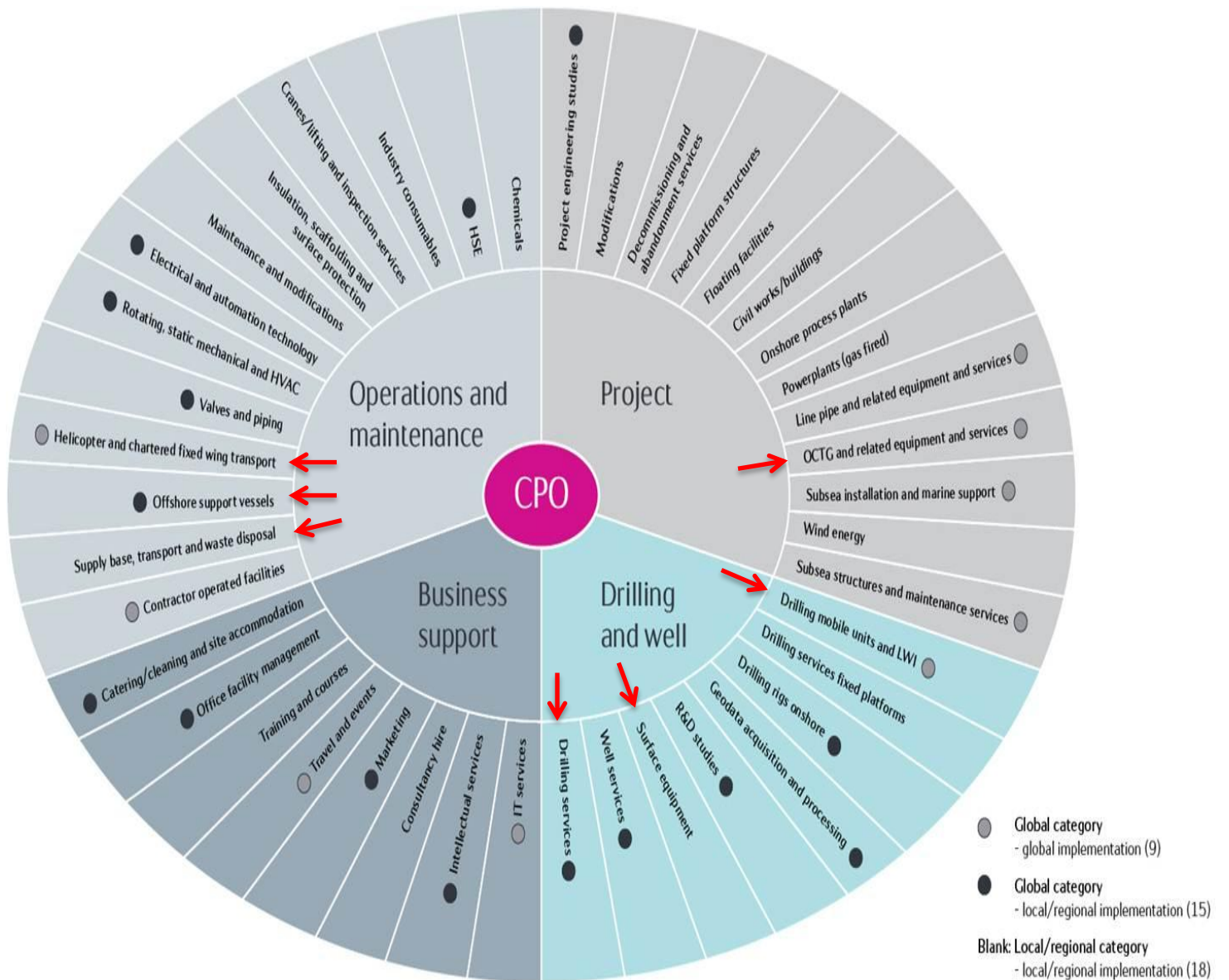


Figure 17: The examined category strategies are highlighted with red arrows.

5.1 Statoil in Alaska

This section presents a short list of Statoil's involvement in Alaska. Statoil's portfolio in Alaska consists of several exploration leases. These are:²²

- Partner in 50 leases in Chukchi Sea
 - *ConocoPhillips (Operator - 65%), Statoil (25%) and CNOOC (10%).*
- Operator in 14 leases in Chukchi Sea
 - *Statoil (Operator – 60%), ENI (40%)*
- Operator in 2 leases
 - *Statoil (100%)*

Figure 18 displays where the Amundsen #1 exploration well project is located in the Chukchi Sea in Alaska. The ConocoPhillips operated lease Devils Paw is also shown. Statoil holds 25% in Devils Paw.

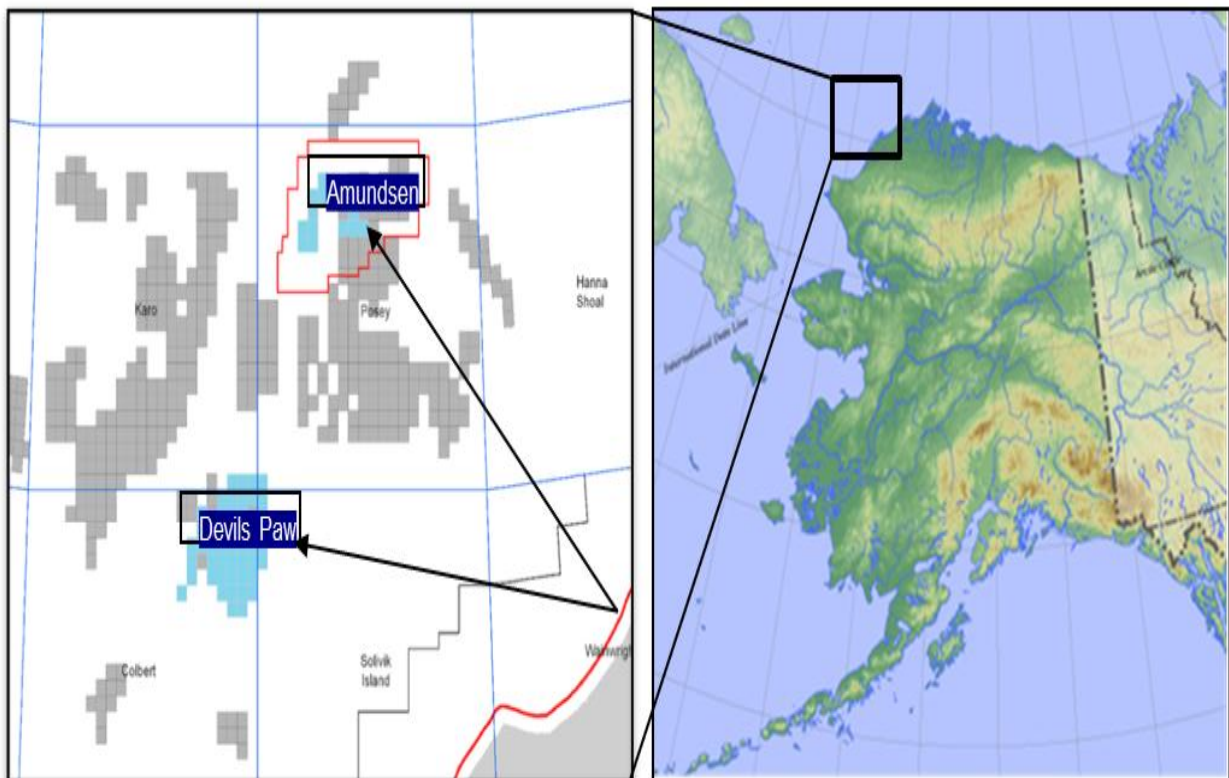


Figure 18: The Amundsen #1 exploration well location²².

5.2 Organization structure

Statoil wants to execute exploration drilling in the Chukchi Sea in the open water season in 2014 (August to October). The main objective is to plan and prepare for the exploratory drilling of the Amundsen #1 prospect. The scope of work consists of planning, engineering, procurement, permitting, logistics, mobilization, transportation and delivery of the documentation, facilities and equipment for the well. As stated in Statoil's operating model, Exploration North America Alaska (EXP NA ALA) as Client for the 2014 Statoil Operated Amundsen #1 exploration well in Chukchi Sea allocates the responsibility for the well planning, coordination and execution tasks to Drilling & Well US Offshore (DPNA UOF D&W). Statoil Development & Production North America (DPNA) head office is positioned in Houston. Statoil USA E&P Inc., the legal entity, is organized within DPNA. In June 2011 the Statoil Anchorage office was opened. The Anchorage office manages exploration activities in Alaska and is organized under Statoil EXP NA. On behalf of DPNA UOF D&W the Drilling and Well operations (TPD D&W DWS IND ED1 ALA) will take care of planning and execute activities. Statoil TPD D&W DWS in Norway will support the Drilling & Well Alaska entity with recommendations, verifications and advices.²³ The well construction process according to ARIS – Management system is described in section 5.3.

5.3 Well construction process

According to figure 21 the two identified functional requirements in relation to the well construction process for the Amundsen #1 exploration project are FR01 Exploration and FR03 Drilling and Well Technology. The objective of FR01 Exploration is to state function requirements for all exploration activities, and consequently it applies to the Amundsen #1 exploration well project. Statoil's worldwide exploration activities are regulated by FR01 as long as it is consistent with applicable laws, regulations and agreements in force. FR03 Drilling and Well Technology apply to the Amundsen #1 exploration project as the document states Statoil's corporate functional requirements to all drilling and well related activities. Drilling and well related activities include well construction, drilling, completion and well intervention. FR03 states that specific drilling and well deliveries to project development have to be complementary to requirements in FR05 Project development and FR02 Facility concept development and engineering. A typical Exploration venture starts with screening of potential exploration areas (pre DGA) and ends with post – discovery handover (DG0). Decision gates (DG) and approval points (AP) represent milestones where the status of the venture has to be reviewed in order to conclude whether the venture will be continued, whether major changes need to be made, or the project should be terminated.²⁴ Figure 19 shows the generic Exploration Value Chain Process.

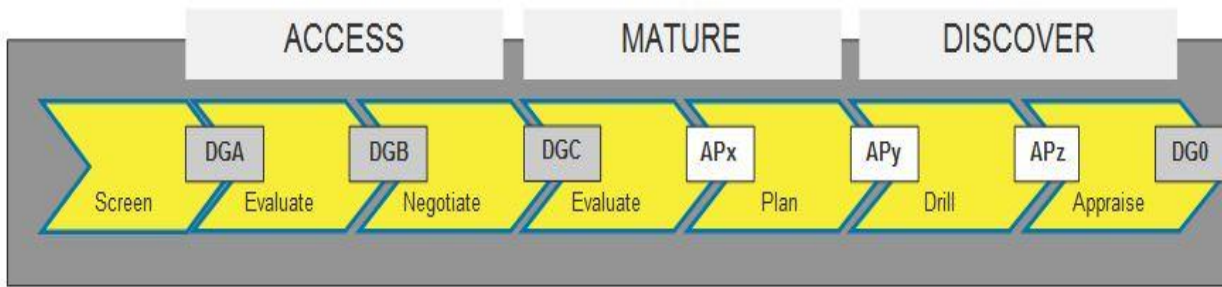


Figure 19: The generic Exploration Value Chain Process. DGA, DGB, DGC, AP_x, AP_y, AP_z and DG0 represents decision gates (DG) and approval points (AP) in an investment project²⁴.

