



UNIVERSITETET I  
NORDLAND

HANDELSHØGSKOLEN I BODØ • HHB

---

# MASTEROPPGAVE

Advantages, opportunities and challenges achieved  
through strategic alliances positioned for the oil  
service industry in Northern Norway

Andreas Ringstad

Tara Modalsli

Energy Management EN310E



## Table of Contents

Table of Contents .....	i
List of figures .....	iv
List of tables .....	iv
Abstract .....	v
Preface .....	vi
Sammendrag .....	vii
1. Introduction .....	1
1.1 Why oil service? .....	1
1.2 Why oil service in Northern Norway? .....	2
1.3 Research topic .....	3
1.4 Actualization and relevance .....	4
2. Context: The oil service industry .....	5
2.1 Definition of oil service .....	5
2.2 The segments within oil service .....	7
2.3 Existing oil service business in Northern Norway .....	9
2.4 Opportunities for oil service in Northern Norway .....	12
2.5 Resource potential in Northern Norway .....	13
2.6 Challenges and opportunities in Northern Norway .....	15
2.7 What makes the High North a special case? .....	16
2.8 General discussion .....	18
3. Theory .....	21
3.1 Generic competitive strategies .....	22
3.1.1 Overall cost leadership .....	22
3.1.2 Differentiation .....	24

3.1.3 Focus .....	24
3.2 The five forces framework .....	25
3.2.1 Threat of entry .....	26
3.2.2 Intensity of rivalry among existing competitors .....	29
3.2.3 Pressure from substitute products .....	29
3.2.4 Bargaining power of buyers .....	30
3.2.5 Bargaining power of suppliers .....	31
3.2.6 Government as a force in industry competition .....	31
3.3 Strategic alliances.....	32
3.4 Resources and competences .....	37
3.5 Cluster Theory and the National Diamond .....	39
3.6 The chosen theories .....	40
4. Method .....	40
4.1 Qualitative data collection.....	41
4.2 Report structure .....	42
4.3 Content analysis and grounded analysis.....	43
4.3.1 Grounded analysis .....	44
4.4 The interviews .....	45
4.5 Ethical considerations .....	48
4.6 Validity and reliability of our research .....	49
4.7 Strengths and limitations .....	50
4.8 Collecting the data.....	51
5. Empirical findings .....	53
5.1 Barriers to enter the oil service industry .....	54
5.1.1 Barriers pertaining to new and small actors .....	55
5.2 Resources required to operate .....	60

5.2.1 Financial Resources.....	60
5.2.2 Human and Physical Resources .....	63
5.3 Local competence.....	67
5.4 How alliances can contribute to increased competitiveness .....	72
5.5 Activity in the northern oil service industry.....	81
6. Discussion: The oil service industry in Northern Norway.....	87
6.1 Oil and gas activity in Northern Norway .....	87
6.2 Barriers to enter the oil service industry in Northern Norway.....	91
6.3 How to efficiently allocate and exploit resources required to operate.....	96
6.4 Identification and application of competences.....	102
6.5 Strategic alliances.....	107
6.5.1 The case of small actors that together form a strategic alliance.....	108
6.5.2 The case of a small actor’s strategic alliance with a major actor .....	111
6.5.3 The case of a major actor’s strategic alliance with a small actor .....	113
7. Conclusion.....	116
7.1 Our suggestions to industry operators .....	120
7.2 Our research contribution.....	121
7.3 Our suggestion for further research.....	121
References .....	122
Appendix .....	125
3.1 Imperfect mobility, imperfect imitability, and imperfect substitutability .....	125
4.1 The interview guide, template .....	127
4.2 Seven stages in Grounded Analysis .....	129

## **List of figures**

Figure 2.2.1: E&P value chain and the oil service segments

Figure 2.3.1: The Skarv FPSO

Figure 2.3.2: The Goliat FPSO under construction in South Korea.

Figure 2.4.1: North Energy on how the Barents Sea may develop

Figure 2.3.3: Oil service companies in the Northern Norway, total turnover in billion NOK.

Figure 3.2.1: Porter's five forces

Figure 3.5.1: "The National Diamond"

Figure 5.1.1: Exploration areas in the Barents Sea

## **List of tables**

Table 3.1: Generic strategies

Table 3.3.1: Buy, ally or DIY (do-it-yourself) matrix

Table 3.3.2: Ownership decisions based on transaction costs and resource-based rationales

Table 3.3.3: A Typology of Inter-Partner Resource Alignments

Table 3.4.1: Strategic capabilities

Table 4.1.1: Interview structures

Table 4.2.1: Positivism versus relativism

Table 4.3.1: Content versus grounded analysis

Table 4.5.1: Key principles in research ethics

Table 4.8.1: Findings categorization

Table 5.2: Supply matrix

Table 5.5.1: Supplies delivered, billion NOK

Table 5.5.2: Findings summarization

Table 6.5.1.1: The Helgeland V&M organization

## **Abstract**

Oil and gas discoveries in Northern Norway are expected to increase in years to come. Activity within E&P value chains are therefore believed to grow extensively over the next decades, which will strengthen the oil service industry's footprint in the region. The long contracts and high-expected turnover contributes to an attractive industry for both new and established companies, regardless of the low margins.

When a company approach oil service, it is important that they know something about the industry requirements, the barriers to overcome, and how to position and prepare for competition. The right resources and competences essential for operation should be present and there are basically three alternatives to source these; M&A's, organic growth or strategic alliances. We identified strategic alliances to be the most efficient strategic method for industrial positioning and progress in the Northern Norwegian oil service industry. Thus, this master thesis is written with the focus:

*Advantages, opportunities and challenges achieved through strategic alliances positioned for the oil service industry in Northern Norway*

We formalized our perception through a qualitative study. Interviews with Aker Solutions, Aibel, Statoil, Eni Norge, Helgeland V&M, Hammerfest Industriservice, Invis and Petro Arctic create the foundation of our research. The main findings are that strategic alliances will reduce market barriers, enhance resource utilization and initiate knowledge transfer between suppliers. Strategic alliances can also contribute to strengthen the regional presence, and stimulate inexperienced (local) companies to join the industry. Additionally we identified that activity is limited and that the business opportunities are less attractive than what is being communicated by politicians and dedicated stakeholders. The entrepreneurial process to become an oil service supplier is challenging and resource demanding, which underlines the need for a solid strategy supporting the corporate objective throughout the organization.

Generally, our conclusion is that strategic alliances are essential for inexperienced suppliers to acquire knowledge, quality standards and industry experience. Experienced suppliers' incentive is access to human resources and geographical proximity. Due to the contract-based and time-limited projects, M&A's and organic growth appears not to be the optimal strategic method to acquire the necessary resources and competencies for any of the parties involved.

## **Preface**

This master thesis concludes five years of business education. We hope the work can contribute to strengthen the knowledge of the Northern Norwegian oil service industry and challenges related to business development. We think the topic and hands-on approach to strategic decision-making and knowledge of the E&P value chain and oil service segments support our ambitious career goals going forward.

The work has been interesting and more business relevant than our initial impression of a master thesis. We wanted a business-focus and a practical layout and we found that an empirical driven research method would fit our hands-on approach. We got to interview, interact and visit the several exciting companies, both small and large.

We set ourselves clear deadlines and goals related to the different stages and progress. We can relate to it as a project, and experienced the value of proper planning and hard work from the beginning.

Our impression is that there is a great interest among executives and industry professionals in Northern Norway that support studies such as ours due to its relevance for their corporate interests. We planned for and approached our interviewees professionally and were able to schedule interviews with everyone we contacted. A special thanks to Aker Solutions, Aibel, Statoil, Eni Norge, Helgeland V&M, Hammerfest Industriservice, Invis and Petro Arctic for taking time for interviews and great feedback afterwards.

We also needed an academic sparring partner throughout our work. We therefore want to thank Professor Jan-Oddvar Sørnes at Bodø Graduate School of Business for his terrific support and academic input. Professor Sørnes has been available and positive to all kinds of inquiries we may have had, and gave us confidence in that what we did was academically appropriate.

Whether if you are a student, researcher or business professional, we hope you will find our work interesting and helpful. Please enjoy!

## Sammendrag

Det er ventet mange funn på nordnorsk sokkel i årene som kommer. Aktiviteten innen leting og produksjon er ventet å vokse og dermed vil oljeserviceindustrien styrke sin tilstedeværelse i Nord-Norge. Lange kontrakter og høy forventet omsetning gjør industrien attraktiv for både nye og etablerte aktører selv om marginene er lave.

Når et selskap posisjonerer seg mot oljeserviceindustrien er det viktig å ha tilstrekkelig kunnskap om krav og standarder, barrierer samt hvordan en lykkes i sterk konkurranse med andre aktører. Riktige ressurser og profesjonell kompetanse er essensielt og det er tre måter å skaffe seg disse på: gjennom fusjoner og oppkjøp, organisk vekst eller strategiske allianser. Vi har funnet strategiske allianser som det mest effektive utgangspunktet for industriell posisjonering og utvikling.

Vi har hatt følgende fokus når vi har jobbet med denne masteroppgaven:

*Fordeler, muligheter og utfordringer oppnådd gjennom strategiske allianser rettet mot oljeserviceindustrien i Nord-Norge*

Vi har gjennom denne oppgaven formalisert vårt inntrykk om betydningen av strategiske allianser gjennom en kvalitativ studie. Vi har intervjuet Aker Solutions, Aibel, Statoil, Eni Norge, Helgeland V&M, Hammerfest Industriservice, Invis og Petro Arctic og bruker disse som fundamentet for forskningen vår. Hovedfunnene er at strategiske allianser reduserer barrierene, øker ressursutnyttelsen og bidrar til kunnskapsutveksling på tvers av organisasjoner. Strategiske allianser kan også bidra til å styrke det regionale bidraget og stimulerer uerfarne aktørers bidrag til industrien. I tillegg har vi funnet ut at aktiviteten i nord er kan oppfattes som overdrevet og at forretningsmulighetene er mindre attraktive enn hva mange mener. Prosessen med å posisjonere seg mot oljeservice er utfordrende og ressurskrevende og en strategi som støtter virksomhetens målsetning er meget viktig.

Konklusjonen vår er at strategiske allianser er essensielt for at uerfarne aktører får tilgang på kunnskap, industristandarder og erfaring. Erfarne aktørers største insentiv er lokal tilgang på kvalifisert arbeidskraft og industriell kapasitet. På grunn av prosjektbaserte operasjoner med begrenset levetid er oppkjøp og organisk vekst mindre attraktive metoder for å få tilgang på ressurser og kompetanse.



## **1. Introduction**

This master thesis is written based on findings we have collected on the Northern Norwegian oil service industry. We chose oil service because we wanted to learn more about the industry, the segments and the oil and gas companies' value chain. The perspective of strategic alliances is related to our interest in strategic management, and the identification that this is an important aspect of the industry's growth prospect. Also, recognizing the Northern Norwegian oil service industry as a relatively new industry in geographical terms, with strong growth potential and challenges related to further development, makes it an interesting research objective. A key concern in this region is how to join and exploit the industry growth potential and position as an oil service company. Thus, alliances will be connected to this issue.

We believe the knowledge gained through our research is transferrable to other industries in the same growth phase as well. Also, we hope to contribute to a better understanding of the industry needs, the industry development process and strategic alternatives to increase the possibility for a successful transition process in becoming an oil service supplier in Northern Norway.

### **1.1 Why oil service?**

The oil service industry is by many seen as a sector within the oil and gas industry. To Norway oil service isolated represent the second largest industry measured in exports, after oil and gas production and before the fishery industry. Thus, oil service should be seen as an individual industry due to its size and importance. The industry delivers a wide range of products and services towards exploration and production (E&P) activities, making oil and gas companies able to invest in exploration, development and production of natural resources.

The Norwegian oil service companies are among the biggest and most sophisticated of its kind, and offer supplies on a global basis, making it also an international industry. Oil service companies are important facilitators and supporters of global energy production with their high-tech industry environment. The organizations are often recognized as highly innovative and competence intensive.

The Norwegian oil and gas industry has progressed due to the first oil discoveries on the Norwegian continental shelf (NCS) in the 1960's. The Norwegian Government took early the initiative to development, initially through knowledge transfer from the industry leaders at

that time. Norwegian companies were involved in the development and operational phase, utilizing knowledge and experience to create a Norwegian oil and gas environment. Statoil and Norsk Hydro were the state owned companies active within E&P. National industrial actors such as Aker and Kværner became exposed to oil and gas developments as contractors and suppliers to E&P companies that were active on the NCS. These companies created a foundation for industry development, entrepreneurship and innovation, which essentially developed the oil service industry. The various operators in industry segments are nowadays highly differentiated supplies toward specified stages of the E&P value chain. This was a successful model that included inexperienced operators and professionalized them. We believe that strategic alliances can contribute to the same knowledge sharing and growth of the Northern Norwegian oil service industry.

## **1.2 Why oil service in Northern Norway?**

We consider Northern Norway a frontier market. A frontier market is considered an area with little or no present infrastructure for E&P activities, also called a Greenfield area by the industry. Northern Norway constitutes the three most northern counties of Norway, Nordland, Troms and Finnmark. These counties has less population per square kilometer than the rest of the country, less developed business environment and has less exploration of oil and gas resources. Recently, however, the area was considered increasingly important, as the North Sea is maturing and oil and gas production will decline. As Norway's economy is highly dependent on oil and gas activity, both for jobs and extraordinary income taxes, there has been a political effort to stimulate E&P activity in the immature Barents Sea.

The Arctic, which is defined as the area north of the Polar Circle, is considered an important geopolitical area due to its vast deposits of important natural resources. According to US Geological Survey, a 2008 study of global oil and gas resource potential indicate that 14 percent of global oil resources and more than a third of the natural gas resources are to be found in the Arctic. Northern Norway can then enhance the national production profile of oil and gas significantly. This should also provide new jobs and business development for the region, contributing to national wealth.

When all of the sudden billions of dollars are being invested for development projects in Northern Norway, businesses want to explore the opportunities to get involved. For companies with a local or regional status, a transformation is challenging for several reasons, all of which we will discuss later. In short, the main challenge is to access resources and

competences. There are basically three options for companies to acquire these, through M&As, organic growth or strategic alliances. If a company lacks resources or competencies, strategic alliances is a feasible alternative since the financial risk is considered lower and synergies may be easier to exploit.

Special operational challenges for Arctic environments, such as limited infrastructure related to E&P activity and development projects, insufficient local industry competence and a need for a strategic changeover for positioning reasons, all represent additional motivation for studying our topic in-depth. Hopefully, we will gain insight to an important region and be able to contribute to research by increasing the understanding of strategic approaches for regional industry growth and development.

### **1.3 Research topic**

Our preliminary image of the Northern Norwegian oil service industry gives us an impression of a fragmented business and industry environment. Businesses are *hoping* to benefit from the oil and gas industry's entry into northern territories, *without* appropriate strategies or knowledge on how to target and successfully break through as an oil service supplier. There might be lack of knowledge and/or experience regarding organizing and consolidating potential players into regional oil service operators. Knut Harald Nygård, one of our interviewees representing Statoil, said: "It is not enough to have an address in Northern Norway. You got to be competitive as well!" What he means is that many businesses in Northern Norway seem to believe that they automatically is to be included as oil service suppliers, while, however, it requires a lot of effort to succeed.

We want to find out how to become competitive in this industry, how to reduce entry barriers and what kind of corporate strategy favors a successful approach. As indicated, our data suggest that strategic alliances are the preferred strategy for inexperienced businesses to extend their resource bases and level of competence. However, experienced suppliers also seem to favor alliances when targeting capacity without committing capital expenditures.

This paper's research topic has then been formulated as:

*Advantages, opportunities and challenges achieved through strategic alliances positioned for the oil service industry in Northern Norway*

## 1.4 Actualization and relevance

Throughout our studies we got in contact with several industry experts, politicians and industry professionals based in Northern Norway or with special competence in Arctic resource management. We have examined a number of articles and reports on business development and future prospects related to the Arctic natural resources and business development. It seems like the oil and gas activities in the region are a complicated topic among many stakeholders. Issues debated are:

- How do we create local growth and content from oil and gas activities?
- How can we ensure safe operations in a vulnerable environment like the Arctic?
- How can we enroll E&P activity in the most important national fishery areas?
- How do we prepare our businesses for the oil and gas industry?
- When are we going to benefit economically from the oil and gas industry?

It is not our agenda to discuss all these issues. However, we believe that the most important potential for value creation is based on people's mindset. "What can we do to benefit from the oil and gas industry?" instead of "when will the industry benefit me?" We also believe that two different industries with significant presence in the region like the seafood and the oil and gas industry can benefit from each other. Both industries operate offshore and there is a potential for achieving scale advantages if they cooperate on issues concerning them both, e.g. navigation and search and rescue.

Local operators fear the exclusion of industry participation due to their inexperience and small resource bases, and that major international oil service companies are favored. We believe large players within oil service are essential for safe and economically efficient development at any part of the NCS. Jobs will be created in the different regions regardless, which are among the most important value-adding variables. We will try to identify how the companies, both leaders within their segment and small-scale regional or local actors, together, can exploit each other to maximize their competitiveness.

Both academic and business professionals support our research topic and highlight the importance of cooperation between small and large players. Cooperation is assumed to provide vital synergy effects and local content side effects that can help consolidate and streamline the fragmented business environment in Northern Norway. Assuming the key incentive for cooperation is to increase competitiveness, we want to identify *why* they should cooperate as well as *how*.

## **2. Context: The oil service industry**

In this chapter we will present the Norwegian oil service industry in Northern Norway.

Oil and gas field developments and operations in the Arctic is a relatively new phenomenon, especially for Norway. The Snøhvit gas field represents the first producing Arctic field on the Norwegian continental shelf (NCS), and came on stream in 2007<sup>1</sup>. The oil and gas companies' initiation of exploration, development and operation of the field, processing facility and LNG plant, introduced a new market for oil service companies in the most northern parts of Norway. Even though the Snøhvit field was discovered in 1984, there is little or no previous history of oil and gas activities in the Barents Sea. Thus, the companies operating within this industry may classify the area as a Greenfield environment, a frontier market with limited or no available infrastructure for oil and gas activities. The Norwegian Sea has a longer history when it comes to producing fields. However, activity above the Arctic Circle is relatively limited, with Norne as the first field being developed. Norne started producing in 1997.

The oil service industry is growing in the northern part of the country. Never has the activity within oil and gas been higher than now. Local operators are more robust than before and compete for tenders and contracts on developed and undeveloped fields. Major national and multinational oil service companies' sees opportunities in the north, and establish organizations in Northern Norway. These companies generate jobs and economic growth. The city of Hammerfest and the region around has the highest activity due to the onshore processing and LNG plant at Melkøya and as the port to the Barents Sea. The Bodø region is large on supplies, mainly due to high export of products to the oil and gas industry. The Helgeland region is experiencing high growth due to supplies of products and services to the FPSOs on the Skarv and Norne fields (Levert 2012, Henriksen & Sørnes, 2013).

### **2.1 Definition of oil service**

The oil and gas industry can be divided into two industry segments: upstream and downstream. The upstream segment is basically exploration, production and processing of raw natural resources, i.e. crude oil, natural gas, gas liquids and condensate. The downstream part is where the oil and gas are refined into products, distributed and sold to consumers. Oil and gas companies operating solely within exploration and production are called E&P

---

<sup>1</sup>About Snøhvit at Statoil's website:

<http://www.statoil.com/no/ouoperations/explorationprod/ncs/snoehvit/pages/default.aspx>

companies, e.g. Statoil, Wintershall and ConocoPhillips. Oil and gas companies with operations in both upstream and downstream are called vertically integrated oil and gas companies, e.g. BP, Exxon, Total and Shell, which are also referred to as “super majors” (Purvin and Gertz, 2009)

The oil service industry provides E&P companies with all kinds of products, technical solutions and services needed throughout the value chain. Oil service companies that deliver directly to the oil and gas companies are often referred to as a contractor. Oil service companies can also deliver indirectly via contractors as a sub supplier. Contractors and sub suppliers that do not deliver oil and gas related products or services is not considered an oil service company, e.g. hotels and suppliers of office equipment/services, power, properties, financial services, events, telecom, fuels etc. The entity is regarded as a Norwegian company, even if it is an affiliate of a foreign company. However, the subsidiary must be located and perform its business in Norway (Rystad Energy 2013).

In Norway, most oil service companies, from traditional heavy industry contractors to high tech sub suppliers, are gathered in geographical competence clusters along the coast from Oslo to Kristiansund. A lot of these companies serve oil and gas companies on the NCS and exports their services to international markets as technology leaders within their respective business segments. According to Rystad Energy, a highly recognized energy research company, the Norwegian oil service sector had in 2012 a turnover of NOK 461 billion, where NOK 186 billion was exports. This makes oil service the second largest industry in Norway, after the oil and gas industry, and before the seafood industry, measured both in turnover and exports (Rystad Energy 2013).

Ernst & Young Norway (2013) provides an annual review of the Norwegian oil service sector where they define an oil service company by their participation in E&P companies’ value chain. If a company provides products or services within the following part of the value chain, and has at least 50 percent of its turnover within oil and gas, it is per definition an oil service company:

1. Reservoir and seismic
2. Exploration and production drilling
3. Engineering, fabrication and installation
4. Operations
5. Decommissioning

## **2.2 The segments within oil service**

We will now present the oil service companies' role in the E&P value chain more thoroughly. First of, there are a lot of different types of companies serving within different segments. Some companies are large, so let us call them major operators. They are present in more than one segment. Other companies are medium or small, often highly specialized, and serve only within one segment. Roughly, we can divide the oil service sector into 11 main segments:

1. Seismic and geological and geophysical (G&G) surveys
2. Transportation and logistics
3. Rig and drill services
4. Well services
5. Engineering
6. Engineering, procurement and construction (EPC)
7. Topside and processing equipment
8. Subsea equipment and subsea installation services
9. Well intervention
10. Maintenance and modification services
11. Operational and professional services

These segments are further divided into sub segments, which again are divided into sub segments, making a total of 151 different segments at a third level. This gives us a perspective of the size and complexity of the oil service sector and the number of players (Rystad Energy 2013). Some major operators, e.g. Aker Solutions, operate in several different segments, both at the first level and at the third level.

The exploration phase involves companies providing seismic and G&G, rig and drill services and well services. These companies are mainly located in large cities with extensive financial institutions, like Oslo and Stavanger, and they have satellite operational offices in the regions where they provide and perform their services. Companies providing transportation and logistics services are present in the regions where they will support the local activities in all part of oil and gas companies' value chain. Often, there is one provider of these services present in each regional market, close to the coast and area of operation. In areas with exploration activity and little or no production, these companies are usually the only ones with current oil and gas related operations. When discoveries are made, more capital-intensive segments make their entrance as heavy infrastructure is needed to produce, process and

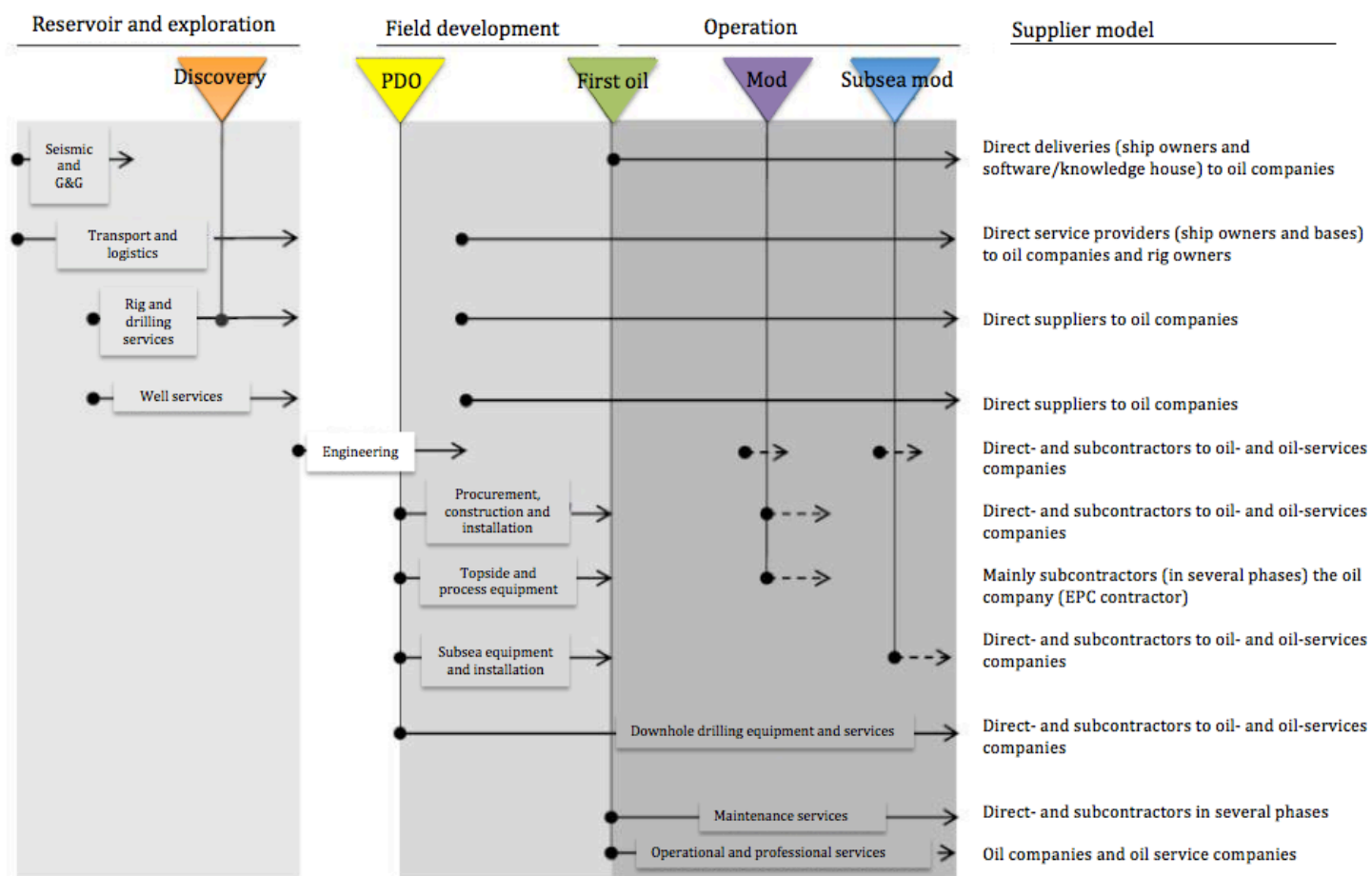
transport oil and gas. The segments involved are within EPC, topside and processing and subsea and installation. These companies are often localized near the cost with yards and engineering. The operators produce and install offshore platforms, all kinds of subsea equipment needed to lift and/or re-inject the well flow from the reservoir, subsea to surface risers, pipelines and onshore facilities like receiving terminals or processing plants (Rystad Energy 2013).

When a field is producing oil and gas, there is demand for segments within well intervention and maintenance and modifications to maintain or enhance reservoir utilization and the capacity of production and process facilities. There is also a need for on-site operational and professional services like metal coating, surface treatment, accommodation and catering. The work force enrolled within these segments is located close to the site of operation, either offshore or onshore. Activities like drilling of production and injection wells, reservoir logging and seismic services used for reservoir mapping and projections, are activities that usually are performed throughout the particular field's lifespan (Rystad Energy 2013).

The model below gives a good overview of the E&P value chain and where the various segments within the oil service industry are involved. A lot of suppliers in these segments are based in clusters, and control their operations from offices in Southern Norway or abroad, e.g. drilling, seismic, EPC or engineering operators. However, as the activity of their business grows the incentives for establishing local offices and infrastructure close to the operations may increase.



**Figure 2.2.1: E&P value chain and the oil service segments**



Source: Rystad Energy (translated to English)

### 2.3 Existing oil service business in Northern Norway

The oil service industry is still small in Northern Norway, but it is growing. Around 1 percent of the total work force, i.e. around 3500 employees, is currently employed in the northern oil service industry. Compared to the national figure of Norway, around 6 percent of the total work force is employed within oil service (Rystad Energy 2013: p. 75).

In 1996, the three northernmost counties, referred to as Northern Norway, had a breakthrough when Sandnessjøen in Helgeland was picked as the offshore supply base for the Norne field in the Norwegian Sea. When BP Norge made the Skarv discovery in 1998, the region saw a potential for increased offshore activity. Helgeland V&M, an alliance of small industrial operators, won the M&M contract for the Skarv FPSO (Rystad Energy 2013: p. 75).

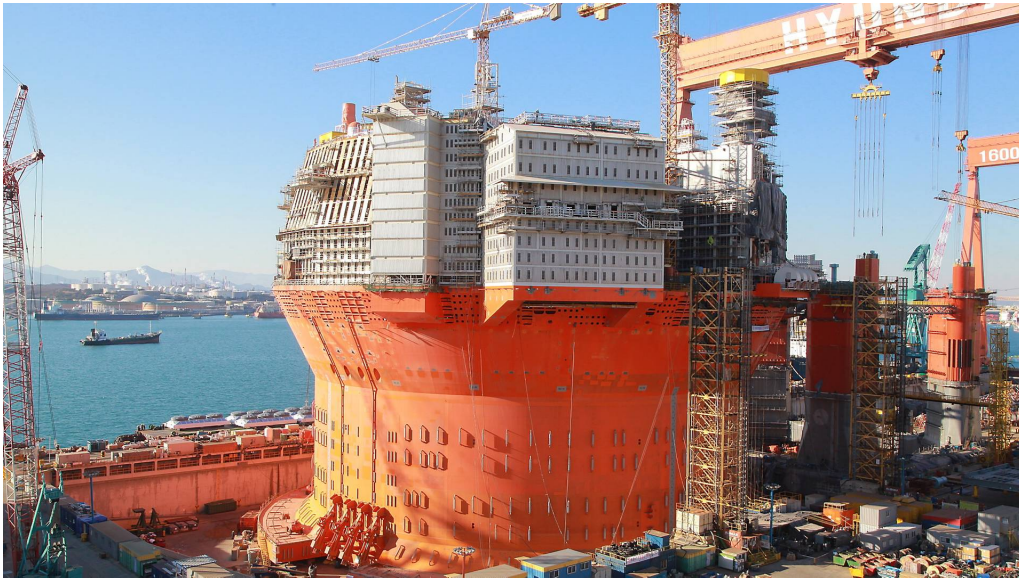
**Figure 2.3.1: The Skarv FPSO**



*Source: bp.com*

Statoil delivered the PDO for Snøhvit to the authorities in 2001. The field required heavy infrastructure investments, including subsea production solutions, subsea export pipelines, and an onshore processing plant with LNG production facilities. The development was initiated in 2002 and demanded state-of-the-art technology and a wide range of services, engaging a lot of specialized companies in the oil service sector. Both companies that participated in the development and not saw the potential for future developments are now positioning themselves for Arctic developments. The Goliat FPSO is planned to start producing in 2015, as the first floating offshore production unit in the Barents Sea. The Goliat FPSO will strengthen the oil service activity in around Hammerfest significantly. Apply Sørco won the M&M tender and are currently building offices in Hammerfest. Johan Castberg is the next projects that are up for a development decision and the project represent further and important industry growth in the Hammerfest region (Rystad Energy 2013: p. 75).

**Figure 2.3.2: The Goliat FPSO under construction in South Korea**

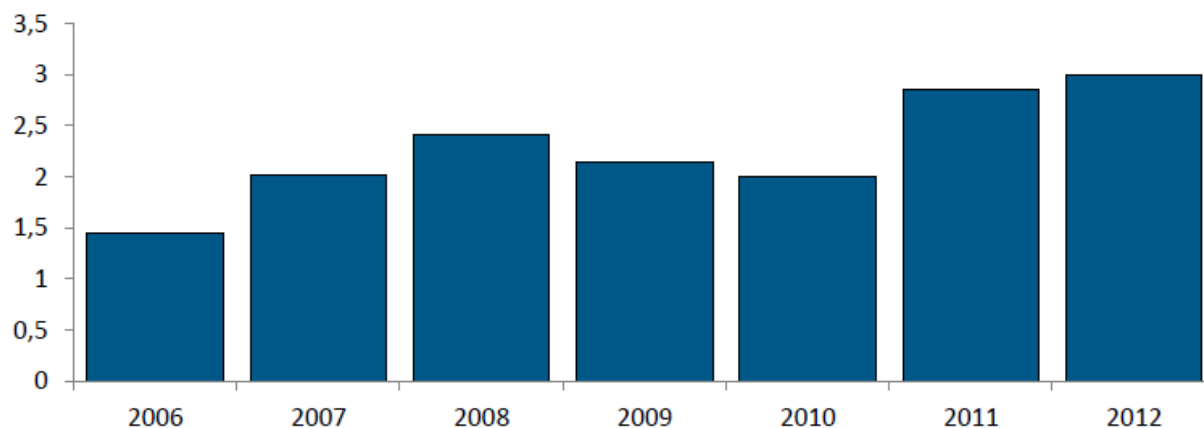


Source: tu.no

The exploration drilling activity is expected to stay high over the next year in the Norwegian part of the Barents Sea. Oil service companies establish themselves in the northern region to bid on individual contracts and generally to approach business opportunities they see coming, triggering yard services, offshore supply services, concept engineering, etc. The *operational and professional services* plus *maintenance and modification* segments represent the biggest segments where oil service companies in Northern Norway are present, serving oil companies on their installations onshore and offshore (Rystad Energy 2013).

Illustrated in figure 1.3, the oil service sector has increased in size in the northern region of Norway. More business opportunities represent more jobs, which will enhance local level of competence and provide a better resource foundation. Assuming that the oil service sector will increase its business foundation and footprint in Northern Norway, a basis for regional growth should be the ability to source and secure resources and competence in this region of Norway.

**Figure 2.3.3: Oil service companies in the Northern Norway, total turnover in billion NOK**



*Source: Rystad Energy*

## **2.4 Opportunities for oil service in Northern Norway**

In this sub-chapter we will present the numbers and analysis from the report Petro Foresight 2013, where Rystad Energy forecasts the development of oil and gas activities in Northern Norway. The report is not made public. However, we have taken the key content from the oil and gas news site, Petro.no.<sup>2</sup>

The annual investment and operation expenses in fields on the northern NCS are expected to exceed NOK 60 billion, nominally, within 2020. The 2013 figure is NOK 35 billion. The annual growth rate is projected at around 9 percent. From 2020 towards 2030, the average growth rate is estimated at above 12 percent. In short term, the growth will be driven by fields under development and operation, and in medium term the growth will be driven by discoveries already made, which will be developed. In long term, the growth will consist of new discoveries being made, and eventually being developed. The undiscovered resources on the northern NCS are estimated to be of considerable size.