The DGA for an exploration venture involves an internal approval to assess an area to pursue a new exploration business opportunity. The DGB includes the internal approval for submitting a formal bid or application for a specific exploration license or acreage. The DGC consists of the final approval and external commitment to access an exploration license, lease or concession. AP_x, AP_y and AP_z represent approval points. Requirements for approval point AP_x: “Approval to initiate well planning” includes the internal approval to initiate well planning for a globally prioritized drilling candidate. The approval point AP_y: “Approval to commit to drill a well” includes an internal approval to commit to drill a specified well. The approval point AP_z: “Approval to start appraisal of a discovery” for an exploration venture includes an internal approval to start appraisal of a discovery. The objective is to cost effectively reduce prevailing uncertainties in the total resource estimation of the subsurface case and subsurface related input to the field development design basis.²⁴ FR03 states Statoil’s corporate functional requirements to all drilling and well related activities including drilling, geo operations, well construction, well intervention and completion.²⁵ Everyone involved in Statoil’s drilling and well activities are the anticipated target group. The well construction process is established on the principles of the described Capital Value Process (CVP) in Chapter 2 and has to be used for all planning and execution activities in drilling operations and well interventions. The well construction process has defined stages with consistent decision gates (DG). Figure 20 illustrates the well construction process for the Amundsen #1 exploration well project and associated decision gates.²⁵

- Approval to enter the feasibility phase in order to further progress the business case (DG0).
- Feasibility study leading to DG1.
- Selection of concept leading up to DG2b (single operation or standardized well/operation type).
- Planning of single operation or standardized well/operation leading up to DG3b.
- Execution of operation leading up to DG4.
- Post DG4 activities.



Figure 20: The Well construction process²⁵.

Figure 21 illustrates the project schedule 2012 – 2014 for the Amundsen #1 exploration well project. The schedule displays different approval points, decision gates, responsibilities and valid functional requirements for the Amundsen #1 exploration well project. The valid approval points are AP_y and AP_z. Applicable decision gates are Pre DG0 and DG1, DG2b, DG3b and DG4. As illustrated by the figure, the Amundsen #1 exploration well project is currently in a feasibility study process, leading up to DG1. This includes a feasibility report termed “Feasibility report Amundsen OSC Y – 6280 1” / DG1 report. At DG0 the DG0 Report (RTDE) OSC Y-6280 #1, Amundsen Posey 6260 was provided.

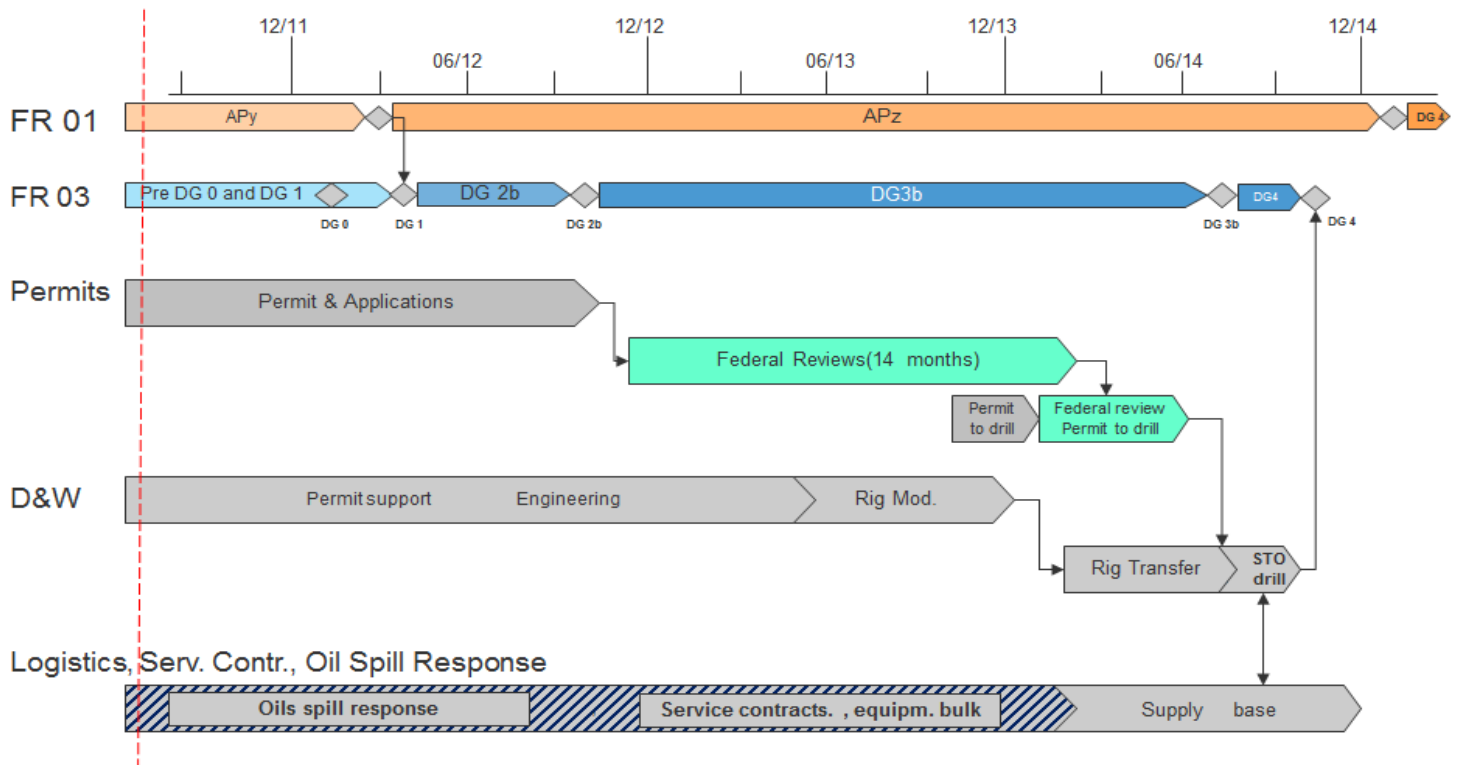


Figure 21: Illustration of the project schedule 2012 – 2014²².

5.4 Overall strategy for procurement

“Strategy is the direction and scope of an organization over the long term. Ideally, the strategy has to match its resources and its changing environment and in particular its markets, customers or clients so as to meet stakeholders’ expectations”.⁶ Statoil is currently building a global exploration unit with the ambition to become a leading global exploration company. Consequently, the company’s supply chain management strategies have to be aligned with this objective as discussed in section 3.1.3. Section 5.4 examines how the category strategies, which forms a basis for project strategy and specific procurement strategy, are aligned with the objective of international growth in Statoil. Each of the valid category strategies at the Amundsen #1 exploration well project are evaluated according to the presented theory in chapter 3. The evaluations of category strategies are based on presentations and communication with representatives from the category responsible group in Statoil. The presentations are stated in Chapter 8 References. Several of the findings from conducted interviews are incorporated in this section. A suggested roadmap in relation to an overall procurement strategy at the Amundsen #1 exploration well project includes:²²

- Market screening of Alaska.
- Overall strategy and approval.
 - Procurement objectives and challenges.
 - Strategy per required goods and service.
 - Alignment to valid category strategies.
 - Specific procurement strategies for new agreements > 10 MNOK.
- Qualification of suppliers.
 - Tender phase.
 - Evaluation phase.
 - Award phase.
- Implementation.

This master thesis’s main emphasis is on key category strategies, related to an international exploration well project. Specifically, three category strategies including Helicopter and chartered fixed wing transportation, Drilling services and Drilling mobile units and LWI are examined comprehensively. In addition to these the categories Offshore support vessels, Supply base, transportation and waste disposal, Surface equipment and OCTG and related equipment and services are examined. The stated demand required in relation to the Amundsen #1 exploration well project is identified through interviews and participation in the project group. It should be noted that some of the required demands could change during the planning and preparing period. This is in accordance with demand verification stated in

section 3.4.1. The sections related to procurement objectives, procurement challenges and market screening in Alaska are written based on relevant theory in Chapter 3, interviews and information acknowledged due to participation in the Amundsen #1 exploration well project. Relevant presentations are stated in Chapter 8 References.

5.4.1 Procurement objectives

Three elements are considered as the main overall strategy objectives for procurement at the Amundsen #1 exploration well project. The identified objectives are consistent with theory stated in section 3.3 and 3.4 and include:²²

1. Focus on Health, Safety, Environment and Quality (HSEQ).
2. Compliance according to Statoil's Code of Conduct.
3. Project goals have to be accomplished cost effectively and within schedule.

The first element includes ensuring that suppliers have sufficient HSEQ standards. The environment in Alaska is considered very harsh and vulnerable, which makes particularly heavy demands on anyone seeking to pursue industrial activities. In order to meet these challenges, protection of the delicate environment in Alaska is extremely important and has to be strictly enforced towards relevant suppliers. A suggested mitigating action concerns focusing on hands – on and close communication with the suppliers during the operation. The second element includes ensuring compliance to Statoil's IDD and CSR process and Anti-trust laws. Integrity due diligence (IDD) refers to the activities carried out in relation to prospective business partners in order to ensure that these have a transparent structure and an ethical business conduct, and to avoid doing any business with anyone which involves the risk of corruption or of reputational damage.²⁶ CSR refers to Company Social Responsibility which defines the principles and guidelines for social risk management, human rights, labor standards, transparency and local content.²⁷ FR11 – Corporate social responsibility states that the project manager should secure that Statoil's activities in a project are directed according to Statoil's CSR policy and requirement. When executing international exploration well projects in frontier areas, one of the main findings from interviews concern culture aspects. Several of the conducted interviews in relation to this master thesis comment culture aspects as an underestimated issue. The local content aspect involved in CSR includes local recruitment, local procurement and local actions to promote social and economic benefits of oil and gas activities in countries where Statoil operates. Statoil should make an effort in order to learn and understand the culture where they operate. The last element within overall strategy objectives for procurement concerns project goals. The project goals should be executed cost efficiently and within schedule. The main actions in order to realize this involve early identification of long lead items such as casing and wellheads, contracts with well – known suppliers, ensuring that deliveries are on time and adequately back – up plans.

5.4.2 Procurement challenges

Some important procurement challenges have to be considered in relation to the Amundsen #1 exploration well project. Alaska is a frontier territory/country for Statoil with identified huge challenges concerning legal, government, supplier issues and contract. There is a “small” Statoil scope with reference to length of contracts. Corresponding issues related to high costs, time frame (long lead items) and risk (infrastructure challenges) have to be considered. As mentioned in section 5.2 Organization structure support organizations in US/Anchorage and Norway have been established. Time is considered as a limited resource. For instance, Conoco Phillips started their procurement plan in 2011 for the drilling operation in 2014. The organization possibly will require huge resources from Statoil. There is a lack of similar projects in Statoil, and hence no one to use as a cost benchmarks. The concerns with respect to contracts are risk and uncertainty aspects in contract terms and conditions offered by the market for supplying and operating equipment and personnel to a such a remote and frontier area, for a small operation period, and the risk of late termination due to external factors.²²

5.4.3 Market screening of Alaska

Three major service suppliers were identified through market screening and travel reports in Alaska. Specifically, these companies were Baker Hughes, Schlumberger and Halliburton. Statoil carried out several suppliers meeting with the same agenda, which included presentation from the suppliers and information regarding the Alaskan market. All the suppliers demonstrated extensive experience in Alaska and they gave an impression to have available resources, personnel, equipment and solutions for the logistics. Logistics is considered a main challenge with respect to infrastructure and the short drilling window. Schlumberger presented plans to work in the Chukchi Sea for Shell in 2013 and Conoco Phillips in 2014 – 2015. Their present work force in Alaska consists of 700 employees. Halliburton presented plans to work for Shell in the Chukchi Sea (3 wells) and Beaufort Sea (2 wells) in 2012. The proposed services are measurement while drilling (MWD), mud logging, cementing and directional drilling. Halliburton’s currently number of staff in Alaska consists of 409 employees. Baker Hughes will provide coring, liners and wire line services for Shell in relation to their operation in the Chukchi Sea in 2012. Baker Hughes consists of 262 employees in Alaska. Table 5 exemplifies an outline to the current market situation in Alaska. There was limited available market information for several of the required goods and services at the Amundsen #1 exploration well project. This is indicated in table 5.²²

Drilling services	<p>Three major suppliers: Schlumberger, Baker and Halliburton.</p> <ul style="list-style-type: none"> • Local supplier available. • Applicable master service agreements. • The suppliers need to have sufficient time in order to mobilize equipment and personnel.
Helicopter and chartered fixed wing	<ul style="list-style-type: none"> • Market screening has revealed that logistics assets are available. • A possible cooperation with other operators should be considered. For instance, helicopter base in cooperation with ConocoPhillips.
Offshore support vessels	<ul style="list-style-type: none"> • Market screening has revealed that logistics assets are available. • A possible cooperation with other operators should be considered. For example, some vessels may be used together with ConocoPhillips.
Mobile drilling units	<ul style="list-style-type: none"> • Jack – up. • Potential contractors are identified.
Base facilities	<ul style="list-style-type: none"> • None.
Other operators	<ul style="list-style-type: none"> • Shell is going to start their drilling operation in the Chukchi Sea in 2012 and has a complete plan ready. • ConocoPhillips will start their drilling plan in 2014. This includes two wells, where one of them is called Devils Paw where Statoil holds 25%. • Cooperation could be of interest for both technical and procurement.

Table 5: Market information in relation to the Amundsen #1 exploration well project²².

5.4.4 Helicopter and chartered fixed wing transport

Helicopters are together with vessels the primary logistic procurement demand considered relevant for the Amundsen #1 exploration well project. Logistics contracts needed in relation to international exploration well projects are frequently sourced from the market. This is confirmed by several of the interviews executed in relation to this thesis. In other words, it is essential that category strategies related to logistics procurement give clear guidelines regarding demand, spend, main cost drivers and market for international exploration well projects. They should also document relevant facts, different analyses, experiences, risk measures, goal settings and critical factors in order to obtain an optimized specific strategy for procurement when new agreements exceeding 10 MNOK have to be established. Helicopter and chartered fixed wing transport is a global category with global implementation within the spend category area Operations and Maintenance. A category defined as global/global implies that the category is centralized with respect to both strategy and operational level. The scope of the category is illustrated by table 6.²⁸

Spend category area	Spend category	Material group description	Material group
Operations and Maintenance	Helicopter and chartered fixed wing transport	Helicopter services	3.08.03A
Operations and Maintenance	Helicopter and chartered fixed wing transport	Charter services (fixed wing)	3.08.03A
Operations and Maintenance	Helicopter and chartered fixed wing transport	Security check	3.99.05

Table 6: Scope of the Helicopter and chartered fixed wing transport category strategy²⁸.

The following list of services is the identified demand within the category Helicopter and chartered fixed wing transport at the Amundsen #1 exploration well:

- Helicopter Fuel.
- Landing Crafts.
- Helicopters.
- S-92 Helicopter or equivalent.
- Search and Rescue Helicopter (SAR).

A market screening executed in Alaska has confirmed that the required logistics assets are available in the market and that establishment of contracts is feasible in order to support the drilling commencement. However, it is identified that limited market accessibility might apply for helicopters. Assuming that a new agreement > 10 MNOK is identified, a specific procurement strategy has to be established based on the essential from the category strategy Helicopter and chartered fixed wing transport. Section 3.4.1 Specific procurement strategy

illustrated how the entire specific procurement strategy process should be performed. Category considerations are initially involved in the preparing phase as the specific procurement strategy should be aligned to the category strategy. The market in Alaska has to be investigated and optimized with respect to elements such as potential suppliers and partners and their compliance according to Statoil's Code of Conduct. Consequently, an internal survey of potential companies operating in the area has to be executed. This survey has to include a detailed market screening and should be carried out in order to get a correct picture of potential companies in the region. A category strategy has to support these objectives. A bidder list with pre – qualified suppliers has to be approved in the specific procurement strategy.

5.4.4.1 Preliminary findings

Interviews in relation to the master thesis revealed that the work in this category is organized thorough a cross functional category team represented by Air Transport Services (ATS), Procurement and Flight Safety Staff (FSS). This category team is involved in all Statoil's operations, both on the NCS and globally. The vision of the category team is specified to become "among the leaders within the Oil and Gas Industry for safe and cost effective air transport services". The total spend in 2010 was approximately 2108 MNOK, where the NCS represented for more than 90%. Helicopter operations are the main activity in the category. The strategic basis is optimization of flight safety, operational and commercial aspects through direct involvement of the category team in all Statoil's operations globally. This is a key observation in relation to this category strategy, confirmed by interviewees. A success criterion related to international exploration well projects is involvement of this unique category team in an initial project phase. However, there are some identified challenges concerning demand planning. The challenges are related to late submission of demand from internal customers, short planning horizons, short notice of changes in drilling plans and internal restrictions. In general, the category team's customers have low emphasis on helicopter logistics. Internal routines and clarification of restrictions for operations have to be improved. This is also identified and confirmed through conducted interviews. An international exploration well project should be aware of these challenges. The performed interviews revealed that one offshore rig normally requires 3 – 4 trips in operational support per week with a medium or large size helicopter. In addition, requirements related to extra helicopter trips, Search and rescue (SAR) helicopter, stand by HK and back up (replacement) solutions have to be investigated based on availability and cost. The strategy for services on the NCS is outlined in the category strategy. Some characteristics include limited availability of equipment, long lead time for new helicopters and expected changes due to the financial crisis. The two dominating helicopter suppliers CHC Helicopter Services and Bristow are stated as well as a potential new supplier. Consequently, a strategy related to increased competition, reduction of operational risk and sale of spare capacity to a third party is stated required. The category strategy for Helicopter and chartered fixed wing transport emphasizes on five main strategy areas. These are Sourcing and Procurement, Technology and operational support, Governance and internal customers, Establishment of contracts and Administration of contracts. Within the main strategy area Technology and operational support, the strategy

states that high safety and operational standard should be maintained by utilizing technology in accordance with the ALARP principle.²⁹ The ALARP principle ensures that risk and uncertainty aspects are considered. The strategy recommendations for this area are specified for the NCS. For instance, a recommendation suggests that new technology should be utilized at all bases on NCS within 2012. The Sourcing and Procurement strategy area emphasis on stimulate healthy market conditions through focus on market competition, market knowledge and market development. The strategy recommendation identifies how the competition could be improved on the NCS. In addition, some considerations in order to improve market knowledge are stated. The next main strategy area Governance and internal customers focuses on establishment of a pre – defined way of working with distinct roles and responsibilities to enhance corporate responsibility. Two strategic recommendations are described, including further development of description and clarification of roles and responsibilities and improved team interactions. The challenge concerning roles and responsibilities is also confirmed by interview of a FSS representative in relation to this thesis. The main strategy area Establishment of contracts states that effective and high quality processes should be implemented through cross – functional knowledge transfer and information sharing in order to ensure right product to the right price and time. Out of four suggested strategy recommendations, two are specified for the NCS. The last main strategy area is Administration of contracts. The emphasis is related to dynamic and optimum contract usage through improved knowledge of Statoil’s contracts and improved utilization of the contracted equipment. The strategy recommendation includes three actions in order to ensure this objective.²⁹ Given the stated emphasizes of different main strategy areas, it appears that they are generally specified and could be used as guidelines in order to establish a specific procurement strategy at the Amundsen #1 exploration well project. For instance, high safety and operational standard at the Amundsen prospect could be maintained by utilizing technology in accordance with the ALARP principle. Although the general principles could be applied at an international exploration well project, some global aspects may be missing in the strategy as many of the identified recommendations concern only the NCS. In addition, there is a lack of focus on market balance globally. As identified thru some of the interviews, a possible cooperation with other operators should be examined in relation to logistics assets at international exploration well projects. The category strategy for Helicopter and chartered fixed wing transportation does not cover this aspect. As a summary of this category strategy, several general principles are stated and apply for both the NCS and international projects. The identified category team will ensure optimization of flight safety, operational and commercial aspects through direct involvement in all international exploration well projects. Interviews confirmed that this category team holds extensive knowledge and flexibility, in addition to comprehensive global network associations. An international exploration well project should be aware of the stated challenges faced by the category team and emphasis on demand planning. However, it should be noted that some global aspects may be missing in the category strategy with reference to such as cooperation with other operators.

5.4.5 Drilling Services

A category strategy for drilling services should give guidelines at international exploration well projects related to such as demand, spend, main cost drivers and market. The category strategy should also document relevant facts, different analyses, experiences, risk and uncertainty measures and goal settings. The different elements have to be updated in order to achieve the best agreements for the company. The category strategy for drilling services is included in the spend category area Drilling and Well. Drilling services is defined as a global category with local/regional implementation. The global/local definition implies a global strategy with local/regional modifications at a strategic and operational level due to elements such as market and country specific laws and regulations. The scope of the category and an approximately distribution of spend is given in table 7:²⁸

Spend category area	Spend category	Material group description	Material group	% of total spend
Drilling and Well	Drilling Services	Measurement while drilling	3.05.08	38
Drilling and Well	Drilling Services	Directional drilling	3.04.31	28
Drilling and Well	Drilling Services	Mudlogging	3.04.07	17
Drilling and Well	Drilling Services	Managed pressure drilling	3.04.42	1
Drilling and Well	Drilling Services	Coring	3.04.11	2
Drilling and Well	Drilling Services	Directional survey	3.04.25	1
Drilling and Well	Drilling Services	Drill bits	1.01.12	5
Drilling and Well	Drilling Services	Jar and accelerators	3.04.31	4
Drilling and Well	Drilling Services	Reamers	3.04.17	3
Drilling and Well	Drilling Services	Holeopeners	3.04.31	1

Table 7: Scope of the Drilling service category strategy²⁸.