Annual procurements related to field developments are expected to almost NOK 200 billion in the late 2020's. The Barents Sea is believed to take over the North Sea's position as the most important Norwegian offshore region. Rystad Energy anticipates a total of eight offshore field centers being developed, i.e. fields with extensive infrastructure.

---

<sup>2</sup> Link Petro.no:

<http://www.petro.no/nyheter/up/nord-norge-blir-det-nye-nordsjoen/a099c7d1-0f3e-49fe-a5a7-9841a83fd9b0>

The local supplies are believed to increase as the activity grows. Rystad Energy expects the local supplies towards Barents Sea developments to double by 2017, from NOK 4 billion in 2013 to 8 billion in 2017. Local oil service operators can be delivering up to 25 percent of the total supplies, driven by increased offshore drilling, i.e. between 3-5 rigs in constant operation, and developments of the Goliat, Johan Castberg and Snøhvit phase 2. After these developments, the estimated local supplies are expected at around NOK 10 billion within 2020.

In the northern part of the Norwegian Sea, Rystad Energy expects the development of the Aasta Hansteen field to boost regional deliveries with almost 30 percent in the period 2013 to 2017. Local suppliers will be of significance. There is estimated that 2-3 exploration rigs will be drilling continuously in the area.

**Figure 2.4.1: North Energy on how the Barents Sea may develop**



Source: tu.no

**2.5 Resource potential in Northern Norway**

When oil and gas companies invest in E&P activities, they invest in oil services. Thus, an increased focus on the northern NCS from E&P companies explains higher demand for oil services.

Again, referring to the report Petro Foresight 2030 by Rystad Energy, we find estimates on the resource potential for the northern NCS. For the Barents Sea, Rystad expects total

resources of 20.3 billion barrels of oil equivalents (boe), in which 84 percent is not yet found. The proven resources are then 3.3 billion boe, i.e. 16 percent. In the Norwegian Sea, Rystad Energy forecast a total of 6.7 billion boe, where 79 percent is not yet discovered. The proven resources are thus 1.3 billion boe, i.e. 21 percent of the total. A North Sea production in decline while resources are discovered in Northern Norway makes the Barents Sea and the Norwegian Sea together will provide most of the new oil and gas production in the end of the 2030's. The major bulk of new production will come from increased E&P activity in the Barents Sea.

The Norwegian Oil Directorate's (2013) resource estimates are more conservative compared to Rystad Energy's. The base estimates on total resources in the Barents Sea are 1.4 billion  $\text{Sm}^3 \text{ o.e.}^3$ , which is equal to 8.8 boe. The estimates for the Norwegian Sea are 2.7 billion  $\text{Sm}^3 \text{ o.e.}$ , which is equal to 16 boe. However, the Norwegian Sea estimate is for the entire Norwegian Sea, not just the northern part. The estimate on undiscovered resources is 4.9 boe for the entire Norwegian Sea, compared to Rystad Energy's estimate on undiscovered resources for the northern part of the Norwegian Sea of 5.3 boe (79 percent of 6.7 boe).

Considering the purpose of the Oil Directorate, it seems natural that this organization should not add optimistic forecasts for the oil and gas potential. Nevertheless, Rystad Energy is globally recognized for its quantitative precision and professional analysis, and those eventually discovered resources should materialize around Rystad Energy's figures. That implies a bright future for Northern Norway's industrial developments. However, high investments per barrel oil produced and an increasing focus on environmental sustainability and renewable energy can make this area vulnerable. In the recent report Global Environmental Outlook initiated and published by the United Nations, strong arguments for leaving hydrocarbons unproduced for environmental purposes are presented. Future shifts in the energy paradigm may threaten the oil industry. Gas is appraised as less threatening for the environment than oil.

The main risk in the Arctic is the possibility of small and geographically fragmented discoveries, making field developments more expensive compared to large discoveries like the Ekofisk and Johan Sverdrup fields (Johan Petter Barlundhaug 2013).

---

<sup>3</sup>Standard cubic meters oil equivalents

Generally, for a field to be considered commercial, it must:

1. Be of a certain size to support heavy infrastructure investments needed for production and transportation.
2. The oil price must be high enough to secure proper value of the reserves.
3. Small fields must be within reach of present infrastructure to be considered commercial, as a individual infrastructure solution will reduce the commercial potential.

The most debated and controversial exploration areas are the Nordland VI, Nordland VII and Troms II. On Statoil's website these areas are perceived as amongst the most exciting exploration areas left on the NCS. Statoil and other oil and gas companies are targeting exploration licenses on blocks in these areas as soon as the government opens up for exploration, which is believed to happen.

The new conservative government of Norway led by the Conservative Party decided, after they won the election in 2013, that the exploration restrictions set by the former social oriented government is to be carried forward. Arctic resource development is a hot topic on the political agenda these days. Not only in Norway, but in all Arctic countries are politicians and key stakeholders discussing how to approach the issues related to resource development. In Norway, the key stakeholders involved are the government, oil and gas industry, seafood industry and environmental NGOs<sup>4</sup>.

## **2.6 Challenges and opportunities in Northern Norway**

The Norwegian maritime industry, including the oil service industry, has a strong international presence and professional reputation. Some of the oil service companies possess strong experience entering frontier areas together with oil and gas companies. This capability can represent both an opportunity and a threat for local companies positioning themselves for the opportunity of supplying E&P activities in the Arctic. The potential threat is that the big national contractors single handedly will operate the contractual business by themselves. The opportunities for smaller and Northern Norwegian operators are the prospects of being included as indirect vendors of products and services or as alliance partners.

There are also political policies to be taken into account, which favors suppliers localized in

---

<sup>4</sup> Non-governmental organizations

the north. The Norwegian government has emphasized local content and participation in the development plans for Arctic areas (Menon Business Economics 2013).

When developing a field, the E&P operators must take into consideration how to maximize ripple effects from field investments. A plan on how to create local content must be included when handing in the plan for development and operation (PDO). Local content is often exploited through the use of local sub suppliers, hence allocating responsibility to the contractors as well. An alternative for contractors to include local content when competing for tenders is to include smaller operators in the project. Strategic alliances can potentially utilize resources and create synergy advantages.

Considering the commercial aspects, increased development costs are currently a challenge for oil and gas companies. Statoil has recently announced outsourcing, labor cuts and cuts in external overhead expenses (M&M). Arctic resource production will have among the highest per-barrel marginal cost in the industry and, thus, Arctic resource developments may be threatened by limited commercial opportunities. The decision made to postpone the development of the Shtokman gas field in the Russian Barents Sea is a valid example. Statoil was the first partner in the joint venture, Shtokman Development AG<sup>5</sup>, to withdraw their partnership. Total<sup>6</sup> has announced that they will leave the project as well, eventually leaving Gazprom<sup>7</sup> the sole partner and project owner. Although the partners are strictly silent about the Shtokman project, rumors in media say excessive investments; unfavorable (foreign) partner conditions and lack of suitable technology are the main reasons why Shtokman will not be developed. Despite being one of the biggest gas fields in history, and that the global gas demand is increasing, the commercial potential is found limited.

## **2.7 What makes the High North a special case?**

Some industry officials call the Arctic “the last energy frontier” because it is the only resourceful area that is not well explored and developed. The global need for energy advances the incentives for technology and exploration. Previous unattractive areas such as the Arctic, becomes interesting, given the prospective resources that are accessible and have commercial potential with today’s technology. Since energy prices have remained high during the last decade, a lot of effort is put in technological development, enabling oil and gas companies to

---

<sup>5</sup> Shtokman Development AG’s web site: <http://www.shtokman.ru/en/>

<sup>6</sup> French oil and gas company

<sup>7</sup> Major Russian gas company



extract valuable and hard-to-reach resources. The Snøhvit gas field and the Russian Prirazlomnoye oil field are relevant examples.

Johan Petter Barlindhaug, chairman of the board in North Energy, pointed out in a lecture at the University of Nordland in 2013 a few main challenges making the High North a special case for E&P activities:

- Hard Winter Climate
  - Polar lows with rapid weather changes
  - Quick temperature changes
  - Icing at high sea
  - Dark time with long periods without day light
- Long distances
  - Out of normal helicopter range
  - Difficult response to accidents
- Lack of “Back-up”-facilities
  - Long distance between sites with relevant industrial service
- Few ports of relevance
- Maritime qualities, service and land based transport infrastructure

Further, Barlindhaug discussed the development phase of the Barents Sea and call for better search and rescue (SAR) capacity along with oil and gas infrastructure, as the main short-term needs. SAR, ice management standards and equipment, satellite communication systems and ice class rigs and offshore service vessels are needed in the longer term for development at even higher latitudes than today.

In a report by SINTEF and NORUT (2009), political and climate challenges are highlighted and considered special for the oil and gas development in the Arctic. As for political issues, the following questions are considered relevant:

- Conflicts between the seafood industry and the oil and gas industry. How can these industries live in harmony?
- How to secure zero spills in such a vulnerable area?
- What kind of infrastructure solutions should be considered and built?

Regarding the polar climate in the Arctic, there are challenges due to the rapid changes in weather, heavy snow and rain, and extreme winds and waves of 10-15 meters is normal

during the winter. Also, the tides can be challenging with 2-4 meters in difference between high and low. During winter, there are also long periods with complete darkness. Combined with floating ice, this could be a threat for infrastructure installations offshore and for the supply and standby vessels, which is crucial to maintain production and safety. Offshore operations in the Arctic are therefore considered more demanding compared to offshore operations in the North Sea. In the report, the authors emphasized the need for expertise in the Arctic environment when operating offshore, along with technology and infrastructure solutions that need to be customized for Arctic operations to maintain environmental and operational safety.

## **2.8 General discussion**

Fundamentally, E&P activity is a process initiated by the government that provides E&P companies licenses to explore given geographical blocks for oil and gas resources. The oil and gas companies then need suppliers to support their activities throughout the value chain, from exploration to production, and that will represent the demand and market for oil service companies within their respective segment. The nature of field developments requires demand for various services, hence, the 11 oil service segments we have discussed offers solutions and supply their services and products accordingly.

What we have learned so far, is that the fundamental dynamics stimulating E&P activities are:

- Sufficient governmental supply of exploration licenses on the NCS
- Successful exploration results
- Proper commerciality of proven resources to secure field development

The Norwegian offshore market for oil and gas is, as mentioned, extensive. Northern Europe is the largest offshore oil and gas market globally, with 1 700 producing wells. Then comes West Africa with a bit more than 1000, South America has almost 900, the Gulf of Mexico above 700 and Australia close to 400. This might explain some of the reason why the Norwegian offshore technology market has such a strong international dominance, and why international companies chose Norway as their base for technology- and product developing activities in the subsea segment. (Rystad Energy, 2013)

The Norwegian government has since the discovery of oil in the North Sea at the end of 1960's supported and integrated the industry. Thus, large oil and gas clusters have evolved in several districts in Norway, Stavanger being the primary. "National competitive advantage,

then, resides as much at the level of the cluster as it does in the individual industries.<sup>8</sup> This carries important implications for government policy and company strategy.” (Porter, 1990: p. 152) Norway as a country is dependent on the extraction of oil and gas. The knowledge aggregated from experience and resources are among the best in the world, thus, the development of the North- and Barents Sea should be applicable as future oil and gas extraction areas.

However, the resources are hard and costly to extract, especially if the resources, in this case oil and gas, are fragmented in small fields with large distance between them and if the infrastructure in the area is limited. If a remote field is to be considered commercial, it needs to be of proper size so that the oil and gas companies can defend the extensive investments needed. When large fields are developed, they bring important infrastructure with them, which makes satellite fields in the nearby possible to be found commercial and developed. Due to limited seismic, drill data and research on the most northern NCS, we cannot say too much about the commercial potential in this area yet.

In the Barents Sea, experts disagree in the geological quality on the below-seabed ground structures in terms of prospective oil and gas discoveries. Thus, for the oil service industry, it is difficult to analyze the future activity and demand with high confidence. We see that companies prepare for individual contracts and establish organizations and infrastructure for these, but the visibility seems low, making investments and positioning for future business risky. This may delay the development of a local industry presence in the northern region. For instance, oil and gas companies, with Statoil in the forefront, encourage development of the local industry and technological capacity. However, when the investment decision of Johan Castberg is postponed, and the Goliat field may start production two years behind schedule, it is fair to argue a challenging and risky environment for smaller oil service operators planning development. Especially is this apparent since the opportunity for business diversification is limited due to the immature development profile of the Barents Sea.

The activity in Northern Norway appears to be in a growing trend. Referring to the Levert 2012 report, 2012 was a great year in terms of industry growth in almost every part of the northern region. Several oil service operators located in Nordland, Troms and Finnmark experienced growth. We do not know the number of 2013 yet, but, as per our understanding,

---

<sup>8</sup> External economies extend within clusters and not just within individual national industries. The presence of clusters helps mitigate some of the public good problems that constrain factor-creating investments.

the growth rates were somewhat lower compared to 2012. Industry actors we have spoken with, supported by various industry professionals in media appearances, expects the growth rates to stagnate or even decline in 2014 as the oil and gas companies cut operational and capital expenditures to boost operating margins. This is relevant both at a regional- and national level. Hammerfest Industriservice, Aibel and Invis all implied that 2014 would be a challenging year in terms of turnover. They realize that the activity level declines due to the oil and gas companies initiated comprehensive cost reduction schemes. Hammerfest Industriservice has already laid-off 25 workers due to lower than anticipated activity. However, the Goliat FPSO is believed to arrive in Hammerfest within the fiscal year of 2014 and may compensate for declining activity in the county of Finnmark.

The absent of stable manifestation and development of business might prevent companies to invest long-term in the region. The developments of the Barents Sea have been unpredictable due to uncertainty of government approval, heavy infrastructure investments and fluctuations in commodity prices. These factors make the northern NCS a more risky alternative than the North Sea with its well-established infrastructure. On the other hand, we have seen that Eni Norge as an example of an E&P company, invest heavily on the northern NCS. Eni Norge expects the resources in the Barents Sea to be extensive and sees solid future infrastructure development take place. Eni Norge also requires that contractors establish physical organizations in close contact, which forces increased oil and gas network developments in Hammerfest. These companies, with their local presence may increase fast development and increased infrastructural investments in the North. However, it is a fact that the Goliat FPSO faces huge challenges in its completion process and will be at least 18 months delayed in production. Sources we have spoken to, estimate a minimum 24-months production delay. It seems clear to us that the Goliat investment decision could have been postponed until the area's resource foundation had increased, had the difficulties related to the field's infrastructure completion and budget overruns been known at an earlier stage. The net present value (NPV) of the project has now obviously been significantly reduced. Mainly due to two factors, 1) the time value of delayed cash flows and 2) increased capital expenditures that directly reduce the NPV of the project. Also, since the government take is 78% of the investments through quick depreciation and the uplift arrangement, the project is now less attractive, also in a social economic view. The circumstances may have been changed, but, on the other side, first movers take higher risks due to the heavy infrastructure investments

needed, and further developments may be dependent on existing infrastructure. Hence, a poor project today may establish an infrastructural foundation for solid developments in the future.

We have written our thesis on the basis of this context. The main objective has been to highlight opportunities and challenges, and trying to connect the present and future possibilities with business prospects for local actors. The next two chapters will introduce academic theory that supports our reasoning, and the method used to collect and analyze data. Chapter 5 provides the data collection, and in chapter 6 analyzes our findings, before we introduce our conclusion in chapter 7.

### **3. Theory**

In this section we will present the theoretical foundation for our research. Given the qualitative nature of this study, our purpose is not to develop any theoretical hypothesis, but rather have an explanatory background.

As master students, we have had the privilege of attending several business seminars that addresses oil and gas activity in the Norwegian and Barents Sea. These seminars have left us with the impression that national and international players dominate the oil service industry in Northern Norway, and that the presence of local competitors is at a minimum. This again appears to have created a frustrated atmosphere amongst the communities, which have a great desire for including local companies in the industry and create ripple effects from it throughout the region. This research is conducted with the aim of identifying as to what extent it is possible for smaller business to gain larger supplier contracts, and how they can gain position in the industry. We recognize that the time- and capacity constraint do not support a thorough investigation of the complete industry. Thus, the theoretical framework outlined in this section will further explain and support our findings and enhance the understanding of how local suppliers can create a competitive advantage in their respective fields.

### 3.1 Generic competitive strategies

Michael E. Porter defines three generic strategies that potentially can outperform competitors in coping with the five forces (Porter, 1998: p. 34):

1. Overall cost leadership
2. Differentiation
3. Focus

A company can potentially pursue more than one strategy, though this will not be possible in most industries. To successfully implement any of the above strategies, total organizational commitment and support are required, which can easily be diluted if more than one is employed.

**Table 3.1: Generic strategies**

		<b>Competitive advantage</b>	
<b>Competitive scope</b>		<i>Lower cost</i>	<i>Differentiation</i>
	<i>Broad target</i>	Cost leadership	Differentiation
	<i>Narrow target</i>	Cost focus	Differentiation focus

*Source: Johnson et al., 2011: p. 199*

#### 3.1.1 Overall cost leadership

“Cost-leadership strategy involves becoming the lowest-cost organization in domain of activity”. (Johnson et al., 2011: p. 200) The cost drivers will be of highest concern for a company that wish to be competitive in this category. Porter identifies some key cost drivers that need to be emphasized with the objective of reducing operational costs.