Based on spend analysis for 2008, about 83% of total spend was related to measurement while drilling (MWD), directional drilling and mud logging. The annual spend in 2008 was approximately 3 BNOK, where rental equipment and services accounted for about 75%. The remaining 25% was spent on support, other drilling equipment and personnel. Other characteristics of drilling services include technologically complex services and more use of unconventional and expensive drilling solutions.³⁰ The following list is the verified drilling service demand for the Amundsen #1 exploration well:

- Cementing services.

- Site survey and clean up.
- Mud services.
- Mud-logging services.
- Electric logging services.
- Coring services.
- MWD / LWD services.
- Directional drilling services.
- Diving / ROV.
- Fishing services.
- Other drilling services (equipment and materials):
 - Drilling bits.
 - Cement and cementing additives.
 - Mud and mud chemicals.
 - Completion fluids.

As stated in section 5.4.3 Market screening of Alaska, three major integrated service suppliers are well – established in Alaska. Consequently, the verified drilling services demand at the Amundsen #1 exploration well project, will be obtained by executing the contracts as call – offs under existing master service agreements with these major integrated service suppliers. Master service agreements are specific international frame agreements between Statoil and respectively Halliburton, Schlumberger, Baker and Weatherford.

5.4.5.1 Preliminary findings

A comparison of the category strategy drilling services according to relevant theory in Chapter 3, shows that the category strategy consists of a strategy per service related to spend, supplier market, challenges and demand. However, the strategies are detailed for the drilling service supplier market on the NCS. Statoil’s market share, estimated market distribution for drilling services and development of agreements rates from 2002 – 2009 are all presented specific for the NCS. The strategic objectives for the category strategy are stated to be:

1. Act as one Statoil.
2. Improve quality.
3. Increase efficiency.
4. Secure availability.

Several of the presented figures and analysis in the category Drilling services are not updated in the present time. This confirms the finding from conducted interviews, revealing that category strategies may not be satisfactorily updated. Main strategy areas and activities within the category strategy are separated into four groupings. These are category management, contract portfolio, new technology and HSE. As a complement to these main strategies areas and activities, some concerns regarding international projects are stated. The first concern states that the category team has to get an overview of the future international demand of drilling services. The other states that the category team has to support international procurement within drilling services based on “best practice” from the NCS.³⁰ The first concern is confirmed by some of the interviews performed in relation to this research. The interviews express that there are few well-known international guidelines in category strategies when executing an international exploration well project. And if guidelines exist, the category strategies are often not updated satisfactorily. Interviews have confirmed that more resources in Statoil should be available in order to achieve updated category strategies. The market screening of Alaska identified some local suppliers for drilling services. However, there are no identified guiding principles in the category strategy for drilling services on how these local suppliers should be considered compared to the major integrated suppliers. In general, there are no existing strategies within the strategy how Statoil should enter global markets. A strategy for possible cooperation with other operators regarding drilling services in the same region is not clarified in the category strategy, although it is a highly feasible option used at international exploration well projects. For instance, at the deep-water drilling project in Indonesia about 30 ancillary services contracts shared between Statoil and five other operators. Some of the contracts each individual company needed included met ocean, coring, OCTG and different studies. Another recommended option considered relevant for exploration well projects involve procuring a drilling rig with existing drilling service contracts. This is an option confirmed due to some of the interviews performed in the research. Several observations have been identified in relation to the examined category strategy for drilling services. The first observation is related to market intelligence and analyses. The category strategy for drilling services may not actively use and take advantage of the value potential in global markets. The drilling service supplier market is focused on the NCS and the presented information is based on spend analysis from 2008. The next observation is related to category management and strategy. The presented strategy per service is detailed on the NCS with few references to the international projects. Consequently, category management competence and strategies do not capture the value potential in global markets. Another observation concerns attention to risk and opportunities when establishing sourcing and contract strategies. There is a lack of focus on risk and management attention. As a summary of the category strategy for drilling services, several of the research observations are confirmed. The category strategy does not have many international guidelines regarding spend, market, main cost drivers, risk and uncertainty measures and opportunities. The presented figures and analysis are not updated in present time. However, a strategy per service on the NCS is comprehensively described. As Statoil is developing their international project portfolio, supply chain management strategies should have to be updated consistently in order to take advantage of the value potential in global markets.

5.4.6 Drilling mobile units and LWI

The category strategy for Drilling mobile units and LWI is included in the spend category area Drilling and Well. Drilling mobile units and LWI is defined as a global category with global implementation. A category defined as global/global implies that the category is centralized with respect to both strategy and operational level. The scope of the category is illustrated by table 8:²⁸

Spend category area	Spend category	Material group description	Material group
Drilling and Well	Drilling mobile units and LWI	Drilling semi - submer	3.04.01

Table 8: Scope of the Drilling mobile units and LWI category strategy²⁸.

Drilling mobile units and LWI include among others semisubmersibles, jack – ups and drill ships. Rig intake involves selection of a mobile offshore drilling unit for the Amundsen #1 exploration well project. D&W MODU (Mobile Offshore Drilling Units) has recommended using a jack – up for exploratory drilling of the Amundsen #1 exploration well. This is based on a conducted wide-ranging report and a similar concept selection by ConocoPhillips. The rig procurement process has as a result of the recommendation been based on the jack – up market. Rig strategy and procurement issued a request for information to nine different contractors in January 2012 according to initial market screenings. Only five of the contractors appeared to be feasible. The selected contractors were invited to several discussions of technical issues. The following results from these discussions revealed different options. Analyses have discovered significant synergies if Statoil jointly enter the market with ConocoPhillips. The investigated concept recommends two rigs from one contractor. This suggestion could provide cost savings on logistics, mobilization/demobilization, operation and operation preparations. The suggested option is supported by interviews in relation to this master thesis. Several interviewees state that large savings could be achieved if operators in the same region corporate regarding rig intake. A specific procurement strategy is established in relation to the Amundsen #1 exploration well project. The specific procurement strategy is consistent with theory presented in section 3.4.1 and includes demand verification, options, scope of work, schedule, market analyses, evaluation criteria and a bidder list. A steering committee including the key divisions as well as technical and commercial teams is established.

5.4.6.1 Preliminary findings

A category strategy for Drilling mobile units and LWI should among others give guidelines regarding market, spend, risk and uncertainty, suppliers and market power when a new agreement regarding drilling rigs has to be established in relation to an international exploration well project. The category strategy for Drilling mobile units and LWI was last updated in October 2011. The category strategy effort this autumn was focused primarily on the NCS, as this had the first priority. However, some of the initiatives that came out of the strategy process were of a global nature (e.g. the initiative around the level and composition of strategic capacity). In general, the current status related to all specific international exploration rig intake processes, a strategy is defined on a case by case basis, based on the task document received from internal clients in Statoil. The category strategy for Drilling mobile units and LWI is a comprehensive and eloquently strategy. Strategic objectives are stated as well as initiatives in order to improve the way services in scope are procured and the way the market is approached based on detailed analysis of spend, main cost drivers, demand and market. The content in the category strategy is separated into several main parts. First, a general introduction to category management is given. The main principles and definitions are briefly outlined. The next section includes a category scope overview of geographic scope, functional scope and different rig classifications. Jack – ups are included in Class J and described as a mobile platform for exploration – and production drilling in shallow waters – able to stand still on the sea floor. A fact base separated into internal analysis and market analysis is then presented. Internal market includes considerations regarding spend analysis, future demand, internal processes and cost driver analysis. In 2010 the Drilling mobile units and LWI category represented almost 12% of the total spend in Statoil.³¹ In other words, the category has a large impact on the bottom line result in Statoil and consequently it is crucial that this category is managed correctly. Detailed spend analysis, supplier analysis, agreement/invoice analysis, strategic capacity analysis, future demand analysis, interface with other categories and cost drivers analysis are well illustrated. Market analysis includes considerations related to value chain, size and growth, market trends and Porters five forces. Statoil's corporate strategy to produce above 2.5 million boe/d in 2020 is taken into account when the category strategy is defined as this sets the future direction for the company. A consequence analysis concerning risk and opportunities, critical factors and an implementation plan is as final point established. To a large extent the category strategy for Drilling mobile units and LWI is consistent with theory stated in section 3.3 and 3.4.1 concerning category management and strategy and the outlined specific procurement strategy process including the four main levels. In addition, the category strategy is consistent with theory of strategic alignment stated in section 3.1.3. It should be noted that the category strategy for Drilling mobile units and LWI also states that all other regions should be addressed during the first quarter in 2012. In other words, international guidelines in order to establish a specific procurement strategy for Drilling mobile units and LWI in relation to an international exploration well project should be considered in the nearest future. Maybe as this effort will focus on global aspects, several elements ought to be considered. Market intelligence and analyses have to be used in order to capitalize the value potential in the global markets. Interviewees have expressed that a potential cost saving could be achieved if several operators in the region enter the rig market jointly. The category strategy should consider a strategy including alternative models for collaboration. The focus on risk and opportunities should remain an important element when establishing sourcing and contract strategies in a global context. The category strategy for drilling mobile units and LWI consist of all essential aspects which should be included in a complete category strategy. As soon as other regions are included in the category strategy, the strategy could be an excellent illustration when Statoil are developing and updating other global category strategies.

5.4.7 Offshore support vessel

Offshore support vessels is a category within the spend category area Operation and Maintenance. It is defined as a global strategy with local implementation. The global/local definition denotes a global strategy with local and regional modifications at a strategic and operational level due to elements such as market and country specific laws and regulations. The scope of the category is illustrated by table 9:²⁸

Spend category area	Spend category	Material group description	Material group
Operation and Maintenance	Offshore support vessels	General supply vessels	3.08.17 A
Operation and Maintenance	Offshore support vessels	Marine technology en	3.01.14
Operation and Maintenance	Offshore support vessels	Tugs	3.08.01 A
Operation and Maintenance	Offshore support vessels	Barges services	3.08.02
Operation and Maintenance	Offshore support vessels	Salvage services etc.	3.08.07
Operation and Maintenance	Offshore support vessels	Brokers	3.08.11
Operation and Maintenance	Offshore support vessels	Ship chandler services	3.08.13
Operation and Maintenance	Offshore support vessels	Stand – by vessels	3.08.18

Table 9: Scope of the Offshore support vessels category strategy²⁸.

Logistics contracts relevant for the Amundsen #1 exploration well have to be sourced from the market. This includes contracts for all support vessels including anchor handling support tug (AHTS), oil spill response and emergency preparedness vessels, ice management vessels, supply vessels, warehouse vessels and barges. A conducted market screening of the required logistics assets supports availability in the market and it is assumed that establishment of contracts is feasible in order to support the drilling operation in 2014. However, limited market availability is identified regarding some types of vessels. Limited market availability applies in particular for warehouse – and ice management vessels. Early contractual commitment is an identified mitigating action and should be required in order to ensure sufficient resources for the entire drilling operation. In order to reduce market exposure and cost impact related to sourcing and marine logistics operation cooperation with other

operators is considered essential. Some types of vessel may need varying degree of customization to account for winterization in Alaskan waters. Those vessels need to be contracted earlier than a normal operation in order to be finalized according to project schedule. The following list is the identified demand in relation to the Amundsen #1 exploration well project:

- Vessel/Boat leasing.
- Ware Vessel (WV).
- Offshore Supply Vessel (OSV).
- Ice Management Vessels (IB).
- Anchor Handling Support Tug (AHTS).
- Assist Tug during rig mob/demob.
- Marine Surveyor.
- Spill Response Boat (SRB).
- Boom boats.
- Tug.
- Offshore Spill Response Vessel (OSRV).
- Boom Work Boats (WB).
- Oil Spill Storage Tanker (OST).
- Vessel Fuel.
- Fuel, Luboil.
- Fuel Supply Tanker.
- Offshore Spill Response Barge (OSRB).
- Mini Barges.