- Input costs
  - Refers to cost minimizing in operations, where firms might save cost by outsourcing parts of their operations to lower-cost countries, e.g. call-centers in India. Raw materials are also a concern that needs to be emphasized.
- Economies of scale
  - Scale benefits are especially important if operations have high fixed costs. It is essential that the average unit costs reach a minimum. “For the cost-leader, it is

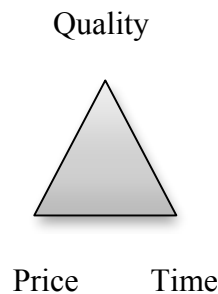
important to reach the output level equivalent to *minimum efficient scale*.”  
(Johnson et al., 2011: p. 200)

- Experience

Knowledge and experiences perceived as resources accumulate when they are applied, rather than depreciate such as other physical resources. Thus, the efficiency of an organization will increase over time, since competence will increase.

“The *experience curve* implies that the cumulative experience gained by an organization with each unit of output leads to reduction in unit cost” (Johnson et al., 2011: p. 200)

- Product/ process design



A company has to decide upon which factors to focus their competitive strategy on. It will in most cases be impossible to provide the highest quality at the lowest price with the best lead-time. However, a company can obtain a combination of any two of the three. In overall cost leadership, price should be of the highest concern, and a great emphasis on either quality or service.

Cost advantage will only exist if a firm has the lowest cost in their market. Having the second lowest cost will be a cost disadvantage in relation to the cost leader. Hence, they should either optimize their value chain further, or modify their generic strategy.

Another important impairment that should be emphasized is that the cost minimization should not be reflected solely in lack of quality. The market standard has to be met in order to stay competitive. Parity and proximity to the competitors are crucial. (Johnson et al., 2011: ch. 6.3)

### **3.1.2 Differentiation**

“Differentiation involves uniqueness along some dimension that is sufficiently valued by customers to allow a price premium.” There are two criteria that need to be highlighted in order to recognize the demand for the differentiated product or service:

- The strategic customer
- Key competitors

Product differentiation is often associated with higher investment costs, as valuable differentiation requires more R&D and advertisement. The company also needs to ensure that the gain in revenue will exceed the differentiation costs. (Johnson et al., 2011: p. 203)

Successful differentiation strategies are often seen in the creation of new niche markets, built on a strategic gap.

### **3.1.3 Focus**

“A focus strategy targets a narrow segment of domain of activity and tailors its products or services to the needs of that specific segment to the exclusion of others.” A focus strategy can either be in relation to cost leadership or differentiation. The purpose is to capture market segments with a very focused target market. E.g. Ryanair targets very price sensitive travelers that do not require connecting flights. Thus, they might gain a competitive edge on cost leaders, such as Norwegian Air Shuttle, that have a greater target segment. (Johnson et al., 2011: p. 205)

The focus strategy will focus on very specific elements, hence, be positioned as specialized in one domain. This creates inflexibility in relation to the companies with broader range, however, will contribute to an advantage if the demand is strong in their niche.

Johnson et al. (2011) emphasize that a successful focus strategy depends on at least one of three key factors:

- Distinct segment needs
- Distinct segment value chains
- Viable segment economies

The generic competitive strategies should give a directional approach as to which strategy will benefit a company’s direction. Within oil service, we will later on support a differentiated



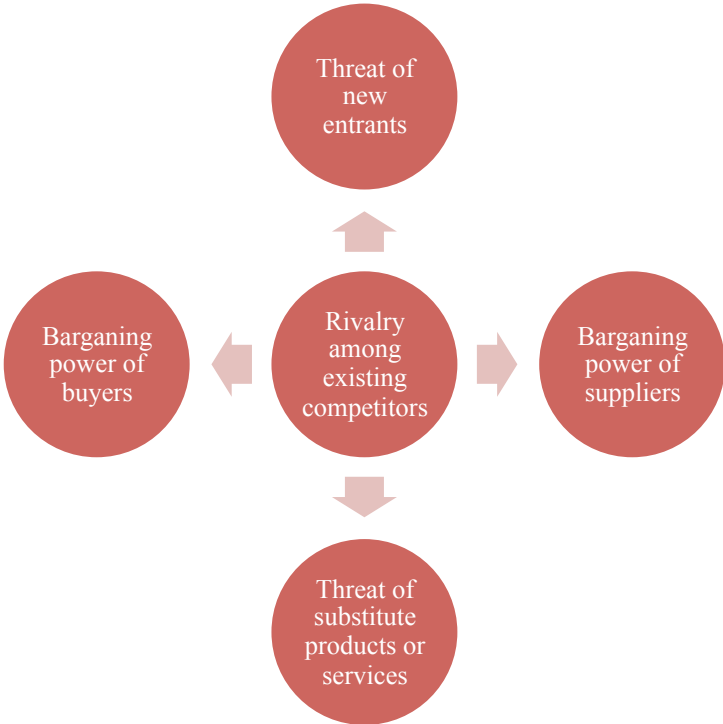
and focused approach due to the competitive forces present in the industry. The next section will further elaborate on the theoretical framework Michael E. Porter has developed on the industrial intensity of competition.

### 3.2 The five forces framework

Michael E. Porter (1998) argues that there are five forces that influence a company’s competitive position in the market, industry or segment. The threat of entry, supplier and customer power, and substitute products/ services are often neglected as forces that influence a company’s profitability.

Rivalries between companies are emphasized as the only real influence on a company’s position in the market. However, the five forces framework stresses that there are other factors that play a part in the equation. Thus, the framework is designed to analyze the main obstacles and attractiveness of a market, through the dynamics that shape the environment, how it evolves and drives competition.

**Figure 3.2.1: Porter’s five forces**



*Source: Porter, 1998: p. 4*

The framework was developed in 1979 to be used in industry analysis and business strategy, and has since it was first published been widely accepted and adopted in both practical and theoretical settings.

“The goal of competitive strategy is to find a position in the industry where the company can best defend itself against these competitive forces or can influence them in its favor.” (Porter, 1998: p. 4)

Porters’ five forces framework is explained in more detail below.

### **3.2.1 Threat of entry**

New entrants to the market can represent more intense competition for the incumbents. If they are serious and have a strong resource base they can potentially capture a significant market share. Thus, they should not be overlooked from a strategic point of view, as late response to the threat can have fatal implications for the competing companies. There are however some industries where new entrants constitute a bigger threat than others. The possibility of a new competitor can be evaluated in the barriers to enter.

Porter (1998) identifies six major barriers:

#### **1. Economies of scale**

Economies of scale refer to the decrease in unit cost due to factors such as knowledge and capacity. The concept states that experience will decrease per-unit cost due to higher efficiency, or producing more units when excess capacity exist, which will decrease the unit cost. The barrier to enter is then seen in the lack of knowledge, experience, path dependence or scale efficiency for new entrants that do not have these resources.

#### **2. Product differentiation**

In a market where products are highly differentiated, there will be higher entry barriers than if the product is standardized. “Differentiation creates a barrier to entry by forcing entrants to spend heavily to overcome existing customer loyalties.” (Porter, 1998: p.9)

In the generic strategies Porter emphasize cost leadership, differentiation and focus. Focus can be in either of the other strategies. A differentiation strategy can then provide a barrier for a potential competitor to enter the market/ segment.

### 3. Capital Requirement

Industries, sectors and segments can have very different capital requirements for entering. The consulting business as an example has very low investment barriers, as they are more dependent on human resources than they are on physical equipment. The oil service sector on the other hand requires extensive investments before they can operate. Building advanced offshore drilling rigs and oil service vessels, obtaining the necessary equipment and competence, etc. require scarce resources that are not easily acquired.

Companies vertically positioned to the firm might substitute and help a new entrant if they can benefit from it, or create an own establishment. Thus, forward or backward integration is a potential opportunity, as well as a potential threat.

### 4. Switching costs

The switching costs are associated with the cost of changing distributor or producer, and thus the product associations. The more differentiated a product is, i.e. customized, the higher the cost will be. Usually the switching cost is transferred on to the new supplier. In an industry with low customizations such as telecom, the cost of switching between suppliers is minimal. In the oil service sector the costs might be substantial due to e.g. integrated process of manufacturing and installation contractual clauses and project lead-time

### 5. Access to distribution channels

The distribution channels in some industries are a fundamental competitive force. The need for a reliable logistics system, and access to supplier channels that provide the service and quality standard expected is crucial for any company in a market with high competition. A competitive disadvantage will then exist if the uncertainties concerning service and quality are high.

The distribution channel can also be a competitive advantage for first movers, as they can build up an own system that excludes future competitors. The barrier to enter will then, for the following companies, suffice in the absence of access to the market. Thus, large investment requirements will be necessary to construct an own network for additional entrants.

## 6. Cost disadvantage independent of scale

“If costs decline with experience in an industry, and if the experience can be kept proprietary by established firms, then this effect leads to an entry barrier.” (Porter, 1998: p.12)

Profitability is the main factor determining a company's presence in a market. Revenues should always exceed costs, as operational losses eventually will force a company to either leave the market or go bankrupt. Thus, solid cost management procedures and economical efficiency providing low costs compared to the industry might provide established firms with a competitive advantage, which new entrants lack the competence to copy.

The main factors providing established firms with cost advantages are:

- Proprietary product technology

Patents, copyrights and secrecy are ways to prevent competitors from accessing a company's technology and product know-how.

- Favorable access to raw materials

“Established firms may have locked up the most favorable sources and/or tied up foreseeable needs early at prices reflecting lower demand for them than currently exists.”(Porter, 1998: p. 11)

- Favorable locations

Established firms might have acquired land/ buildings in favorable areas before the prices excelled. Thus, entering the same location for a new entrant might be impossible or very expensive.

- Government substitutes

Substitutes from the government might provide established firms with a sustainable competitive advantage.

- Learning experience curve

New entrants lack the experience to optimize their operations. The classical learning curve is independent of economies of scale, and relate to the knowledge accumulated through operations. Thus, established firms might hold a strong financial position through lower

production cost and a more efficient supply chain, that new entrants will require large start-up investments to achieve.

“Experience is just a name for certain kinds of technological change and may apply not only to production but also to distribution, logistics, and other functions.” (Porter, 1998: p.12) The growth-phase of an industry is usually where the learning curve is the steepest. Thus, new entrants must be aware of high entering costs, and have the financial strength to sustain an initial negative cash flow.

Any considerable cost disadvantage can prohibit new entrants to establish in the market. In industries where costs declines with experience, entrants face higher initial costs that might exclude them to gain a foothold in the market.

#### 7. Government policy

Government control such as licensing requirements, limited access to raw materials and pollution control can prohibit new entrances.

### **3.2.2 Intensity of rivalry among existing competitors**

Competitors compete with different tactics, mostly on price, advertisement and differentiation. The intensity on the competition becomes stronger when a company believes they can improve their position in the market. The most frequent tactic is price, however, the end result is usually a lower industry profit, as the competitors often retaliate by cutting prices further. This is an unstable position that cannot sustain if it is not financially sound. Heavy advertisement and the launch of new/-improved products might enhance the market, and is a more profitable strategy for the overall industry. Expanding the market can give the competitors a bigger consumer base, and thus decrease the pressure on price competition.

### **3.2.3 Pressure from substitute products**

The presence of substitute<sup>9</sup> products diminishes the price ceiling a company can charge. This is due to the loss of sale if the product/ service becomes too expensive relative to the substitute. “Substitute products that deserves the most attention are those that (1) are subject to trends improving their price-performance tradeoff with the industry’s product, or (2) are produced by industries earning high profits.” (Porter, 1998: p. 24)

---

<sup>9</sup> A substitute is a product or service that satisfies the same need as another product or service fulfills

In the oil service sector there have been discussions regarding the use of human labor versus machines. The salary level in Norway is at a disadvantage compared to other oil nations. Thus, new technology that could decrease the dependence on labor would significantly increase the competitive position. Another substitute existing in the sector is vessel transportation of oil and gas versus pipelines. Oil companies are carefully evaluating which of the two are most financially sound, thus decreasing the price ceiling the different operators can charge for their services.

### **3.2.4 Bargaining power of buyers**

The buyers will always try to decrease the prices, while seller seeks to maximize revenue. These are two conflicting aspects, and a strong buyer will have a better position to decrease the seller's revenue. If the buyer represents an extensive share of the supplier company's revenues, it has a greater bargaining power than the latter. Thus, a buyer group is powerful if the following circumstances hold true (Porter, 1998: p. 24-):

- It is concentrated or purchases large volumes relative to seller sales
- The products it purchases from the industry represent a significant fraction of the buyer's cost or purchase
- The products it purchases from the industry are standard or undifferentiated
- It faces few switching costs
- It earns low profit
- Buyers pose a credible threat of backward integration
- The industry's product is unimportant to the quality of the buyers' products or services
- The buyer has full information

The bargaining power of the buyer is then important to evaluate when creating the strategic position of the firm. Factors such as cost, differentiation, market niche etc. are important elements that can minimize the buyer power, and thus strengthen a company's position.

### **3.2.5 Bargaining power of suppliers**

The conditions making suppliers powerful tend to mirror those making buyers powerful. A supplier group is powerful if the following apply (Porter, 1998: p. 27-):

- It is dominated by few companies and is more concentrated than the industry it sells to
- It is not obliged to contend with other substitute products for sale to the industry
- The industry is not an important customer of the supplier group
- The suppliers' product is an important input to the buyer's business
- The supplier group's products are differentiated or it has a built up switching cost
- The supplier group poses a credible threat of forward integration
- Labor – important factor
  - Degree of organization
  - Whether the supply of scarce varieties of labor can expand

The supplier power is strong if the company is heavily dependent on their products and/or services and cannot obtain them more efficiently from another provider. The power diminishes with increased supplier pool. Thus, the amount of suppliers in the market is important to identify for a company, as well as their skills and efficiency.

### **3.2.6 Government as a force in industry competition**

Governmental de/regulation, taxation and degree of substitution will influence a company's competitiveness and future growth prospects. E.g. "Government decontrol of natural gas is quickly eliminating acetylene as a chemical feedstock." (Porter, 1998: p. 29).

Factors such as emission control and taxation on waste might challenge a company's position in the market if they do not account for political changes.

"For purposes of strategic analysis it is usually more illuminating to consider how government affects competition through the five forces than to consider it as a force and of itself. However, strategy may well involve treating government as an actor to be influenced." (Porter, 1998: p. 29)

Awareness of these five "forces" is important for companies that want to be competitive. Neglecting to recognize e.g. the potential threat of buyer power or entry barriers might prohibit the company from being competitive, or decrease their growth potential. In relation

to this thesis, Porters five forces contribute to necessary awareness of industry factors that we do not hold the time or capacity to investigate ourselves. Thus, an explanatory theoretical foundation is necessary to support our reasoning. The forces are also used to explain the barriers to enter the Northern Norwegian oil service industry, and how strategic alliances can decrease those. The theory used to support our reasoning in relation to alliances is further explained below.

### **3.3 Strategic alliances**

Das and Teng (2000) claims that alliances are formed to achieve superior resource combinations that single firms cannot obtain by themselves. In this section we will discuss the theory behind alliances as a strategic tool to improve a company's market position.

There are three strategic methods that can be considered if a company wants to grow and expand, but lack the necessary resources to do so. They will first have to consider their strategic options that can be e.g. diversification, internationalization or innovation. Then they need to consider which strategic method that will attain these objectives, i.e. organic development, mergers and acquisitions (M&A) or strategic alliances.

Organic development is a strategy pursued by building on- and developing an organization's own capabilities (Johnson et al., 2011: p. 328). However, not all organizations have the resources or time to grow organically. Thus, they might consider pursuing a merger, acquisition or an alliance, where they can more efficiently attain the resources lacking to grow. We will concentrate mainly on strategic alliances, as it is the focal point of this thesis.

Strategic alliances contrast M&A through the absence of common ownership. An acquisition involves one firm taking over the ownership ("equity") of another, hence the alternative term "takeover", while a merger is the combination of two previously separated organizations, typically as more or less equal partners (Johnson et al., 2011: p. 329).

**Definition: A strategic alliance is where two or more organizations share resources and activities to pursue a strategy** (Johnson et al., 2011: p. 338).

The members of a strategic alliance need to consider both the collective strategy<sup>10</sup> and the preservation of "self interest". The optimization of an alliance depends on the members' commitment to collaboration and efficient utilization of combined resources. Shared

---

<sup>10</sup> Collective strategy is about how the whole network of alliances of which an organization is a member competes against rival networks of alliances (Johnson et al., 2011: p. 338).



knowledge and competencies should be used to enhance their collaborate advantage<sup>11</sup>.

Strategic alliances can either be of an equity or non-equity partnership. There are several theories as to how these alliances are grouped and named. We focus on the theory carried out in “Exploring Strategy”.

In an equity alliance a new entity is created separately from the member organizations. This is done through:

- Joint ventures
- Consortium alliances

Non-equity alliances does not hold commitment through ownership, but are rather based on contracts. The common non-equity alliances are:

- Franchising
- Licensing
- Long- term subcontracting

The different alliances underlying motivation can be summarized in scale advantages, access to resources and competencies, complementary skills and capabilities, or collusion. However, no matter the motivation, the process before entering the alliance is crucial for the outcome. There need to exist co-evolution and trust between the parties, and a common goal and commitment. (Johnson et al., 2011: ch. 10.4)

Table 3.1 indicates which strategic method to favor when growth and development is crucial to the corporate strategy.

---

<sup>11</sup> Collaborate advantage is about managing alliances better than competitors.

**Table 3.3.1: Buy, ally or DIY (do-it-yourself) matrix**

	Buy	Ally	DIY
High urgency	Fast	Fast	Slow
High uncertainty	Failures potentially saleable	Share losses and retain buy option	Failures likely unsalable
Soft capabilities important	Culture and valuation problems	Culture and control problems	Cultural consistency
Highly modular capabilities	Problem of buying whole company	Ally just with relevant partners	Develop in new venture unit

*Source: Johnson et al., 2011: p. 347*

The benefits of a strategic alliance are closely connected to the risk sharing, and minimized loss if failure is inevitable. Due to the lack of financial commitment, which is present in M&As, alliances have a higher failure rate (Johnson et al., 2011: p. 346). Some firms have the necessary resources but lack the ability to utilize them. Thus, in a strategic alliance they can obtain complementary capabilities that enhance the exploitation of their operations. “[...] only if a firm cannot efficiently get needed resources from elsewhere—except by a sharing arrangement with its owners—will it be willing to form a strategic alliance.” (Das and Teng, 2000: p. 40).

Das and Teng, in their research on strategic alliances, carry out a strategic decision model based on transaction costs and resource-based rational, illustrated in table 3.2. Transaction costs “[...] refer to costs that are incurred from activities necessary for an exchange (such as writing and enforcing a contract), production costs come from coordinating activities in-house, in terms of learning, organizing, and managing production.”(Das and Teng, 2000: p. 34).

**Table 3.3.2: Ownership decisions based on transaction costs and resource-based rationales**

	Transaction Cost Rational	Resource-Based Rational
Logic behind the ownership decision	“Minimizing the sum of production and transaction costs” (Kogut, 1988: p. 320)	Maximizing firm value through gaining access to other firms’ valuable resources (Madhok, 1997; Ramanathan et al., 1997)
Merger/ Acquisition/ Internal Development	High transaction costs (i.e., high asset specificity, uncertainty, and frequency of the transactions, and high costs for controlling opportunistic behavior) and/or low production costs (i.e., coordinating and learning) (Kogut, 1988)	“A firm will favor acquisitions over joint ventures when the assets it needs are not commingled with other unneeded assets within the firm that holds them, and hence can be acquired by buying the firm or a part of it.” (Hennart & Reddy, 1997: p. 1)  “If the market is munificent or the firm is pursuing a strategy for which it has extensive resource capabilities, there is much less incentive to cooperate. Firms are more likely to continue alone.” (Eisenhardt & Schoonhoven, 1996: p. 137)
Market Transaction	Low transaction costs and/or high production costs	When “the <i>purchase of the resource’s service from the firm that possesses it</i> ” (Chi, 1994: p. 272) can be efficiently conducted through the market.
Strategic Alliance	Medium transaction and production costs, i.e., “when the transaction costs associated with an exchange are intermediate and not high enough to justify vertical integration . . .” (Gulati, 1995: p. 87)  “JVs are formed when transactional hazards suggest that internalization is efficient . . . but constraints of various kinds prohibit full internalization . . .” (Ramanathan et al., 1997: p. 57)  “The situational characteristics best suited for a joint venture [rather than a contract] are high <i>uncertainty</i> over specifying and monitoring performance, in addition to a high degree of asset specificity.” (Kogut, 1988: p. 320).	Alliances preferred “when the critical inputs required to pursue the opportunity are owned by different parties and when these inputs are inseparable from the other assets of the owner firms.” (Ramanathan et al., 1997: p. 65)  “Collaborations are a useful vehicle for enhancing knowledge in critical areas of functioning where the requisite level of knowledge is lacking and cannot be developed within an acceptable timeframe or cost.” (Madhok, 1997: p. 43)

Source: Das and Teng, 2000: p. 35

The factors prohibiting the formation of strategic alliances are, according to Das and Teng, the absence of imperfect mobility, imperfect imitability and imperfect substitutability, which are further explained in appendix 3.1.

The concept of accessing rather than acquiring knowledge is discussed in Robert M. Grant and Charles Baden-Fuller’s research paper “*A knowledge-accessing theory on strategic alliances*” (2004). They emphasize the importance of separating knowledge creation (exploration) and knowledge application (exploitation). Unlike other resources, knowledge expands rather than depreciate when applied. Thus, firms should concentrate on a few core competencies and collaborate with other firms to access additional capabilities.

It is vital in this process that the participants are able to acquire and create knowledge, rather than only access and apply. The difference between the two is the fundamental understanding of the information gained through knowledge creation, that are necessary to utilize the knowledge application. Complemented resources will strengthen an alliance, and the ability to extract the right resources and knowledge. Thus, as mentioned above, it is crucial that the alliance is built on mutual interest and co-evolution.

**Table 3.3.3: A Typology of Inter-Partner Resource Alignments**

Resource Similarity	Resource Utilization	
	Performance Resources	Nonperformance Resources
<b>Similar resources</b>	Supplementary [Similar-Performing]	Surplus [Similar-Nonperforming]
<b>Dissimilar resources</b>	Complementary [Dissimilar-Performing]	Wasteful [Dissimilar-Performing]

*Source: Das and Teng, 2000: p. 49*

Collective strength is one of the fundamental factors why strategic alliances are formed. “From a resource-based point of view, the very objective of forming alliances is to join forces with partners in order to pursue market opportunities that are otherwise beyond reach. The advantage of strategic alliances over single-firm strategies is the ability to draw upon the strengths of more than one firm, and therefore, to ensure that the alliances have better odds for success.”(Das and Teng, 2000: p. 51) The flip side of an alliance will be the threat of opportunistic behavior applied to transaction costs. “Self-interest seeking with guile [...] not

that such behavior exists, but that the possibility of opportunistic behavior is always present. [...] Opportunist behavior is directly related to asset specificity: the more specific the asset, the more likely opportunistic behavior will occur.”(Wilkinson and Kannan, 2013: p. 68-69). Thus, all parties involved needs to have a transparent agenda and mutual trust; the absence will be a dysfunctional alliance that will not work in practice.

The right resources and competences are, as mentioned, crucial for an optimized alliance strategy. In the next section we will explore more resource-based theory to enable a better understanding of how to identify own resources, and recognizing those that can be acquired in an alliance.

### 3.4 Resources and competences

When a company or a business unit within a company define and sets strategies, they need to understand how to utilize the resources and competences, which together represents the organization’s capabilities. Johnson et al. (2013: p 84) defines strategic capabilities as “the capabilities of an organization that contributes to its long term survival or competitive advantage”. Resources are “assets that organizations have or can call upon” and the competences are how “those assets are used or deployed effectively”. To further explain how the resources and competences together represent strategic capabilities we refer to the figure 2.3.1 below.

**Table 3.4.1: Strategic capabilities**

<b>Strategic capabilities</b>		
<b>Resources: “what we have”</b>		<b>Competences: “what we do well”</b>
Machines, buildings, raw materials, products, patents, data bases, computer systems	<b>Physical</b>	Ways of achieving utilization of plant, efficiency, productivity, flexibility, marketing
Balance sheet, cash flow, supplier of funds	<b>Financial</b>	Ability to raise capital, manage cash flows, debtors, creditors etc.
Managers, employees, partners, suppliers, customers	<b>Human</b>	How people gain and use experience, skills, knowledge, build relationships, motivate others and innovate

*Source: Johnson et al. 2013: p. 85*

*Note: Competencies are also known as knowledge-based resources, or intangible know-how and skills, and will therefore occasionally appear as “resources” in further discussions.*

Strategic capabilities consist of both resources and competences, as indicated in the table above. Proper resources are essential to be able to perform business activities and create products, but the way the organization use those resources are just as important. Efficient use of resources is important to fully utilize the value of those resources, regarding whether if it is physical, financial or human. “The efficiency and effectiveness of physical or financial resources, or the people in an organization, depend, not just on their existence, but on systems and processes by which they are managed, the relationships and cooperation between people, their adaptability, their innovatory capacity, the relationship with customers and suppliers and the experience and learning about what works well and what does not.” (Johnson et al. 2013: p. 84)

A single firm might encompass more than one resource or core competence. If we divide their asset resources into primary and secondary, it is important to identify which they want to contribute to an alliance (i.e. what makes them attractive in an alliance) and which they want to protect (e.g. intangible assets that are important for the company, but not necessary to optimize the alliance). The significant resource in a company can be property based, human or financial. It is rarely a company holds different resources that are equally significant. Thus, their contribution to the alliance should be clear-cut as not to expose other important capabilities unnecessary.

*“Competitive advantage is increasingly a function not of factors but the ability to create and apply knowledge and technology to industry competition.” (Porter, 1990: p. 165)*

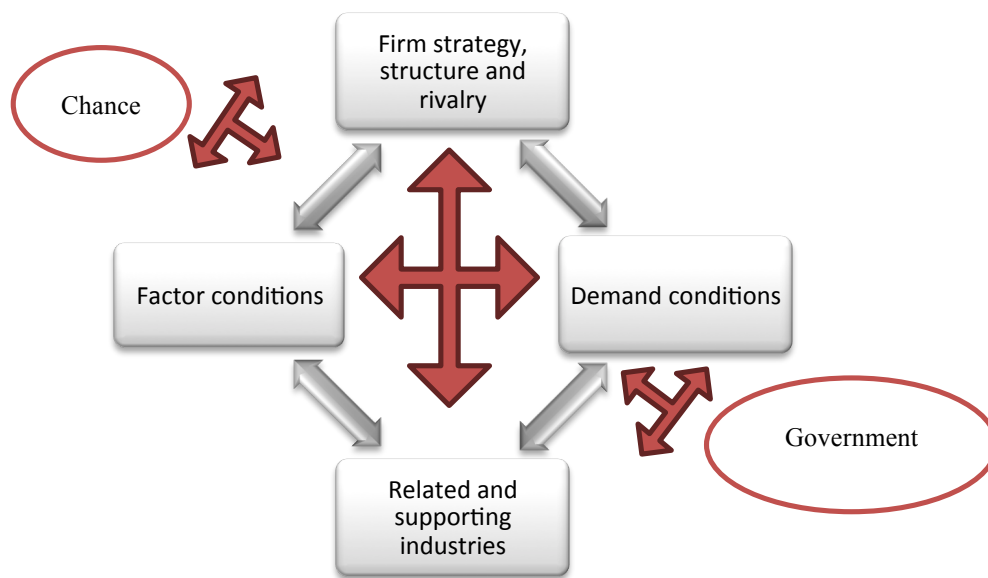
In relation to this thesis, a company’s resources and competencies appears to be a vital factor that contribute to companies position in the market/ industry. Again, awareness of what resources is actually present in the company, and competence to maximize its utilization will create an advantage for the company. Resources and competencies can be utilized and expand due to several factors. One theory supports the growth of competence is strongest within a cluster. This theory is explained below together with the National Diamond.

### 3.5 Cluster Theory and the National Diamond

We have included some theory on clusters, how they function and are created, to further support the research objective on how oil service companies can become competitive in the north through alliances.

Michael E. Porter in his book *“The competitive advantage of nations”* (1990) argues that the factors involved in the national “Diamond” illustrated in figure 3.5.1, represent the conditions and constraint from a national perspective. It is consolidated from his previous theories on five forces, value chain and competitive advantage.

**Figure 3.5.1: “The National Diamond”**



*Source: Porter, 1990: p. 127*

The diamond represents the market conditions that exist within national borders. The term comparative advantage is used to indicate a market where a nation is a net exporter, thus, have a production advantage compared to other nations. Highly adjusted conditions will make a nation better suited for production or operations than others. Porter argues that a company needs to consider not only their market segment, but also the macro- and microeconomic conditions, and supporting industries when evaluating their placement in a new area. “A national’s competitive advantage in an industry is lost if when the conditions in the “diamond” no longer support and stimulate investment and innovation to match the industry’s evolving structure.” (Porter, 1990: p. 166).

It is in the category “related and supporting industries” that the cluster becomes apparent. A cluster is a geographical area with a high concentration of related industries and companies. Clusters are known to provide higher output than those companies located outside. This seems to be due to the strong competing forces that exist within the cluster, that increase productivity, drive innovation and stimulate new business. (Porter, 1990).

Thus, the absence of clusters in Nordland, Troms and Finnmark might be prohibiting growth of local resources and competencies. However, since the industry is fairly fragmented still, there might be clusters settling in the future.

### **3.6 The chosen theories**

This theory chapter has explained:

- Generic competitive strategies
- Porters five forces
- Strategic alliances
- Resource and competencies
- Cluster theory

These theoretical frameworks are chosen because we believe they are best fitted to explain the industry picture and market mechanisms that are targeted in this master thesis. The oil service industry is extensive and complicated, and we try to simplify by the use of strong and well-developed academic theories.

The next section will comprehend the method we have used going forward with this thesis, and how we have structured our interviews and interview selection in the investigation of strategic alliances in Northern Norwegian oil service industry.

## **4. Method**

This section will provide an overview of the research design and method. Further, we will discuss the relevance between theory and research question. The choice of data collection will also be discussed, together with a broad overview of the process that entails this master thesis.



## 4.1 Qualitative data collection

We have chosen to conduct our data collection through a qualitative study. This implies that our primary data is collected through personal in-depth interviews. This approach gives us an opportunity to explore deeper into our candidates' opinions and experience, than would be possible through a quantitative approach.

There are different ways of conducting a qualitative study. We have collected our primary data through interviews, and secondary data is academic papers and books, as well as articles and reports. The different forms of interviews and structures that can be used are illustrated in figure 4.1.1.

**Table 4.1.1: Interview structures**

Level of structure	Type of interview
Highly structured	Market research interview
Semi-structured	Guided open interview
Unstructured	Ethnography

*Source: Easterby-Smith et al., 2012: p.128*

According to Easterby-Smith et al. (2012: p. 132) semi-structured and unstructured interviews are appropriate methods when:

1. It is necessary to understand the constructs that the respondent uses as a basis for his or her opinions and beliefs about a particular matter or situation.
2. The aim of the interview is to develop an understanding of the respondent's "world" so that the researcher might influence it, either independently or collaboratively as in the case with action research.
3. The step-by-step logic of a situation is not clear; the subject matter is highly confidential or commercially sensitive; and there are issues about which the interviewee may be reluctant to be truthful other than confidentially in a one-to-one situation.

Our interviews are based on both the unstructured and semi-structured concept. We have neglected the highly structured format due to the absence of relevance in our research. A structured format would not allow us to seek out individual knowledge and perception; thus,

preventing us from achieving the required information to our case. The interview guide that we have used as a template is attached in appendix 4.1.

## 4.2 Report structure

There are two main epistemological approaches regarding how to inquire the physical and social world. Positivism<sup>12</sup> and Social Constructionism<sup>13</sup> differ in their perception of how social science research should be conducted, as illustrated in table 4.2.1.

**Table 4.2.1: Positivism versus relativism**

	<b>Positivism</b>	<b>Social Constructionism</b>
<b>The observer</b>	Must be independent	Is part of what is being observed
<b>Human interests</b>	Should be irrelevant	Are the main drivers of science
<b>Explanations</b>	Must demonstrate causality	Aim to increase general understanding of the situation
<b>Research progress through</b>	Hypothesis and deductions	Gathering rich data from which ideas are induced
<b>Concepts</b>	Need to be defined so that they can be measured	Should incorporate stakeholder perspectives
<b>Units of analysis</b>	Should be reduced to simplest terms	May include the complexity of “whole” situations
<b>Generalization through</b>	Statistical probability	Theoretical abstraction
<b>Sampling requires</b>	Large numbers selected randomly	Small numbers of cases chosen for specific reasons

*Source: Easterby-Smith et al. 2012: p. 24*

Both approaches can be considered stereotypical, as no scientist follow one direction completely. There will always exist deviations from the extremes, and areas that over-shadow

---

<sup>12</sup> Positivism: the key idea of positivism is that the social world exists externally, and that its properties should be measured through objective methods. (Easterby-Smith et al., 2012: p. 344)

<sup>13</sup> Social constructionism: the idea that “reality” is determined by people rather than by objective and external factors, and hence it is most important to appreciate the way people make sense of their experience. (Easterby-Smith et al., 2012: p. 345)

each other. The greatest difference is the positivist’s observation of an external social world, and the social constructionist’s observation of reality as man-made.

In our analysis we follow a social constructionist approach. Our research is based on qualitative data through active interaction, thus, each case need to be evaluated differently. This is due to the interview objects having both similar and dissimilar experiences and knowledge, and is located in different and similar areas of their respective fields.

**4.3 Content analysis and grounded analysis**


There are different methods to analyze data, in natural language analysis there are two main approaches, content- and grounded analysis. Easterby-Smith et al. (2012) explains content analysis as interrogating the data to find content and ideas decided upon in advance.

Grounded analysis reasons that “researchers tend to let the data speak for itself and although they are still employing a process, they allow for more intuition to guide them in the development of their understandings of the data.” (Easterby-Smith et al., 2012: p. 163) The latter approach is more holistic and provides a closer affiliation to the data. Also, it usually includes other aspects such as cultural and historical dimensions.

Regardless of the method chosen, it is important that the data provide the basis for the research conclusion, and that the researcher has an unbiased approached in their analysis.

The different methods are illustrated in table 4.3.1.