5.4.7.1 Preliminary findings

Interviews in relation to this master thesis revealed that a normal operation for one rig requires two vessels. The vessels have to be approved for standby duty. Normal requirements of operational support for one offshore rig are three trips per week. Alaskan requirements associated with oil spill response will strongly affect requirements and specifications for stand-by vessels / supply vessels. In relation to the establishment of a vessel contract some facts about the “Coastwise Trade Act”, also known as the “Jones Act”, should be pointed out. This act’s objective is preventing transportation of people or goods between US ports on foreign built vessels. The law applies to ships, tugs and barges. Jack – ups and anchored drilling ships, on OCS, are considered as ports. Currently “Jones Act” does not apply to icebreakers that are only managing ice. Waivers from this law are unusual. Establishment of a vessel contract consists of three fundamental activities:

- Dimension vessel activities according to project requirements.

- Make sure that the vessel operation is according to current rules, regulations and internal requirements.
- Start security and emergency preparedness measures with increasing threat levels according to current governing documentation.

The category strategy for offshore support vessels was not accessible in relation to this master thesis. Consequently, my preliminary findings are restricted to the conducted interviews and acknowledged information, due to participation in the Amundsen #1 exploration well project.

5.4.8 Supply base, transport and waste disposal

Supply base, transport and waste disposal is a category within the spend category area Operation and Maintenance. It is presently a local strategy with local implementation. This implies that strategy establishment is “voluntary” and more related to a local basis due to few synergies in a global setting. The scope of the category is showed by table 10:²⁸

Spend category area	Spend category	Material group description	Material group
Operation and Maintenance	Supply base, transport and waste disposal	Biological sludge treatment	3.05.25
Operation and Maintenance	Supply base, transport and waste disposal	Waste water treatment services	3.01.10
Operation and Maintenance	Supply base, transport and waste disposal	Other waste disposals	1.17.98
Operation and Maintenance	Supply base, transport and waste disposal	Asbestos removal equipment and accessories	1.17.05
Operation and Maintenance	Supply base, transport and waste disposal	Noise abatement equipment and accessories	1.17.04
Operation and Maintenance	Supply base, transport and waste disposal	Waste gas treatment	1.17.03
Operation and Maintenance	Supply base, transport and waste disposal	Water waste disposal	1.17.01
Operation and Maintenance	Supply base, transport and waste disposal	Disposal / distribution and waste transport services etc.	3.08.06
Operation and Maintenance	Supply base, transport and waste disposal	Waste disposals / drainage services	3.05.04
Operation and Maintenance	Supply base, transport and waste disposal	Trucks and associated equipment	2.05.01

Operation and Maintenance	Supply base, transport and waste disposal	Tank bottom sludge treatment	3.05.26
Operation and Maintenance	Supply base, transport and waste disposal	Rental of containers, baskets etc.	3.08.05
Operation and Maintenance	Supply base, transport and waste disposal	Freight forward / logistics management services	3.08.10
Operation and Maintenance	Supply base, transport and waste disposal	Supply	3.08.12
Operation and Maintenance	Supply base, transport and waste disposal	Truck package / Product transportation services	3.08.15
Operation and Maintenance	Supply base, transport and waste disposal	Other transportation / supply, and disposal services	3.08.99
Operation and Maintenance	Supply base, transport and waste disposal	Packing, crating and boxing materials	2.99.02

Table 10: Scope of the Supply base, transport and waste disposal category strategy²⁸.

International exploration well projects frequently require services related to supply base, transport and waste disposal. The required services could for instance consist of transportation, warehousing, harbor services, customs clearances, inspection services and waste management. However, due to large infrastructure challenges in Alaska a logistic solution for support of equipment involve the use of a warehouse vessel. Because there are no base facilities in Alaska, the strategy for Supply base, transport and waste disposal is not included in the case study of an overall strategy for procurement at the Amundsen #1 exploration well project. However, if base facilities were available in Alaska, the requirements for the project could include the following services:

- Special Waste Disposal.
- Supply base/Warehouse/Storage.
- Shore base.

5.4.8.1 Preliminary findings

The conducted interviews in relation to this master thesis state that a supply base contract has to confirm that valid Statoil requirements are encountered. It should also ensure that supply base operations are carried out according to existing rules, regulations and internal requirements. The following services were recommended to be covered by a supply base contract:

- A handling area to deliver equipment.
- Offices and office equipment.

- An outside storage area for OCTG. 5000m² is estimated to meet normal requirements related to one offshore rig.
- Bulk facilities in order to handle cement, bentonite, barite, fuel, water and brine.
- Warehouse facilities.
- Baskets, containers, tote tanks, skips and other related equipment.
- Special waste disposal.
- Quay with at least 7,5 m water depth, good foundations in the handling areas and an ISPS approved terminal.
- Workshop for pipe repair, welding and other related services.

If a supply base contract had to be established in Alaska, an initially market screening should be carried out in order to achieve a correct overview of potential contractors, facilities and capacity in the region. The preferred contractor should furthermore provide required cranes for handling of equipment, forklifts and skilled certified workers. The contractor would have to meet Statoil's requirements related to safety and security for personnel and required area. This generally implies a good record concerning HSEQ (Health, Safety, Environment and Quality). The use of existing infrastructure and sharing of facilities with other companies operating in the same region should be taken into consideration. A new agreement > 10 MNOK should be consistent with the specific procurement strategy process outlined in section 3.4.1.

5.4.9 Surface equipment

Surface equipment is a category within the spend category area Drilling and Well. The services and goods included in the category are listed in table 11.²⁸

Spend category area	Spend category	Material group description	Material group
Drilling and Well	Surface equipment	Pipe handling / Lift equipment	1.01.17
Drilling and Well	Surface equipment	Wellhead Services	3.04.23
Drilling and Well	Surface equipment	Well equipment	1.01.09
Drilling and Well	Surface equipment	Casing Cutting	3.04.06
Drilling and Well	Surface equipment	Casing Services	3.04.05

Table 11: Scope of the Surface equipment category strategy²⁸.

The category strategy for surface equipment is currently a local strategy with local implementation. This implies that strategy establishment is “voluntary” and more related to a local basis due to few synergies in a global context. An example could illustrate this. Consider office furniture, the market is local and there are few benefits related to a global agreement due to market, delivery, costs etc. A strategy is then locally correlated and implemented. The required demand for the Amundsen #1 exploration well project include:

- Casing services.
- Drill – Quip (DQ) SS-15 Big Bore II Wellheads.
- Pre-positioned Capping Device (PSD).

The Amundsen #1 exploration well project will source wellheads and related services and products under existing frame agreements according to category management standard sizes and quality. The identified lead time for Pre – positioned Capping Device (PCD) is estimated to be 18 – 20 months after ordering. Estimated lead time for Big Bore II Wellheads is 14 months.

5.4.9.1 Preliminary findings

The category strategy presentation for surface equipment is very detailed and extensive. In general, the category is separated into three main activities. These are surface wellheads and X – mas trees, casing running services and exploration wellheads. The category strategy was last updated in January 2010. Interviews revealed that some category strategies have to be updated satisfactorily. This category strategy confirms this statement. Compared to theory presented in Chapter 3, several strategic directions are included in the category strategy for surface equipment. For instance, a fact database updated in September 2009 including an overview of total spend from 2007 – 2009, spend based on Achilles codes from 2007 – 2009, largest contributors to spend on surface equipment Achilles codes and largest suppliers where there is no link to agreements is consistent with theory in chapter 3. In addition, international spend based on contracts from 2007 – 06. 2009 is presented. Also market, future demand, facts and figures, HSEQ, future technology and contract portfolio is detailed for each of the three main groups.³² This is consistent with theory of category management and strategy. For each of the three main activities short and long term sum-ups are listed. The long – term perspective of strategies described in section 3.1 is thus preserved. Casing running services concerns technology development. Hence, technology is considered in the category strategy based on respectively challenges, alternatives, recommendation, implementation and expected outcome. Surface wellhead and X – mas trees are considered based on market and personnel, standardization, maintenance, own or lease, storage routines and way forward. Each of the elements is investigated related to challenges, recommendations, implementation and expected outcome. Subsea exploration wellheads, as listed required at the Amundsen #1 exploration well project, are considered through an overall strategy and related details. The overall strategy is stated based on challenges, recommendations, implementation and expected outcome. The elements considered are general competition, suppliers, market, market power balance, responsible, timing, commercial assessments and alternatives. This corresponds well to presented theory of supply chain management strategies. Most of the category strategy is related to the NCS. Only a few concerns regarding the international market are stated. For instance, a recommendation specifies that Statoil should look to the

international market for other possible suppliers of wellheads and X – mas trees.³² An important aspect is included in this statement. Statoil should as a global company takes advantage of the value potential in global markets. As a summary of the category strategy for surface equipment, it should be emphasized that several strategic directions are thoroughly described and examined. However, most of them concern the NCS. International guidelines are only to some extent included and consequently global aspects are missing in the strategy. Another observation is related to risk and uncertainty measures. There is a lack of risk and opportunity concerns. Risk management should be a way of thinking throughout the entire SCM value chain process. The strategy was last updated in January 2010, thus a new update is probably required. To some extent this category strategy is consistent with theory stated in chapter 3, however several important aspects should have been included. For instance, strategic alignment with corporate and other category strategies is not considered.

5.4.10 OCTG and related equipment and services

OCTG and related equipment and services is a global category with global implementation within the category spend area Projects. A category stated as global/global implies that the category is centralized with respect to both strategy and operational level. The scope of the category is illustrated by table 12.²⁸

Spend category area	Spend category	Material group description	Material group
Projects	OCTG and related equipment and services	Drill pipe rental	3.04.28
Projects	OCTG and related equipment and services	Casing / Casing equipment	1.01.04
Projects	OCTG and related equipment and services	OCTG services	3.04.40
Projects	OCTG and related equipment and services	Recutting inspection	3.04.27
Projects	OCTG and related equipment and services	Conductor Piling	3.04.03

Table 12: Scope of the OCTG and related equipment and services category strategy²⁸.

Both OCTG and wellheads are long lead items. The required services within OCTG and related equipment and services in relation to the Amundsen #1 exploration well project are:

- High Pressure (HP) Riser.
- Casing (OCTG) / casing equipment.

The Amundsen #1 exploration well project will source casing under existing frame agreements. This will be done in accordance with category management standard sizes and quality. Current estimated lead time for High Pressure (HP) Riser is 11 – 12 months. The estimated lead time for casing is 9 – 10 months. A potential supplier of casing is Sumitomo. This is considered achievable for a drilling operation in 2014.