**Table 4.3.1: Content versus grounded analysis**

<b>Content analysis</b>		<b>Grounded analysis</b>
Searching for content (prior hypothesis)		Understanding of context and time
Casually linked variables		Holistic associations
Objective subjective		Faithful to views of respondents
More deductive		More inductive
Aims for clarity and unity		Preserves ambiguity and contradiction

*Source: Easterby-Smith et al., 2012: p. 163*

This research paper is conducted using grounded theory. Grounded theory allows us to rely more on our interviewees’ knowledge and perception of the oil service industry. Also, the

topic “strategic alliances” is not static, thus, ambiguities and contradictions needs to be a part of the evaluation process.

#### **4.3.1 Grounded analysis**

Glaser and Strauss (1967) formulated grounded theory after identifying that “the key task of the researcher as being to develop theory through “comparative method”, which means looking at the same event or process in different settings or situations.” (Easterby-Smith et al., 2012: p. 58)

The grounded analysis provides a more open methodology to the data collected, than would be possible using content analysis. The approach presumes that in-depth interviews have been conducted in the data collection, a criteria we satisfy through our interviews with eight different companies, whereas two of them were represented with two managers. The interviewees are introduced in the next sub-chapter.

Easterby-Smith et al. (2012) suggest seven main stages to follow (The stages are explained further in appendix 4.2):

1. Familiarization
2. Reflection
3. Conceptualization
4. Cataloguing concepts
5. Re-coding
6. Linking
7. Re-evaluation

In our sampling process we have used Axial and Selective methods, Open have been eliminated due to the irrelevance of our study.

Axial refer to variational and relational sampling. The objective is to collect data from a focused perspective that highlights the objective of the research. This method has been used in interviews with different companies and organizations that are stakeholders in the oil service sector.

Selective method is to discriminate the sample, and focus on a very specific target that will provide insight into the theme of the core objective. We have used this method when conducting expert interviews with Kjell Are Vassmyr from Aker Solutions and Kjell Giæver

at Petro Arctic. They have provided an overview of the sector, operational aspects and rationales relating to strategic alliances, Mergers and Acquisitions.

Archival research is a collection and analysis of public documents relating mainly to organizational or governmental strategies (Easterby-Smith et al., 2012: p. 339). We have used archival research when we have collected information concerning the oil and gas and oil service industry in Northern Norway.

#### **4.4 The interviews**

We have designed our research method with regard to the objectives we had with the direction of this master thesis. The oil service industry consists of several segments, markets and actors, and we wanted our discussion to cover multiple angles. We did industry research, discussed strategies on how to approach the data collection process, and ended up with a short list of companies. Due to the time constraint we decided to focus on one segment within oil service. Thus, all of our oil service interviewees operate in the M&M segment, which is also the most exposed segment in Northern Norway today. The interviews provided us valuable insight that we feel is transferable to other segments as well, since the contract requirements and the structure of the business is very similar across the industry. Maybe the strongest association can be made in labor-intense operations.

Initially we thought the access to relevant interviewees would be challenging. We knew that most general managers and management leaders are busy, and do not prioritize participating in student's assignments. To our surprise, we managed to contact the right people, introduce our topic and get in touch with the relevant leaders in all the organizations we approached. With Aibel and Aker Solutions we had contacts that referred us, and made interviewing these organizations possible. The additional interviews we approached without any previous relations.

We approached the oil and gas companies, Statoil and Eni Norge, which initiate activity within oil service and supply the contracts, since they have status as operators in the Barents Sea. These companies could provide us information regarding tender requirements, and resources and competence needed when competing for tenders. Also, how alliances with other companies, especially local, could create a competitive advantage.

Then we interviewed two of the largest oil service companies in Norway, Aker Solutions and Aibel. Aker Solutions provided us with a broad and thorough introduction to the oil service development in Northern Norway, and also explained generally about the importance of

alliances. Aibel has the M&M contract on Melkøya; we interviewed the project manager and were able to deepen our understanding on the project's resource demand, the resource constraint in Hammerfest and the meaning of alliances to get the job done.

Then, we approached and interviewed the smaller companies that had alliances with the major contractors already interviewed, Hammerfest Industriservice and Helgeland V&M. These interviewees provided us their honest and open opinion about their ability to cooperate with a large operator and the importance of alliances to access the M&M market. They discussed all their alliances and potential alliances, which gave us a detailed understanding of the way an alliance can form a foundation for pooling up resources and create cooperation with companies that are complementary.

We also approached the small company Invis. Invis provides industrial visualization services and recently formed an alliance with a world-leading operator in their segment. We wanted to understand their perspective and ambitions going forward with an alliance, without a long history with an ally. We could then also investigate the process of establishing an alliance technically, since the general manager and owner of Invis was in the front seat initiating and negotiating the alliance agreement.

Additionally, we felt the need to interview an expert on the topic, who is not an insider. We approached and interviewed Petro Arctic. This interview gave us an objective introduction to the oil service industry's development in the north, and how alliances can be key to penetrate the market.

We have conducted eight interviews, with duration of 35- 120 minutes. This has resulted in 82 transcribed pages.

Below, we briefly present our interviewees and the companies they represent. The below information is based on our interviews and the respective company's web site:

### **Statoil**

Statoil is a Norwegian E&P company, the biggest offshore field operator in the world and the largest holder of production licenses on the NCS. The company produced more than 2 million boe of oil and natural gas in 2012. Statoil is actively working to develop Arctic resources and says they are strongly committed to regional development of Northern Norway, including the competence and resources needed to meet future requirements.

We interviewed Mr. Knut Harald Nygård, Vice president, DPN ON The Northern Area Initiative

### **Eni Norge**

Eni Norge is part of the major vertically integrated Italian oil and gas company Eni S.p.A. Eni Norge has a strong focus on the Barents Sea, and will be the first license operator of an offshore production rig in the Norwegian Barents Sea with the Goliat field. In 2012, Eni's net production on the NCS was 47 million boe, mainly through partner licenses on fields like Åsgård and Ekofisk.

We interviewed Mr. Bjørn Bjørgve, industrial coordinator and public relations.

### **Aibel**

Aibel is one of the major suppliers of M&M services on the NCS and onshore oil and gas terminals. Aibel also provides extensive engineering and construction services within the oil and gas industry.

We interviewed Mr. Jan-Eirik Karlsen, project manager for the M&M contract at Melkøya LNG.

### **Aker Solutions**

Aker Solutions is a global provider of products, systems and services to the oil and gas industry. The company business segments are; drilling technologies; engineering; maintenance, modifications and operations; subsea technologies and services; subsurface and well services; and well-stream processing.

We interviewed Mr. Kjell Are Vassmyr, senior vice president, regional manager Northern Norway.

### **Hammerfest Industriservice**

Hammerfest Industriservice is a traditional mechanical workshop in Hammerfest. The company is now positioned as the only mechanical workshop providing all kinds of steel fabrication services for the oil and gas industry in Hammerfest. The owners are Langset AS, ProBarents and Aibel.

We interviewed Mr. Bengt Holmgren, general manager.

## **Helgeland V&M,**

Helgeland V&M is an alliance of small local industrial operators, established in 2008 and with its base in Sandnessjøen. The company is currently holding the maintenance responsibility of the M&M contract with BP on the Skarv FPSO at the Skarv field in the Norwegian Sea. Aker Solution is responsible for the modification part of the contract, and is thus an alliance partner with Helgeland V&M. BP divided the M&M contract in two parts to allow smaller companies participate in the tender, creating local content.

We interviewed Mr. Øystein Barth-Heyerdahl, the general manager, and Mr. Ivar Larssen, a hired-in Aker Solution engineer who also participated in the Helgeland V&M establishment.

## **Invis**

Invis is a small company of four engineers providing high-tech services within 3D scanning and industrial visualization. The company is based in Glomfjord and position itself as a supplier towards the oil and gas industry with an increased resource base through NB Invis, a joint venture with NB Surveys, a Scottish based major within the same segment as Invis.

We interviewed Mr. Bjørn-Wiggo Eriksen, owner and general manager

## **Petro Arctic**

Petro Arctic is a supplier network to the oil and gas activities in Northern Norway. The organization shall facilitate oil and gas development and create opportunities toward the oil and gas industry and advice for our members. Petro Arctic is a recognized organization in the oil service industry in Northern Norway, providing expertise and knowledge.

We interviewed Mr. Kjell Giæver, general manager and senior advisor.

## **4.5 Ethical considerations**

It has been important to us that the research has been conducted and analyzed in an ethically sound way. We have followed the key principles in research ethics when they were applicable.



**Table 4.5.1: Key principles in research ethics**

1	Ensuring that no harm comes to participants
2	Respecting the dignity of research participants
3	Ensuring a fully informed consent
4	Protecting the privacy of research subjects
5	Ensuring the confidentiality of research data
6	Protecting the anonymity of individuals or organizations
7	Avoiding deceptions about the nature or aims of the research
8	Declaration of affiliations, funding sources and conflict of interest
9	Honesty and transparency in communicating about the research
10	Avoidance of any misleading or false reporting of research findings

*Source: Easterby-Smith et al., 2012: p. 95*

We have been very open and honest regarding the nature of our research. All the participants was informed before the interview was conducted that they would get the opportunity to validate and consent to the data we included in this thesis before we would publish it. This provided a trusting atmosphere, and the interviewees could provide valuable insight, knowing that they had the opportunity to keep some of the interview confidential or anonyms if they eventually would say something they where not comfortable putting their name or organization to.

We also taped all the interviews and then transcribed them, to assure the accuracy, and to have more focus on the interview and interviewee than writing the outcome.

This master thesis is not funded or supported by any organizations or individuals, thus, there has been no concern regarding declaration of affiliations or conflict of interest. The only objective is to investigate the actual picture of the Northern Norwegian oil service industry, and how companies can grow and become more competitive.

#### **4.6 Validity and reliability of our research**

Validity refers to the extent to which measures and research findings provide accurate representation of the things they are supposed to be describing (Easterby-Smith et al., 2012: p. 347). Validity, in the case of social constructionism, is demonstrated through authenticity,

plausibility and criticality. “*Authenticity* involves convincing the reader that the researcher has a deep understanding of what was taking place in the organization; *plausibility* requires the researcher to link into some ongoing concern/ interest among other researchers; and *criticality* encourages readers to question their taken-for-granted assumptions, and thus offer something genuinely novel.” (Easterby-Smith et al., 2012: p. 53).

We have conducted and analyzed our data in an unbiased matter. We have also highlighted what has been the opinion of an individual person or organization, as not to confuse it with academic theories that have also been supplemented throughout the thesis.

Strategic alliances are also a very dynamic topic that needs to be analyzed based on the given setting and motivation, thus preventing us to give any definite solutions, but rather guidelines as to how other similar situations have played out.

The reliability of the research is “the consistency of measurement in a composite variable formed by combining scores on a set of items.” (Easterby-Smith et al., 2012: p. 345) From a constructionist point of view this translate into the degree that other observers will reach the same result. The reliability of this thesis will then depend on the objectives of the reader, and in which situations they want to connect our findings to their own situation and/ or experience.

#### **4.7 Strengths and limitations**

The strength in our research is that our topic is very simple, and understood by all our sources. Thus, it has not required us to thoroughly explain what we type of information we have been seeking, which could have created some confusion or misunderstandings. Almost all of our interviewees have also been in a situation where strategic alliances have been discussed, analyzed and implemented, with both successful and unsuccessful outcomes. This has provided the thesis with data that reflect several aspects of the topic.

Limitation is clearly our lack of practical experience, which makes us rely on an academic framework. Also, we have a time and fund constraint, which prohibit us from travelling to visit more companies, and conducting more interviews or make observations. We have tried to supplement our lack in data with secondary sources and theoretical frameworks. However, we do recognize that actual experiences and insight will be more valuable in this thesis, due to the lack of research on our thesis industry research.

We have also experienced some limitations as to how much we can generalize the findings, as we have mentioned, the success of strategic alliances depend more on the participants than the

theory. However, we have tried to identify success- and fail factors, with the aim of identifying a simpler and more cost saving solution to companies wanting to grow through alliances.

#### **4.8 Collecting the data**

The research process for this thesis started with database searches and thorough reading of secondary sources. Our impression was that the oil service industry in Northern Norway, the counties Nordland, Troms and Finnmark, did not appear satisfied with the small scale ripple effects, which was their only benefit to the newly discovered oil fields in the Norwegian- and Barents Sea.

Our perception was that there was mainly a shortage in skilled labor, long distances between clusters/ industrial areas and poorly developed infrastructure and absence of competence that prevented utilization of local participation. However, after broadening our interview guide to reflect this topics comprehension, we discovered that the bottleneck was not labor, and nor was the present activity at the level we believed.

There are several factors that comprehend the barriers to participate in the oil service industry as a small local contender, but the major players also have areas where their resources are cut short. With this in mind, we formulated this thesis' research topic:

*Advantages, opportunities and challenges achieved through strategic alliances positioned for the oil service industry in Northern Norway*

To elaborate on the research topic we decided to conduct interviews that reflected what we believed would support a thorough investigation. The interviews were conducted face-to-face, except with Aker Solutions and Invis, which were conducted over the phone. We followed a template that was adjusted to the different interviewees, and covered the objective and motivation for the interview. Thus, after an interview was conducted, we would transcribe it and then discuss the relevance in relation to our research topic. In relation to grounded analysis this is the first two stages; familiarization and reflection. This allowed us to see shortcomings in our data collections, so that these could be brought up in the next interview. Hence, allowing us to gather information covering more surface than would be possible following another methodological approach, which also took us to the conceptualization stage. We understood more the complexity of our topic, and the mechanisms contributing to how alliance functions.

We gathered new data until reaching saturation (no new information appeared) in order to fully explain and understand the role of strategic alliances in the oil service industry, and then we started sorting out our findings. This is the fourth stage, cataloguing concept, where we transfer the concepts into the database. It became apparent to us going through the data that there were different opinions, but that those had some similarities and connected to each other. Also, that all levels (oil companies, major oil service actors and small oil service actors) had much of the same conclusions, but with different perspectives. Thus, we decided to divide our data into categories where these different perspectives were highlighted. This is the re-coding stage. We shorten the list of categories to make the thesis more structured, and easy to read and follow. In this process we tried to find correlating elements that would support each other under these final categories. The end result is summarized in the table 4.8.1 below:

**Table 4.8.1: Findings categorization**

<b>Barriers to enter the oil service industry in Northern Norway</b>	Illustrating barriers faced by small and new operators
<b>Resources required to operate in the Northern Norwegian oil service industry</b>	Divided into financial, human and physical resources. Explains what exists in Northern Norway, and what needs to be imported from Southern Norway.
<b>Local competences present and absent in the industry</b>	The different opinions and perceptions of local competence. Highlighting their strengths and shortcomings in relation to the oil service industry in Northern Norway.
<b>How strategic alliances can decrease barriers and restriction/limitation of resources and competencies</b>	Strategic alliances are divided into three categories: Small actors together creating strength through an alliance. The perspective of a small actor in alliance with a major. The perspective of a large actor in alliance with a small.
<b>Activity in the Norwegian and Barents Sea</b>	The past, present and future activity illustrated through actual and forecasted numbers/ opinions

These categories are discussed in depth in the next chapter. It is in the discussion that the theoretical codes becomes clear, and is linked together with the findings in chapter 6. The quotes used are not chronologically introduced, and might have been answered in relation to another topic than where it is being used. However, the essence and quote itself is fully maintained and within the same framework as the interviewee intended. Since all our interviews were conducted in Norwegian, we are responsible for the translations. We have tried to translate as direct as possible, and have distributed the quotes used to the interviewees

and gotten their approval and/or corrections. Thus, all parties involved have approved our empirical findings.

The empirical findings will now be introduced, following the same categorical structure as introduced above.

## **5. Empirical findings**

Norway has an advanced and well-developed oil service industry, which is recognized as of significance globally. Since oil and gas developments are a relatively new phenomenon in northern parts of the NCS, the opportunities within oil service have also been quite limited, and the barriers to enter extensive. Petro Arctic puts it like this:

“I believe the present projects are doable without local participation, but that does not mean that the local actors are unimportant. In a long-term perspective, the oil and gas industry is dependent on local business to maintain the “Norwegian component” in the industry. To do this, it is important to include and develop the oil service industry throughout Norway. If not, we can lose our world-leading position.”

Throughout our research we have identified five major topics constituting the areas that provoke ambiguities for the oil service industry in Northern Norway. These topics are:

- Entry barriers for new and small companies
- Resources required to operate
- Local competences
- How alliances can contribute to increased competitiveness
- Activity in the Norwegian and Barents Sea

The sub-chapter that explains activity is mainly included to illuminate how the activity level contributes to shape the industry picture. We will discuss the different topics based on our data collection, both in the view of opportunities and challenges. We have also included the applicable factors needed to create an efficient service industry in the north. The following chapter will analyze the empirical findings and provide possible solutions to the identified problem areas.

## **5.1 Barriers to enter the oil service industry**

The oil service industry in Northern Norway consists mainly of major national or multinational suppliers, such as Aibel, Aker Solutions, Reinertsen, etc. These are established operators in the industry and have over time developed a solid experience foundation and professional reputation, which gives them a competitive advantage toward smaller and newer players. The barriers to enter the service industry in Northern Norway concern mainly the local business that targets oil and gas projects in the Norwegian Sea and the Barents Sea.