5.4.10.1 Preliminary findings

The category strategy for OCTG and related equipment and services was last updated in December 2011. About 80 – 90 wells are supported with OCTG and related equipment and services each year, where the majority of deliveries are on the NCS. The framework in relation to international exploration well projects and the main principles Statoil utilize in order to procure OCTG and related equipment and services are briefly outlined. Estimated lead time for OCTG from suppliers is currently 9 – 10 months, and consequently Statoil has to order OCTG about a year in advance as several operations want to have the equipment delivered 2 months prior to commencement. Statoil has three main agreements related to delivery of OCTG. These are:³³

- GE Vetco Gray – Conductors in dimensions 26” – 36”.
- Tenaris – OCTG in dimensions 18” – 24”.
- Sumitomo Corporation – OCTG in dimensions 2 3/8” – 16”.

All the three agreements include clauses of international validity. Consequently, they are applicable at international exploration well projects such as the Amundsen #1 exploration well project. The basic strategy in relation to OCTG and related equipment and services at international exploration well projects is either to source the required demand under existing frame agreements or transfer OCTG from storage in Florø to the international exploration well project. The reasons for this basic strategy are related to:

- Favorable commercial terms in relation to main suppliers.
- Conditions of Contract (CoC) are established – negotiation of new set of CoC may take long time.
- Technical specifications have been negotiated and established – negotiation of a new set of technical specifications may take long time.
- The suppliers are qualified to deliver OCTG to Statoil operations – qualification of new suppliers may take several months.
- The organization in Statoil working with OCTG both in relation to technical and commercial terms has restricted human resources.

The category strategy for OCTG and related equipment and services is specified as an overall sourcing strategy for OCTG, line pipe, anodes and coating. The introduction in the category strategy states that the purpose of the document is to form and suggest a sourcing strategy in order to secure Statoil’s future demand. The category strategy includes both projects and licenses on the NCS and international where Statoil is operators or has participation interest. The services and equipment in this category is covered by the steel segment. The total segment has an estimated annual spend of about 1.5 billion NOK. The overall objective is specified to secure availability at a competitive price level.³³ According to theory stated in

chapter 3, the suggested sourcing strategy, improvement potentials and savings are based on findings from fact bases, involvement from stakeholders and external suppliers. The fact bases include extensive information related to the current market situation, historic spend, strategic considerations (market power balance) and price level development. A comprehensive list of potential suppliers is conducted by an external consultancy company based on a market survey of the worldwide supplier market. Due to the high activity level and limited availability of pipes, suppliers prioritize customers with long term frame agreements. Consequently, the overall objectives are specified to secure an optimal availability and competition within each category's products and qualities and minimize total cost for project execution and operations. The overall sourcing strategy for OCTG, line pipe, anodes and coating includes recommended contract strategy for each of the services and equipment, expected outcome of the recommendation, and options.³³ The category strategy presented for OCTG and related equipment and services includes several important elements related to category management and strategy. Although the recommended sourcing strategy is based on fact bases, there are few references to figures and analysis in the category strategy. There is a lack of risk and uncertainty measures, although these aspects are probably considered when forming the sourcing strategy. In general, it is necessary to act proactive in cooperation with and inform customers on risk, options and solutions. As stated initially, there are some concerns related to international projects in the category strategy. These may be considered as guidelines or practices. The demand that international projects will be negotiated by options in the awarded frame agreement due to special rules and regulations and demand for local content in different international areas. Consequently, options will be tailor made for each specific project. Some further guidelines how this should be done are not stated in the category strategy.

6. Discussion

Chapter 6 presents a discussion of the results in relation to this master thesis. A discussion of characteristics and challenges related to an overall strategy for procurement at an international exploration well project is presented in section 6.1. The discussion includes considerations of study objectives with related research questions. The findings from the utilized case study of the Amundsen #1 exploration well project are discussed in section 6.2. The preliminary findings identified some important gaps with respect to what's implemented in Statoil related to category strategies. Three identified key gaps are considered in section 6.2.1 – 6.2.3.

6.1 Characteristics and challenges

Section 1.1 Study objectives introduced the main objectives of this master thesis. The main objective is specified to examine characteristics and challenges in relation to the establishment of an overall strategy for procurement at an international exploration well project. When an overall strategy for procurement at an international exploration well is required to be established, three supply chain management strategies stated in Statoil's management system have to be taken into consideration. These are the outlined category strategy, project strategy and specific procurement strategy. Statoil utilizes a category management approach in order to manage future demand. Consequently, category strategies form the basis for project – and specific procurement strategies. According to theory stated in section 3.1, supply chain management strategies have to be aligned with corporate and business strategies. The corporate strategy in Statoil has set a growth target of achieving 2.5 mmboe per day by 2020. International expansion is considered as a main contributor in order to achieve this objective. Thus, category strategies, project strategies and specific procurement strategies have to be aligned with the corporate strategy and international growth. An identified challenge is related to update category strategies satisfactorily according to global aspects. Market intelligence and analyses have to be actively used in order to take advantage of the value potential in the global markets. With the purpose to update category strategies, it is necessary to have sufficient resources available. This is another challenge confirmed by several of the interviewees. Not updated category strategies might cause category strategies not capturing the global value potential. Only global/global and global/local categories are required to have strategies in Statoil. As the relevant category strategies at the Amundsen #1 exploration well project were evaluated, information revealed that about 60% of all category strategies in Statoil required to have strategies was valid. A detailed overview of the category strategies confirmed that only 50% of all category strategies including local/local had been updated during the last year. Two of the category strategies had not been updated since 2006 and many local/local did not have established strategies. Some of the evaluated category strategies in relation to the Amundsen #1 exploration well project turned out to not be updated during the last year, confirming the statistic. Not reasonably updated category strategies may cause supply chain management strategies inconsistent with the stated corporate strategy in Statoil. A challenge related to misaligned category strategies occurs. The potential outcome is resource allocation and activities not consistent with the

corporate strategy. The overall strategy for procurement at an international exploration well project has to include a strategy per required goods or service. In general, the required goods and services related to an international exploration well project are different types of offshore support vessels (warehouse vessels, supply vessel, barges etc.), supply base, transportation and waste disposal, surface equipment (such as wellheads), OCTG and related equipment and services (e.g. casing), helicopter and chartered fixed wing transport, drilling services and a drilling mobile unit. In Statoil agreements above 10 MNOK have to establish a specific procurement strategy based on the relevant category strategy. A challenge connected to the not updated category strategies is then improper guidelines related to market, risk and uncertainty, spend, demand and main cost drivers in relation to the required goods and services. For instance, spend data that are incorrect may be reported and used as basis for decisions. Unquestionably, Statoil's key objective to develop, integrate and implement sourcing strategies in order to achieve the best agreements for the company is to some extent obstructed by category strategies not being up to date. If the category strategies were updated much work in relation to the establishment of a specific procurement strategy could be avoided, resulting in improved value to the company. This is consistent with the purpose of category management to deliver improved value to the organization. With several category strategies not up to date the potential of efficient category management could be considerably reduced.

In general, a market screening has to be performed in relation to an overall strategy for procurement at an international exploration well. The purpose of the market screening performed in relation to the Amundsen #1 exploration well is to give a complete overview of the current market situation in Alaska. The market screening should provide an overview of potential suppliers for all of the required goods and services and their current workforce. A way of gathering supplier information data is to use a request for information (RFI). This is revealed by interviewees, who stated that a RFI includes a questionnaire sent to several suppliers asking for information to be provided, normally in response to a sequence of tailor-made questions.¹³ Statoil should put emphasis on research of the market and potential new markets. Category management is about open up breakthrough opportunities in order to create improved value to the organization. Consequently, a market research in relation to a specific category should evaluate alternative markets in order to consider achieving the required demand in a different improved way. The market screening should also identify other operators in the same region. A potential cooperation with other operators could create value for the organization in terms of cost savings. This will be further discussed in the identified Gap 2 in section 6.2.2.

An overall strategy for procurement at an international exploration well has to include defined objectives. Three procurement objectives were specified in relation to the Amundsen #1 exploration well project. The first objective is related to focus on Health, Safety, Environment and Quality (HSEQ). Statoil is aware of potential consequences related to their operations. This is captured by the overall strategy for procurement, stating that potential suppliers have to validate sufficiently HSEQ standards. Statoil should emphasize on mitigating actions in all projects phases, not only during the operation. Several of the interviewees revealed that an

experienced well – established supplier is preferred in relation to an international exploration well project in a frontier area. Then, a mitigating action could be a pre – qualification process searching for a supplier with former involvement in the same area. Expectantly, this should reduce risk and add value to the organization. A potential accident in relation to an international exploration well could have huge environmental and economic impact in addition to consequences for Statoil’s reputation. An international exploration well in a vulnerable frontier area like Alaska is of great interest to other stakeholders, keeping their eye on what’s done regarding all HSEQ aspects. The next objective concerns ethical aspects, specifically the outlined IDD and CSR process and Anti-trust laws. The main finding from interviews related to culture states that Statoil should understand, respect and interact with the culture where Statoil operates. It is very important to interact and cooperate with the representative society where Statoil’s international exploration wells are located. Relations between Statoil and representative societies can be established through local commitment. An example is engagement of local recruitment. Statoil should be humble in order to learn and meet new cultures. The ways things are done in a specific nation are based on extensively knowledge and practice. As CSR includes local recruitment, local procurement and local actions to promote social and economic benefits of oil and gas activities in countries where Statoil operate, CSR could be an element to consider in relation to category strategies. The last element within overall strategy objectives for procurement at the Amundsen #1 exploration well project concerns project goals. The project goals have to be accomplished cost effectively and within schedule. The mitigating actions include early identification of long lead items, contract with well – known suppliers, adequately back – up plans and ensuring that deliveries are on time. Several interviews have confirmed that Statoil should not create new supplier networks in relation to an international exploration well project in a frontier area. The emphasis should be on suppliers with former experiences and knowledge of the frontier area, established organization and a fixed logistics system. This statement has been the same whether it concerns logistics contracts such as helicopters, or it concerns for instance drilling services. A brief example could illustrate this point of view. A supplier of helicopter services in a specific country needs an approval to fly in the area, which is not obvious that all suppliers possess. The supplier has to hold experience from the location Statoil is going to operate and experience with the selected type of helicopter. Only technical feasible suppliers will get an opportunity to make a bid. A fixed logistics system may reduce the risk of deliveries not on time. Procurement objectives are a part of the strategy establishment process, and the specified overall strategy for procurement objectives should be aligned with the objectives stated in category strategies. Another characteristic related to an overall strategy for procurement is the considered procurement challenges in relation to the Amundsen #1 exploration well project. Potential challenges have to be identified and evaluated carefully. An opportunity should be to use category strategies in order to form feasible solutions to the stated challenges. For example, a category strategy related to offshore support vessels should have some strategies related to “small” Statoil scopes with reference to length of contracts. Maybe a potential solution could be to share some type of vessels with other operators in the same area. The utilized case study of the Amundsen #1 exploration well project confirmed that category management and strategies are currently not fully efficient

implemented in Statoil. The next section 6.2 discusses three identified gaps based on the utilized case study.