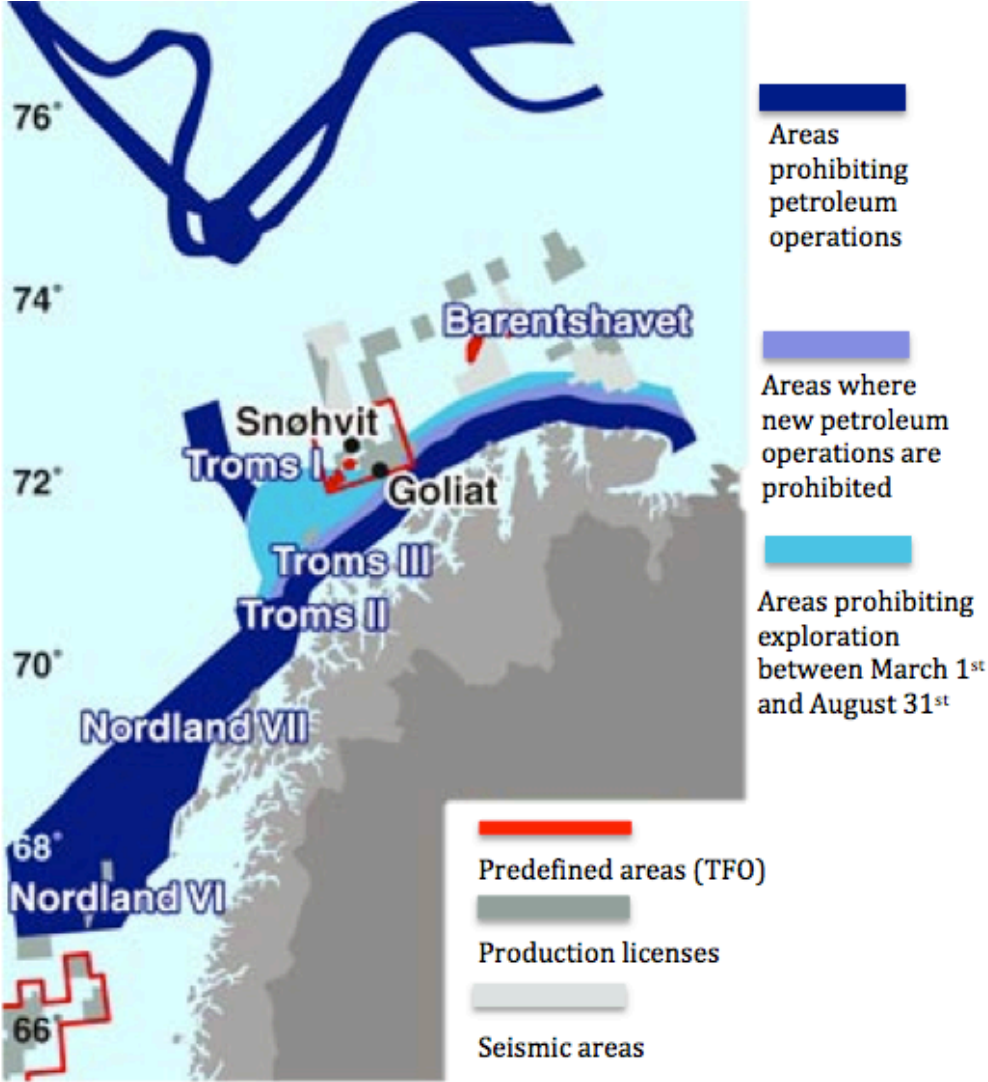
The process to become an oil service provider requires some precertification processes and approval within the E&P companies' supplier database before they qualify as an applicable contract contender. It is a resource consuming process, and not for anyone to partake in. Some of the necessities include: financial resources, skilled labor, capacity to take on large deliveries and the ability to deliver "on time, on budget". If a company can manage these obstacles, they still need to be competitive on price, in an industry dominated by major internationals.

Activity is also a factor that needs to be present. There are discussions regarding pollution and emissions in relation to the industry. The oil and gas industry is also at present under pressure to decrease costs, as the expenses have inflated too much the last decade. However, "A certainty is that the global community's need for energy, raw materials, food and water will increase in the decades to come. Regions with excess resources in these areas will have a long-term market for their basic commodities." (Slottfeldt-Ellingsen and Sandvik, 2009: p. 6) This implies that Norway will need to explore the resources they have at their disposal.

Northern Norway is suffering from migration and urbanization, both from the northern areas to southern and smaller to larger towns within the region, and need more industries to develop in order to attract skilled labor and prevent further migration. Natural resource operations are perceived as the most important source of business development in Northern Norway. Industries such as fisheries and tourism are expected to increase in revenue; however, they do not generate significant growth in the region due to saturation.

The illustration below shows the exploration opportunities that are applicable. However, due to governmental restrictions in relation to the risk of oil spills and other environmental as well as social concerns, areas close to the shore are at the moment limited for activity.

**Figure 5.1.1: Exploration areas in the Barents Sea**



*Source: Regjeringen.no*

**5.1.1 Barriers pertaining to new and small actors**

The oil and gas industry has very high contractual requirements and quality standards. The companies operating in- or toward the industry have strong terms and conditions that must be integrated in their operating systems for them to be a viable candidate. The certifying process, according to both Helgeland V&M and Hammerfest Industriservice, requires extensive resources allocated to build up the required systems. Nevertheless, the Levert 2012 report suggests that the entry barriers for northern oil service operators in 2012 decreased due to better knowledge regarding the entry phase and the industry requirements. The Levert 2012 report states:

“This year’s result compared with previous years is very positive, and the outlooks predict further growth in 2013. Surveys show that fewer Northern Norwegian supply-actors experience the oil and gas industry’s strong requests for approval, certification and documentations as large barriers. This suggests that more companies have gained industry experience, and implemented initiatives to qualify, which again makes them better equipped to compete on contracts on existing and new fields.”

Hammerfest Industriservice has through their strategic alliance with Aibel gained an M&M contract at Melkøya. They are supplying through Aibel. In the interview, they stated that they would never have been in a competing position without their alliance with Aibel, which have helped them built up their quality assurance standards, or their alliance with Langset, which have given them access to financial resources, i.e. equity. Still, as a small company they have experienced how difficult it is to compete in the oil service industry. They provide an example:

“We were very fortunate and entered as a sub-supplier to Statoil during the commissioning phase at Melkøya. It is easier to become an approved supplier and gain a position at this stage than in the operating phase. Statoil has a very rigid procurement system with extensive framework agreements on pretty much every delivery during the operating phase. In this phase, entering as a supplier is close to impossible. Since we entered during commissioning we are an approved supplier and is now included in Statoil’s procurement system. If they wish to use us directly, they can simply send a purchase order.”

Another company that expressed frustrations regarding the extensive and complex system of framework agreements is Invis. Invis is specialized in advanced 3D scanning and visualization, a product they believe are cost efficient and shortens lead-time for the project development and operations. They argue that individuals employed in E&P companies complain that the 3D scanning and visualization services delivered from contractors are insufficient. However, the framework agreements prevent independent operators to deliver specific tasks, even though they claim to do the job at a significant lower cost and better accuracy.

“This generates higher costs in the industry, since companies that are more competitive on price, such as us, do not necessary come in a position to compete.”



Invis points out that it is obscured to pay more for in-house services if these could be outsourced at lower cost. This is a highly applicable concern in times where E&P companies' operating expenditures are under huge pressure.

Further, it is also important to highlight the need for new and small actors to have a positive reputation. Invis is a relatively new actor and have yet to establish a solid industry reputation. The customers, regardless of being an E&P company or major oil service actor, are dependent on a stable and reliant business flow. Once the supplier is certified and becomes approved in their customer's database, they need to have something that will make them the preferred company of choice. It has been implied through different interviews that the profit margin increases the more direct the operations are toward the oil and gas companies. Thus, several companies have a desire to become direct suppliers. This difficulty is also mentioned in the Levert 2012 report:

“Regardless of a strong inclination from several companies wanting to deliver directly to the oil and gas companies, the actual numbers suggest that the percentage of companies operating directly with the oil companies is declining. This is very apparent in Nordland County, where deliveries from sub-suppliers increase from 29.8% in 2011 to 38.0% in 2012. Several service providers points to difficulties in reaching the right people (buyers) in the oil companies, that they have a habit of using the same suppliers, and that the contract construction prevents small companies from participating in tenders for larger contracts.”

Table 5.1.1.1 illustrates Northern Norway's oil service industry divided in regions and their proportion of turnover to different customers:

**Table 5.1.1.1: Supply matrix**

<b>Supplier level</b>			
<b>Deliveries to:</b>	<b>Oil companies</b>	<b>Main contractor</b>	<b>Sub supplier</b>
<b>Nordland</b>	30.2%	31.8%	38.0%
<b>Troms</b>	36.4%	36.4%	27.3%
<b>Finnmark</b>	27.4%	35.0%	37.6%
<b>Northern Norway</b>	<b>30.2%</b>	<b>33.6%</b>	<b>36.2%</b>

Source: Levert 2012, 2013: p. 8

Thus, regardless of being an approved supplier integrated in the supplier database, most local operators still appear to miss something that prevents them from being potentials for the large contracts. The size in both financial and human resources are factors that if absent, will prohibit companies' competitive positions. However, the reputation and security risk will also be factors affecting a company's competitiveness. This is a problem area for new actors that need to prove they can manage a contract, but due to lack of experience appear to lose in bids. Invis gives an example of how reputation and relationship to customers strengthen a firm's position:

“We provided an offer recently, but lost in favor of another company with closer connections to the customer. The oil and gas industry is huge in Norway, but there are few operators and often close relationships among them, which creates entry barriers for a new operator like Invis. [...] This is unfortunate for us, but it also boosts the prices of our services due to lack of real competition.”

Statoil supports this frustration when they comment on how they chose suppliers.

“Reputation is important when Statoil chose suppliers. We do not necessary favor Aibel, but trust, in that the supplier can deliver superior quality on time and budget, are an important part of the evaluation. If they have delivered an excellent product every time, they will score high on technical capability in a solution based matrix. Reputation will then be an important factor when we decide who gets a contract.”

This implies that a new contender does need an alliance with an established actor to enter the market and accumulate experience. To summarize the above statements, entry requirements for small and new actors in the oil service industry are:

- Financial strength to build up the required quality systems, which again will assure the right certification, and entrance to supplier databases.
- Human and physical resources to produce and deliver in accordance to the contract specifications.
- A reputation that will ensure the customers that they will get their product and/or service “on time on budget”.

A last factor that is an important success factor for a new competitor is the present activity. However, this does not only pertain to new and small actors, but the industry as a whole. Hammerfest Industriservice explained that when activity was high, they would get a lot of

work from Aibel. But at present, the activity level is so low that Aibel uses explanations such as “incompetent” and “inexperienced” to justify not providing Hammerfest Industriservice with the work they should be assigned according to their contract. Thus, again amplifying the justification as to why companies wish to be direct suppliers, and not sub-suppliers. Aibel also discussed this perspective:

“If a company is too small, they will not get a general agreement from the oil and gas companies. They have to differentiate and offer a unique product and have a strong focus on what they do best and further develop that, preferable in cooperation with a bigger actor.”

Size has been discussed through resources and knowledge within the company. It has become apparent to us through our interviews that “bigger is better” in the oil service industry. This provides a clear disadvantage for small and new actors, as they will most likely lack the size. Thus, this industry might not be for everyone. Petro Arctic emphasize that a company that performs well in traditional industries should keep their focus within that industry. A lot of costly quality standards, rigid process of becoming approved supplier and tight margins are factors that limit the potential in oil service, but that successful candidates might experience extensive growth.

“What is positive in the oil service industry are the very long contracts and potential extra orders. The contract holder usually gets the extra jobs that need to be done in addition to the main contract. For example, Helgeland V&M made a 100 million NOK extra in additional orders in the beginning of the contract period.”

A factor however, that gives local actors an advantage is the requirement of local content that provides local ripple effects from the E&P activity. This also enhances major companies’ incentives to establish alliances with local actors, thus giving them the opportunity to gain industry reputation. Aker Solutions explains the necessity of local content in tender bids:

“The oil and gas companies often encourage us to utilize local companies. However, both legal considerations related to competition as well as cost, quality and competence requirements must be taken into account.”

The boundaries pertaining to small and new actors are mainly concerned with lack of size, resources and reputation. Knowledge of how to gain these elements is vital if a company wants to succeed in the oil and gas industry. The next section will elaborate further on resources, as

its importance is not only limited to small and inexperienced companies, but also everyone present in the industry.

## **5.2 Resources required to operate**

There are three main fundamental resource categories that exist within a company, financial, physical and human. They can be addressed as the three pillars supporting a company, as the lack of any of the three will minimize the chances of success. If you go back to chapter 3.4 there will be more theory capturing the essence of resources. Keep in mind that different markets and segments require different composition of resources. A shipyard will have more resources allocated to human and physical, while a bank will depend more on financial resources. We will discuss how the presence or absence of these resources contributes to barricade or strengthen a firm's position in the oil service segment, market or industry.

### **5.2.1 Financial Resources**

We highlighted the financial resources that were necessary to enter the industry in the previous section. But, financial strength is not limited to entering the market. A financially strong foundation that can support a company's activities is important in every industry. Within oil service, we have seen that there have been extensive investment requirements before a company could become a potential service provider. Risk is an element that is associated with financial terms. Thus, a firm will always seek to minimize risk, as it will decrease their reliance on financial assurance. The risks associated with oil service operations are extensive, as it is an industry based on oil and gas extraction from geographical challenging areas. Small deflations from the planned route could have fatal implications. We will start by elaborating on the initial costs of entering the market, and what financial resources are needed to grow as an organization.

Helgeland V&M is a strategic alliance of seven companies that does not have their traditional operations in oil service. They also have an alliance with Aker Solutions, which extends their knowledge within the industry. Helgeland V&M was established to target maintenance at BP Norge's Skarv FPSO<sup>14</sup>. They comment on some of the costs associated with targeting the oil service industry and where these costs are allocated:

---

<sup>14</sup> The Skarv floating production storage and offloading (FPSO) vessel is the biggest ever built for deployment on the Norwegian Continental Shelf (NCS). It will serve the Skarv and Idun fields, located just below the Arctic circle in the northern Norwegian Sea (akersolutions.com)

“It cost money to build a system and get certified. However, to get certified there are other systems around that also need to be established [reporting, control, audit]. It is the control of these systems that are expensive. The resources required for creating and maintaining those are extensive. Procedures are also of importance, as it is on everything. It is time consuming and cost intensive. A small actor might not have the dedicated resources.”

Thus, it is not the certification itself that is the main financial issue, but rather the investment required to satisfy the demands for the certification. Hammerfest Industriservice underlines the extensive investments as they have invested heavily in their reorganization process. They mention a specific amount directly allocated to target the oil service industry:

“The restructuring process, which we started in 2009, has probably cost us between NOK 10-12 million, just to be able to deliver to the industry. We are far from done.”

Keep in mind, this company’s turnover were around 24-26 million NOK in 2010 and 2011, thus, 10-12 million can be considered a significant investment in organizational restructuring. It can be subtracted that, if a company is not aware of the required investments needed to position themselves toward oil service and do not have the capital required, they will fail. Aibel further explains and supports that the transformation process for smaller operators might be tough and costly; they use the example of their alliance partner, Hammerfest Industriservice:

“Hammerfest Industriservice was, before they started delivering to the oil and gas industry, a small ship yard and performed maintenance services on small vessels and boats. When Hammerfest Industriservice started to deliver to Aibel, they had to adapt into much higher quality standards compared to what they were used to before. For them, the transformation process was hard and difficult. Another challenge for them was the price level. The average income per hour of work is lower in oil service compared to what the shipping industry paid. These factors probably limit the attractiveness of the oil service industry. It is hard to earn the fast cash within oil service.”

This implies that the added investments entering oil service, is not supported by higher earnings from the industry. Thus, the incentives will be the added volume that the industry offers. Again, activity is a very apparent condition for operation. Financial strength will then be important to stay in business when activity deteriorates. As previously mentioned, the

world's energy consumption is not expected to diminish, but rather excel as the world population grows. Hence, the Norwegian Sea and the Barents Sea should experience increased future activity, as the demand following this logic, will not diminish. Financial stability is then not just a question regarding entering a flourishing market, but also to be able to stay in the market when activity is low. This will be a challenge for small suppliers, which not necessarily are well diversified in markets or geographically.

Aibel further comments on the difficulties pertaining to small actors, and the strength in being a major established actor:

“If it is given that our competitors have the same foundation, such as resources, quality and price, we need to offer the lowest price to win contracts. Smaller northern actors will not have the same foundation, thus it will be impossible for them to compete on the same contracts. E.g. the M&M contract Aibel has on Melkøya, or the Goliat M&M contract. The financial resources required are too extensive for local actors, and the needed ability to mobilize enough manpower in a relatively short lead-time necessitates a large organization.”

Thus, if a company wants to grow as an oil service provider, and acquire larger contracts, they are dependent on a certain size. The size will be reflected in total resources, financial, human and physical. Growth in both physical and human resources is dependent on financial resources, and financial resources are generated by the other two. Hence, a company's earnings have to be reinvested into the company for it to grow organically, or new capital needs to be taken into the company. The latter will usually indicate that the management will lose some of its control to new investors. This might prevent company's to seek a growth strategy, but rather use time to grow organically. However, as Aibel gave an example of, this will also be a risk for the company operating in an industry where size matters:

“A company I knew called Vacuumkjempen invested in an expensive vacuum truck a couple of years ago. The guy who owned and administrated the company came to me, frustrated, and desperate for work. They had worked for Statoil on the Melkøya plant, invested in new equipment, and then Statoil terminated the contract because they needed a tender contract with a larger company [due to the size of the contract]. SAR, a much bigger company, won the tender. Vacuumkjempen did not have the resources to meet the tender requirements and was then out of the market.”