6.2 Discussion of the utilized case study

The preliminary findings in relation to the utilized case study identified some gaps with respect to what's implemented in Statoil related to category strategies. The three identified key gaps are considered in section 6.2.1 – 6.2.3 and include international guidelines, cooperation with other operators and internal processes. Initially, it should be specified that out of all the investigated category strategies in relation to this master thesis, the category strategy for Drilling mobile units and LWI is the only one where the concept of category management and strategy is considered in the presented strategy. Based on the preliminary findings, this category strategy includes all essential aspects in a complete category strategy. Accordingly, it could be a link between the consideration of category management and strategy in the presented strategy and this observation.

6.2.1 Gap 1: International guidelines

Several interviews in relation to this master thesis have revealed that category strategies do not satisfactorily include global aspects. The interviews state that Statoil's main activities are on the NCS and category strategies are still customized accordingly. However, Statoil has high ambitions for international growth and the upstream strategy for exploration is to develop a leading global exploration company. As discussed formerly in this thesis, category strategies must to be aligned with this objective. Category strategies have to state guidelines at international exploration well projects with respect to demand, spend, main cost drivers and market. They should also document relevant facts, different analyses, experiences, risk and uncertainty measures and goal settings. The importance of updated category strategies in order to achieve the best agreements for the company is discussed in section 6.1. The preliminary findings in relation to the utilized case study of the Amundsen #1 exploration well project confirm that there is an overall lack of international guidelines in category strategies. Three of the evaluated categories have global strategies with global implementation. Based on the preliminary findings, these category strategies include international guidelines only to some extent. For instance, the category strategy for Helicopter and chartered fixed wing transport states that the strategic basis is optimization of flight safety, operational and commercial aspects through direct involvement of the category team in all Statoil's operations globally. Although, several of the general principles stated in this category can be applied at an international exploration well project, some global aspects are missing in the strategy as many of the identified recommendations concern only the NCS. This observation applies generally for two of the evaluated global/global category strategies. The exception is the category strategy Drilling mobile units and LWI where all essential features of a category strategy are included. Nevertheless, the strategy has to be updated with international areas, not only the NCS. Drilling services is the only evaluated category which is global with local implementation. As stated in the preliminary findings this strategy is

specified for the NCS, and do not provide any guidelines in relation to an international exploration well project. This generally applies for the evaluated category strategy for surface equipment as well. Surface equipment is a category with local/regional strategy and local/regional implementation. As several of the required goods and services in relation to an international exploration well might have to be sourced from the market, category strategies have to implement actions in order to prevent Gap 1: International guidelines.

6.2.2 Gap 2: Cooperation with other operators

At the deep-water drilling project in Indonesia about 30 ancillary services contracts were shared between Statoil and five other operators. The only contracts each of the individual company needed to establish included met ocean, coring, OCTG and different studies. The information is revealed by interview and illustrates a potential tactic to achieve improved value to Statoil. Table 5 in section 5.4.3 Market screening of Alaska includes some statements of potential cooperation with other operators. Cooperation is of interest to Statoil with respect to both technical and procurement. The potential value creation with respect to procurement is related to cost savings. In addition, cooperation is considered essential in order to reduce market exposure and cost impact in relation to sourcing and marine logistics operations. As cooperation with other operators could create significant value for the organization, potential cooperation with other operators should be an element included in category strategies. Although the utilized case study of the Amundsen #1 exploration well project revealed that a possible cooperation with other operators should be examined in relation to logistics assets, the preliminary findings related to the evaluation of the category strategy for Helicopter and chartered fixed wing transportation discovered that the strategy does not cover this element. In general, this finding is valid for all of the investigated category strategies. Cooperation in relation to drilling services at an international exploration well project is a highly feasible option utilized several times. In addition to Indonesia, cooperation is utilized in among others Tanzania. The procurement strategy for the Zafarani exploration well in Tanzania included a rig share agreement with Petrobras, including the company's service contracts. The synergies for both companies were reduced tendering processing costs, increased volume of work resulted in more competitive bids and reduced mobilization/demobilization costs. A warmed up rig reduces risk due to the fact that personnel will have necessary job training, equipment have been run and tested, transfer of experience between operators and benefits related to improved operational efficiency. Based on this value creation for Statoil, cooperation with other operators should be a part of the category strategy for drilling mobile units and LWI.

6.2.3 Gap 3: Internal processes

The last identified key gap includes internal processes in Statoil. The category management approach is about changing sourcing in a radical way or a way that provides radical improvements. This could include such as changing internal processes in order to achieve value creation for the organization. According to preliminary findings and interviews related to the category helicopter and chartered fixed wing transport, the strategy has identified some

challenges concerning demand planning. A success criterion with respect to international exploration well projects is involvement of the established category team in all Statoil's operations globally. The challenges are related to late submission of demand from internal customers, short planning horizons, short notice of changes in drilling plans and internal restrictions. The category team's customers have too low focus on helicopter logistics, which makes the internal process ineffective. Consequently, the internal routines and clarification of restrictions for operations in Statoil have to be improved. Mitigating actions have to be implemented in order to meet these challenges and create value to the organization. In general, Statoil should emphasize on optimized internal processes in order to fully utilize the category management approach.

7. Conclusions and Recommendations

Several characteristics and challenges related to an overall strategy for procurement at an international exploration well project are identified and investigated in relation to this master thesis. In general, an overall strategy for procurement requires a strategy per goods and services. Statoil's framework in order to manage future demand is basic category management. As categories are assembled in concrete groups, strategic actions can be identified within each category. Strategic actions or category strategies within several categories in Statoil are examined extensively in this master thesis. Based on the evaluations from the utilized case study in chapter 5 and the discussion in chapter 6, the following conclusions can be specified:

- An overall strategy for procurement at an international exploration well project has to specify concrete procurement objectives and identify potential challenges.
 - The procurement objectives have to include requirements of suppliers related to HSEQ standards and ethical elements. Project goals should be achieved cost effectively and within schedule.
 - Well – known suppliers with experience from the area where Statoil operates are preferred in order to achieve project goals and meet identified challenges.
 - An undervalued aspect revealed through the thesis concern culture. Statoil should understand, respect and interact with the culture where they operate.
- A market screening has to be carried out in relation to an overall strategy for procurement. The market screening should obtain a complete overview of the current market situation. It should identify potential suppliers for all of the required goods and services and their current workforce. In addition, potential operators should be identified in order to investigate the opportunity for cooperation.
- Category management is a reasonable approach in order to maximize business profitability. However, the purpose of category management is not completely realized in Statoil due to several remarkable findings:
 - Several of the category strategies in Statoil are not updated satisfactorily. This could result in misaligned strategies and corresponding resource allocation and activities not consistent with the corporate strategy. Strategic decisions could be taken on a wrong basis.
 - There is a general lack of international guidelines in category strategies. The lack of global aspects could result in category strategies not actively in use and which don't take advantage of the value potential in global markets.
 - Although several international exploration well projects are executed in cooperation with other operators, there are no such elements included in category strategies.

- Inefficient internal processes in Statoil could reduce the potential of category management.
- There is a lack of focus on risk and opportunities in some of the evaluated category strategies.

In order to optimize an overall strategy for procurement at an international exploration well project, Statoil has to improve the established category management approach. Based on the stated conclusions in relation to this master thesis, following recommendations could be applied:

- Statoil has to allocate resources in order to update category strategies satisfactorily. The category strategies should be updated according to new measures and activities. International guidelines and cooperation with other operators are elements which should have been included.
- Risk management is an important part of category strategies and should be a way of thinking throughout the entire SCM process. Category strategies have to be updated with risk and uncertainty measures.
- Statoil should emphasis on using well – known suppliers in frontier areas.
- Statoil has to understand the culture where they operate in relation to international exploration well projects.
- Internal processes in Statoil have to be improved in order to realize the potential of category management.

8. References

1. Statoil official website [online] Accessible:
<http://www.statoil.com/en/OurOperations/ExplorationProd/internationalFields/Pages/default.aspx>
[Download: May 2012]
2. Statoil intranet [online]. Accessible: <http://entry.statoil.no/Organisation/Units/64915/Pages/default.aspx>
[Download: May 2012]
3. Statoil intranet [online]. Accessible:
<http://entry.statoil.no/newsandmedia/corporatestrategy/strategies/upstream/exploration/pages/exploration.aspx>
[Download: February 2012]
4. Statoil intranet [online]. Functional – requirement (FR) 05 “Project development”. Accessible:
<http://docmap.statoil.no/DocMap/page/doc/dmDocIndex.html?DOCID=1014829?DOCVIEW=FALSE>
[Download: February 2012]
5. Cousins P., Lamming R., Lawson B. and Squire B (2008). *STRATEGIC SUPPLY MANAGEMENT, Principles, Theories and Practice*. FT Prentice Hall
6. Saunders, Malcolm (1997). *STRATEGIC PURCHASING AND SUPPLY CHAIN MANAGEMENT SECOND EDITION*. PITMAN PUBLISHING.
7. Statoil official website [online] Accessible:
<http://www.statoil.com/no/technologyinnovation/technologymangement/pages/teknologistrategi.aspx>
[Download: March 2012]
8. Bruvold, Tone (2011). Presentation: «Kontraktsetablering og gjennomføring». Accessible: Course MIN120 Contracts – Design and Management at the University of Stavanger.
9. Lambert, Douglas M., Cooper, Martha C. and Pagh. Janus D (1998). *Supply Chain Management: Implementation Issues and Research Opportunities*. International Journal of Logistics Management. Volume 9, Number 2. ABI/INFORM Global.
10. Harrison, A. and van Hoek, R. (2005) *Logistics Management and Strategy*, Second edition, Essex, England: Prentice Hall
11. Statoil intranet [online]. Functional – requirement (FR) 09 “Supply Chain Management”. Accessible:
http://docmap.statoil.no/DocMap/view/DOCKEYID=520955#_Toc271094706
[Download: March 2012]
12. Statoil intranet [online]. Accessible:
<http://entry.statoil.no/howwework/supportproc/pandscm/aboutsupplychainmanagement/scmprocess>
[Download: March 2012].
13. O’Brien, Jonathan (2009). *CATEGORY MANAGEMENT IN PURCHASING A strategic approach to maximize business profitability*. KOGAN PAGE. London and Philadelphia.
14. Internet [online]. Accessible: <http://ezinearticles.com/Procurement-Strategy---10-Reasons-Why-You-Should-Use-Category-Management&id=3813527> [Download: March 2012]
15. Statoil intranet [online]: Accessible:
<http://entry.statoil.no/howwework/supportproc/pandscm/categorymanagement>
[Download: March 2012]

16. Statoil intranet [online]. Accessible: <http://bpm.statoil.no/> [Download: February 2012]
17. Riggs, David A. and Robbins Sharon L. (1998). *THE EXECUTIVE'S GUIDE TO SUPPLY CHAIN MANAGEMENT STRATEGIES, BUILDING SUPPLY CHAIN THINKING INTO ALL BUSINESS PROCESSES*. AMACON American Management Association.
18. Silverman, David (2000). *Doing Qualitative Research. A Practical Handbook*. SAGE Publications.
19. Ellram, Lisa M. (1996). The use of the case study method in logistics research. *Journal of Business Logistics*, 17,2: ABI/INFORM Global
20. Yin, Robert K. (2009). *Case Study Research Design and Methods*, Fourth edition. Volume 5. SAGE inc.
21. Kvale, Steinar (1996). *Interviews An Introduction to Qualitative Research Interviewing*. SAGE Publications.
22. Raaen, Monica (2012). Presentation: « *Approval Overall Strategy for Procurement: Amundsen exploration well – Alaska (Chukchi Sea) 2014*. [Presented in relation to approval in Statoil].
23. Statoil intranet [online document]. Accessible: <http://sp-st13.statoil.com/sites/732fe428-601d-4486-bc25-6d3f71f01211/Document%20library/Assignment%20document%20Alaska%20Chukchi%20Sea.doc> [Download: April 2012]
24. Statoil intranet [online]. Functional – requirement (FR) 01”Exploration”. Accessible: <http://docmap.statoil.no/DocMap/page/doc/dmDocIndex.html?DOCID=1014829?DOCVIEW=FALSE> [Download: March 2012]
25. Statoil intranet [online]. Functional – requirement (FR) 03 ”Drilling and Well Technology”. Accessible: <http://docmap.statoil.no/DocMap/page/doc/dmDocIndex.html?DOCID=1014829?DOCVIEW=FALSE> [Download: March 2012]
26. Statoil intranet [online]. Work – requirements (WR) 2988: “ Integrity Due Diligence” Accessible: <http://docmap.statoil.no/DocMap/page/doc/dmDocIndex.html?DOCID=1010888> [Download: May 2012]
27. Statoil intranet [online]. Accessible: http://entry.statoil.no/HowWeWork/ProcintheValueChain/PD/BusinessSupportProjectsNetwork/BPW/knowledge_areas/csresponsibility/Pages/Corporate_social_responsibility.aspx#5 [Download: May 2012]
28. Statoil intranet [online]. Accessible: http://sp-st08.statoil.com/sites/cf67b585-d7cd-41fb-9d32-23957aa77cbf/future%20demand/Document%20library/CategoryStructure_P03_Extended_Master%20document.xls [Download: May 2012]
29. Sæbø, Toyni Cecilie (Category responsible): Presentation: « *Category strategy – Helicopter and fixed wing 2009 – 2012* »
30. Særsten, Trond. (Category responsible): Presentation: « *Category strategy – drilling services* »
31. Meulepas, Erik (Category responsible): Presentation: « *Drilling mobile units and LWI – Category strategy NCS 2011* »
32. Skorpen, Stein Erik (Category responsible): Presentation: « *Surface equipment – SURF Strategy update 2010 – ver. 2* »
33. Stokka, Jostein Clement (Category responsible): Presentation: « *OCTG and Line pipe and related equipment and services – Overall Sourcing Strategy – Final* »

9. Appendix

In this master thesis I have used qualitative semi – structured interviewing in order to collect data. According to the theory stated in chapter 4, semi – structured interviews are based on an interview guide where an arrangement of subjects has to be covered, as well as suggested questions. The prepared interview guide in relation to this master thesis is documented in section 9.1. Several interviewees have contributed with information in relation to this master thesis. In total seven different persons were interviewed. In addition, I had extensive communication with a number of representatives in the category responsible group in Statoil. Section 9.2 presents an extensive table of the main findings from the conducted interviews.

9.1 Interview guide

The interview guide consists of three main subjects. The first subject concerns general information of positions, project title roles and experiences. The second subject includes several questions related to an overall strategy for procurement at an international exploration well project. The last subject examines requirements, key challenges and actions related to establishment of different logistics contracts. As stated in this master thesis, logistics contracts are frequently sourced from the market and require establishment of specific procurement strategies. In addition, some questions regarding environment and culture are listed. The following interview guide with questions was prepared in relation to this master thesis:

1. Position's, project title roles, experiences from other project.

Questions:

- Which positions and project title roles have you filled in relation to an international exploration well project?
- What are your most remarkable experiences from these positions and project title roles?
- How does Statoil prepare an international frontier exploration well project (*crossing energy frontiers*)?

2. Overall strategy for procurement

Questions:

- Which possible «overall strategy for procurement» do you identify in relation to an international exploration well project?
- Do you have a perception of guidelines that exist in category strategies? Constraints? Requirements?

- How can mobilization/demobilization costs be reduced? Actions? Improvements in agreements?
- Which elements are important in order to select a preferred supplier in an international exploration well project? - Experience - Availability - Technical weighting - Commercial weighting.
- How does Statoil establish a follow – up strategy of a supplier?

3. Establishment of logistics contracts

Requirements, key challenges and actions related to:

- Helicopter and chartered fixed wing transport.
- Offshore support vessels.
- Establishment of supply base.
- Environmental issues and prevention of accidents.
- Culture aspects.

9.2 Findings from interviews

Seven interviewees have contributed with information in relation to this master thesis. The main findings from the conducted interviews are stated in table 13 below.

Position's, project title roles, experiences from other project	
Questions	Main findings
Which positions and project title roles have you filled in relation to an international exploration well project?	<ul style="list-style-type: none"> • Logistics manager. • Flight safety staff (FSS). • Project leader. • Logistics procurement responsible. • Rig intake responsible. • Drilling engineer. • Category strategy responsible.

<p>What are your most remarkable experiences from these positions and project title roles?</p>	<ul style="list-style-type: none"> • Experiences related to cooperation with other operators . • Understand, respect and interact with the culture where Statoil operates. • Market screening has to be performed early in a project. • Involvement of the category team consisting of flight safety staff (FSS), procurement and air transport services (ATS) in an early project phase is essential.
<p>How does Statoil prepare an international frontier exploration well project (<i>crossing energy frontiers</i>)?</p>	<ul style="list-style-type: none"> • Evaluate possible cooperation with other operators. • Market screening. • Contact with relevant authorities. • Evaluate infrastructure. • Contact and use relevant networks. • Marine operations in Bergen, base operations and the category team related to helicopter and chartered fixed wing transport have to be involved.
<p>Overall strategy for procurement</p>	
<p>Questions</p>	<p>Main findings</p>
<p>Which possible «overall strategy for procurement» do you identify in relation to an international exploration well project?</p>	<ul style="list-style-type: none"> • Agreements > 10 MNOK have to establish a specific procurement strategy. • Have to know what to procure for the specific well and strategies for all goods and services. • Evaluate contract packages and use of Statoil frame agreements. • Statoil had great success in Indonesia related to cooperation with 5 other operators. About 30 shared agreements were established in order to execute the exploration well. • An overall strategy for procurement has to include drilling mobile unit and LWI strategy or rig strategy, service strategy, logistics strategy and elements related to joint operation. • An option is buying all or parts of the required services from companies like AGR. They may deliver a total package with rig, drilling services etc. This is for instance done in Africa. • Cooperate with other operators in relation to rig intake.
<p>Do you have a perception of guidelines that exist in category strategies? Constraints? Requirements?</p>	<ul style="list-style-type: none"> • Some of the interviewees are not familiar with category strategies. • Within the category helicopter and chartered fixed wing procurement in the category team is responsible for the strategy.

	<ul style="list-style-type: none"> • All international exploration wells have to consider global category strategies. • Category strategies are very often focused on the NCS. This is where Statoil's main activities are. However, category strategies become gradually more and more global. • Several interviewees express that category strategies are not updated and customized according to international exploration well projects. • There is a lack of global aspects. • Specific procurement strategies have to be consistent with relevant category strategies. Sometimes the category strategies give guidelines, sometimes not. It depends on what a category strategy is focused on and which area it focuses on.
<p>How can mobilization/demobilization costs be reduced?</p>	<ul style="list-style-type: none"> • With respect to helicopter and chartered fixed wing transportation it is important to include the category team initially in a project. • Cooperation with other operators. Savings related to sharing of mobilization/demobilization costs. For instance, procuring a drilling rig with existing drilling service contracts. • Select the optimized solutions for the project. • Understand the market.
<p>Which elements are important in order to select a preferred supplier in an international exploration well project?</p>	<ul style="list-style-type: none"> • Suppliers with experience from the operation area, established infrastructure and a built logistics system are preferred. • With respect to helicopters it is important with experience from the region and the selected type of helicopter. • It is important to be aware of potential requirements from the authorities related to suppliers. • The selected suppliers should have an established organization in the operation region.
<p>How does Statoil establish a follow – up strategy of a supplier?</p>	<ul style="list-style-type: none"> • Suppliers have to be followed up in relation to HSEQ prequalification. • Statoil has to do much work in advance in relation to exploration wells for a short period of time. Requirements and expectations have to be reviewed. • Daily follow – up of suppliers. For instance, deliveries within schedule and contracted quality. • Double check invoices.

Establishment of logistics agreements

Requirements, key challenges and actions related to	Main findings
Helicopter and chartered fixed wing transport	<ul style="list-style-type: none"> • The category is organized through a cross functional team represented by Air Transport Services (ATS), Procurement and Flight Safety Staff (FFS). • One offshore rig normally requires 3 – 4 trips in operational support per week with a medium or large size helicopter. • Requirements related to SAR, stand by HK and backup solutions must be examined. • Contracts related to helicopter services are often sourced from the market. • Market screening in order to get a complete overview of the current market is essential. • The optimization of flight safety, operational and commercial aspects in the category is through direct involvement of the category team in all Statoil’s global operations. • The category team’s customers have low emphasis on helicopter logistics. • There are some challenges concerning roles and responsibilities in relation to helicopters. • The category team utilizes their networks with extensive knowledge and flexibility. • Statoil should allocate more resources in order to achieve updated category strategies.
Offshore support vessels	<ul style="list-style-type: none"> • Market screening in order to get a complete overview of the current market is essential. • Local spot market has to be examined in order to get an overview of capacity. • Contracts related to offshore support vessels are often sourced from the market. • A normal operation of one rig requires two vessels. The vessels have to be approved for standby duty. • Normal requirements of operational support for one offshore rig are three trips per week.
Establishment of supply base	<ul style="list-style-type: none"> • A supply base contract has to confirm that valid Statoil requirements are encountered. • Supply base operations are carried out according to existing rules,

	<p>regulations and internal requirements.</p> <ul style="list-style-type: none"> • A supply base should consists of a handling area to deliver equipment, offices and office equipment, outside storage area for OCTG, bulk facilities, warehouse facilities, baskets, containers, tote tanks, skips and other related equipment, special waste disposal, quay, good foundations in the handling, an ISPS approved terminal and a workshop for pipe repair, welding and other related services.
Environmental issues and prevention of accidents	<ul style="list-style-type: none"> • The environment in Alaska is considered very harsh and vulnerable. This makes particularly heavy demands on anyone seeking to pursue industrial activities. • In order to meet these challenges, protection of the delicate environment in Alaska is extremely important and has to be strictly enforced towards relevant suppliers.
Culture aspects	<ul style="list-style-type: none"> • Legal issues in the specific countries can be a challenge. • Culture aspects are an underestimated issue. • Statoil has to understand, respect and interact with the culture where they operate.

Table 13: Main findings from the conducted interviews.