The financial situation of a company in the oil service industry appears to depend on the presence of work. This is quite an apparent observation, as it exists in all industries. However, due to the market fluctuations, that seem to be methodical in this industry because of the time limits on contracts, it would be wise to have an alternative business market, should the activity decrease or contracts be terminated. This will depend then, on the kind of human and physical resources present in the company, and management's ability to utilize their skills. Eni Norge points out, that there will always be leading national and multinational oil service companies present on the northern NCS, due to the restrained resources available:

“Preferably the investors and the capital would be local. However, the financial resources do not exist in the north. We are dependent on actors from outside the region that establishes an operation here, and invest in infrastructure and solutions that contribute to a solid service foundation.”

Another aspect to consider is the knowledge fluctuations, where managers in the small companies might learn the processes from the more experienced managers (human resources), thus also have excess resources that can focus on new and different projects. This topic will be explored more in chapter 6. We will now look more into our data collection regarding human resources, and how they are perceived in Northern Norway's oil service industry.

### **5.2.2 Human and Physical Resources**

Physical resources are not perceived as an absent factor in Northern Norway, and will therefore not be viewed in a separate sub-chapter. It connects however to human resources, i.e. labor, since it depends on people to be operated, maintained and created.

The human resources in an organization are the management and their employees. There are different requirements to the composition of human resources, depending on the company's operation. A recruiting company depends strongly on access to human labor when it is required; a consulting agency depends on skilled labor that knows the industry they operate toward, etc. A restraint in Northern Norway, as we already have mentioned, is the access to such resources. Petro Arctic explains:

“Northern Norway has limited resources. There is no excess capacity. Several industry suppliers decline oil service jobs since they have other priorities, and the oil service offer too low prices for the companies to switch.”

There is again the question regarding activity, and the desire to invest in restructuring to access a market that does not offer higher profit margins. However, due to the long contracts, and what appears to be a prestigious industry reputation, some companies are willing to do the transformation. The constraint after the financial barriers is then their size in relation to capacity and knowledge. Shortage in capacity to partake in large contracts becomes a bottleneck if sufficient physical or human resources are absent. The lack of skilled labor and engineering competence in the northern regions may be one of the main challenges preventing local companies emerging as oil service suppliers. However, according to Aibel, the major actors seem to experience the same difficulties in regard to human resources. They explain in relation to their Melkøya operations in Hammerfest:

“Aibel needs resources in terms of manpower, which there is a restraint of in Hammerfest. This is a challenge for us. The cost of labor decrease the closer they live to where they work. Another thing, we are looking for mechanics and electricians, but why should people who does not live in Hammerfest or have any relation to Hammerfest move here? It is more expensive to live here compared to the surrounding cities and the salaries we offer are not high enough to provide a financial incentive. This makes it difficult for us to recruit labor. We have to airlift a lot of our personnel in and out to maintain adequate labor capacity.“

Again, we can refer to the migration problem experienced in the region. However, per experiences in other areas that has been subject to E&P developments, incentives to move to Hammerfest might reside on the future employment prospects. Eni Norge, which operates the Goilat field from Hammerfest, has as a contract requirement that their suppliers need to be no more than two hours away from Hammerfest. Thus, Eni Norge is forcing more establishments in Hammerfest, as there are no optional sites in the surrounding areas. If the activity increases, then immigration should be inevitable, as there will always be someone willing to move for work.

One of the mentioned methods among our interviewees to increase immigration to Northern Norway is the presence of clusters. Clusters are explained in chapter 3.5 if further elaboration on the topic is necessary. Clusters are required in some areas of industries to attract the right academic and professional environment to grow and develop an industry. E.g. engineering environments often appears in clusters. Thus, clusters could create an environment that attracts human resources that can exploit scale and synergy effects in the north. Aker Solutions elaborate on their perspective on the topic:



“Competence clusters related to petroleum have been developed along the Norwegian coast, such as the Norwegian Offshore Drilling & Engineering (NODE) cluster in Kristiansand. The strength of such technology clusters will be dependent on e.g. available human capital. Today, attracting competent labor does not just depend on offering a “cool job”. The social environment and the opportunity to settle with your family are very important. A cluster will only evolve in an area that can offer a “complete package” not only for the employees, but also their respective families. Aker Solutions selected Tromsø due to these factors, and obviously the University of Tromsø was a key factor in our decision.”

This would imply that the living conditions in Northern Norway is not considered as attractive or well developed as in Southern Norway, as companies in southern parts do not appear to experience lack of human resources. However, some competencies are insufficient everywhere, e.g. experienced geologist, reservoir engineers etc.

If a cluster appears, it will most likely be based on a long-term commitment to a certain area. Petro Arctic works with companies to identify business opportunities towards the oil and gas industry. They say that one apparent challenge is the uncertainty regarding how the future industry picture will evolve:

“The biggest challenge for companies in Northern Norway is to balance a new service industry in the north with the established service industry in the south. E.g. Aker Solutions have the infrastructure to build facilities and mobilize personnel and resources for a given contract at a given location. If the activity diminishes in the North Sea, and increases in Northern Norway, they will try to maintain the activity constant at the location where they have established resources. All employees in Aker Solution will not move to Hammerfest, even if that is where the all demand is. This is a challenge and will become a “game changer” the next 20 years. Thus, where is the balance between sustaining activity, competence and jobs at established facilities, and build new facilities in new areas?”

If local actors are dependent on major actors’ financial resources, and the major actors have no incentives to establish new operating sites due to excess capacity at their existing sites, the development in the north might come to a halt. It will only consist of the operative sites that require local presence. Most of the large national oil service companies have already opened

offices in one or more of the three northern counties. Petro Arctic do point out that the entrance of large contractors generates a new market in itself:

“An important mechanism is the market created for our members by additional demand from the large contractors. The market generated directly from the oil and gas companies is one thing, the market as a sub-supplier to the contractors is another.”

Thus, even though they do not create as many employment opportunities in their own organizations that attract human resources, they do establish new jobs through their activities. The local oil service industry does then reside on the ownership’s willingness to transform their organization, the major actors willingness to coexist and support smaller operators through outsourcing, procurement or cooperation, and the oil and gas companies requirements for use of local content. Thus, there are several factors that needs to highlighted and discussed internally in a firm before they decide upon their future strategy, and whether or not they have the necessary resources to compete in oil service. Petro Arctic has their recommendations:

“I would not recommend companies that, in my opinion, cannot offer what is requested from the oil industry, to transform and become an oil service provider. E.g. a big maintenance and repair yard at the coast of Lofoten, which operates toward the fishing fleet, coast guard and defense ships etc., will not necessarily benefit financially from becoming an oil service shipyard. [...] However, if they have financial strength to employ more labor and invest in additional capacity, first then will I recommend companies to position within the oil service industry.”

We continue with focus on those who have the willingness, capacity and resources to be in oil service. A local organization will have some fundamental advantages in operating in their own region. Sometimes, being a local actor means that you have better knowledge of the potential resources in the area of operations, in which can provide an efficient network of suppliers. Helgeland V&M says that they, being a local company, are more time efficient as they have better overview of the local business environment compared to a major national supplier. This again makes them more time efficient, which is cost saving for all parties. This is a human resource that can be capitalized, and thus create added value for those that can utilize this knowledge potential best.

Aker Solution continues and discusses their competence standards, and elaborates on why they want to build better knowledge and competence in their Northern Norwegian organization:

“One of the reasons why we established an organization in the north was to access and build knowledge within arctic design conditions. We need the multidiscipline engineering competence as well as special Arctic experience. Some arctic knowhow is strong in Northern Norway, with several private and public institutions. They possess operational and practical knowledge, an example could be the fishing industry. Other examples are the University of Tromsø and the Norwegian Polar Institute.”

Through our interviews we have tried to establish what resources and competencies that are strong and where they are weak in Northern Norway. Aker Solution gives a good example of benefits and necessities of exploiting local knowledge. Northern Norway has a different climate than Southern Norway. The locations above the Arctic Circle create challenges not experienced in the North Sea. Especially the Barents Sea has harsh weather conditions and unexpected changes in wind and temperature. The business environment is also different. The next chapter will explore this issue, in relation to local competence.

### **5.3 Local competence**

We will introduce a very current challenge where knowledge of the region is essential. If the climate and environment would mirror Southern Norway, there would be no gain to have “local competence”, as operations would not need any customization. However, so far none of the operating fields in the Barents Sea or the Norwegian Sea has been in accordance with the time frame or budget first estimated. The main reason has been the different climate that requires other standards than the fields in the North Sea. Aker Solutions provides us with an example of some of the difficulties the oil and gas industry needs to adapt to:

“There are some interesting challenges in this industry in the north. One example is related to understanding the climate conditions. In general, the wave height or the wind speeds are actually more severe in the Norwegian Sea than the Norwegian part of the Barents Sea. The key challenges in the arctic are related to icing, polar lows, snow drift and sea ice, in addition to visibility and distances. All these challenges can be solved, but must be fully comprehended by the industry. This is an important factor, and Northern Norwegian competence could have a competitive advantage due to their operational experience in these areas. Examples could be optimum design for extreme snow conditions. Also, there could be arguments for challenging existing regulations, e.g. for wind chill requirements.”

Thus, the process of adapting to the Arctic climate and environment require special competence that the local population has, and those who wish to operate in the area need. The local businesses should aim to capitalize on each other's competence and experience to utilize this demand. The "Arctic knowledge" provides the local operators with valuable scarce competence that is very fundamental for arctic operations. A situation that they should use to their advantages if an alliance with a experienced organization is essential to enter the market. Aker Solutions have already recognized this advantage and are actively working toward exploiting the predicted opportunities in the Norwegian- and Barents Sea:

"We definitely seek local Arctic competence as it is one of the reasons why we established the Tromsø office. We have ambitions of developing arctic expertise for future field development projects in the north. We have acquired local expertise and we will continue to work closely with the strong academic environment in Tromsø, i.e. Norsk Polarinstitut, Havforskningsinstituttet, the University of Tromsø, NORUT, Meteorological Institute and the fishing fleet."

It is a problem that most of the highest educated competences are being "vacuumed" by the oil and gas companies and the largest oil service providers. The reason for this appears to be their ability to recognize the advantages in employing these resources faster and better than smaller companies. They also seem to be in a position to offer higher paid employment. However, as most of our interviewees have pointed out, the industry will benefit from a wide specter of suppliers to be dynamic and exploit the synergies between the actors. Hence, limiting important competence to only the largest actors will prohibit efficient industry growth. A plausible solution to build a stronger competence foundation in Northern Norway could be, as we mentioned in connection to human resources, through the evolvement of clusters. First however, there need to be educational institutions that support the demand from the oil and gas industry. Aker Solutions mentioned the University of Tromsø. Petro Arctic elaborates on the traditional construction of competence:

"There is a shortage of engineering competence in the north, mainly due to two fundamental reasons. Traditionally NTNU<sup>15</sup> has been the greatest creator of engineers, and graduates have traditionally lacked career opportunities in Northern Norway. Also, the senior engineering milieu has been absent. Due to this, the competence

---

<sup>15</sup> Norwegian University of Science and Technology

foundation has been scarce. A fundamental environment for engineers is needed to settle and develop in the north.”

Access to engineering competence is important, especially for the competence intensive organizations such as the contractors. Aker Solutions says that recruiting engineers is not a problem in Northern Norway:

“Local educational institutes are very important. When we recruit engineers, we have access to engineers that have graduated from the University of Tromsø. When we search for people with some years of experience, we see that many Northern Norwegians are applying, they want to move back to Tromsø and they have acquired relevant experience. These people have taken studies within e.g. technical safety, process, electro and instrument technology. When it comes to studies within e.g structure and piping technology, which are not offered at the University of Tromsø, we have to employ more engineers with national or international background. In our cooperation with UiT, we are actively giving input to potential future engineering education that would benefit our industry.”

This supports the claim that the largest actors capture the most engineering competence, which barricade the smaller actors from evolving as a business and increase their specter of operations. To grow as an organization, knowledge is key. The largest actors appear to have the highest competence in the industry, which might also be why they grew big in the first place. Thus, smaller companies should try to identify how the majors acquired their status.

Aker Solutions underlines the importance of close collaboration with academic institutions and organizations to access first-hand knowledge. Aker Solutions also argues that it is sometimes easier for them to recruit special competence in Northern Norway:

“I have just hired four PhD graduates. [...] These people are “super experts” and bring unique expertise to Aker Solutions. These experts would not be available for Aker Solutions unless we established ourselves in Northern Norway because they want to live and work in this area. Such expertise is highly valuable for a number of industrial segments or the finance sector. In Northern Norway there is currently less competition for such resources, and we hope to benefit from that.”

It is apparent that there do exist resources and competencies in the north that are important to establish a secure and stable oil and gas industry. The Arctic challenge is a new phenomenon in the oil industry, and needs to be facilitated. Aker Solutions suggest areas where local

competence is especially important. Their response also suggests that they are made highly aware of the environment in which they operate, a prerequisite for a successful entering strategy.

“It can be emergency awareness, logistics, polar darkness, fog, ice, snow, and air transportation – everything that is especially challenging in the Arctic environment. The northern oil service industry can and should exploit these competences. At least Aker Solutions will. And all these challenges can be solved.”

One of the main challenges in building competencies in the target market is knowing where the competitive advantage potential exist, and how to further grow through it. Smaller companies as we have mentioned, might not have the necessary resources, and hence, not the possibility to create the competences that could potentially develop the companies' position. The larger actors have such extensive networks, it appears, that other players will be at disadvantage regardless of their investments. Thus, building on their local competence might be one of few areas where their knowledge cannot easily be replicated. The industry picture, and identifying strategic gaps where they can exploit this advantage, however, is not easy. Statoil, as the largest E&P operator on the NCS, are vague when talking about local content, local presence and how to utilize the local competence.

“There are a lot of resources in the northern areas, and we wish to maximize the value creation. To accomplish that, we need local and qualified service providers. The local operators know the area and they have the potential to deliver on schedule. The question is; how can we get them to deliver what we need? [...] I think the business and political environments expect higher demand when Statoil enters to develop a project. We cannot buy products and services at higher prices just because these are local supplies. Therefore, we have focus on developing a competitive local oil service environment where we operate. [...] To Statoil the question is simply “who can provide the best product?” But, we also consider local content. Our operations should not be at the expense of the community; we have to work “together”. I believe Northern Norway's oil service actors would more easily gain a strong position if they could deliver 100%, but then they need a bigger player supporting them.”

Statoil says they are the largest facilitator of local content on the northern NCS. Our interviewees describe Statoil as the least local content focused E&P operator. Other E&P operators have been successful in including local content. BP Norge and Eni Norge have both

generated local content in their Northern Norwegian operations. Thus, there must be incentives for larger companies to ally with a smaller company to secure proper local content in tender bids.

Statoil explain their perception of the local oil service industry:

“The local oil service operators in Northern Norway are still far from competitive on capacity to acquire contracts individually. The oil service operators in Southern Norway have built major competences that are being brought northwards for development projects. They are superior to the northern operators on resource capacity, such as financial, labor and technology. [...] The northern oil service environment will never become larger than the southern, but it can develop significantly. It all depends on the oil and gas findings.”

Another important factor to grow the local industry is to preserve and build on the competence that exists in the region. That requires local actors to be present in the market. However, as activity fluctuate, small companies might face challenges staying in business. Thus, a second industry to compete seems at the moment necessary. The actors constituting Helgeland V&M has such a strategy:

“For our owners, this maintenance contract represents an additional market. They operate in their core market, and the M&M contracts gives them additional income and activity. We are aiming to develop further and grow as a M&M operator. With a solid organization we can get better. For our owners, the M&M contract demands higher competence and quality standards, which in turn provide them higher competences in their organizations and thus develops the companies further. The quality and safety standards in work procedures and the certification process are less demanding in traditional industries.”

Presence in the oil service industry seems to have positive externalities for the individual companies' towards their traditional field of operation. This is due to the high quality standards that are so apparent in oil and gas, but lacking in more conventional on-shore industries. Thus, to target to industries might be beneficial in that competence is increased in both fields. The idea of targeting two different industries that require similar operations are further discussed in the “activity” sub-chapter.

Competence exchange is important for the regional industry to develop. Thus, knowledge sharing initiatives, such as establishing alliances, will strengthen the overall industry competence in Northern Norway.

The next sub-chapter will further discuss how barriers can be lowered, and resources and competencies be exploited through entering strategic alliances.

#### **5.4 How alliances can contribute to increased competitiveness**

We have discussed our data collection surrounding the entry barriers to the oil service industry, and the resources and competencies that are favorable, and necessary to be competitive. As suggested, there are different ways of acquiring the necessary capabilities that will complete the organization through their strategic objectives, one of those are the creation of alliances.

The above-mentioned barriers to enter the oil service industry might be, as we have pointed out, too resource consuming for an individual company to overcome on their own. Lack of resources and competence, both in the region and within companies, creates a growth restraint for becoming a direct supplier. As mentioned, by forming alliances with other actors, a company can gain the capacity required to become a contender. This section will explore how strategic alliances can increase a company's competitiveness. We start by introducing Petro Arctic's point, that alliances have different objectives:

“There is a difference between a network and an alliance. Energiklynge Nord<sup>16</sup> is a network, while the cooperation between Momek<sup>17</sup> and Aibel, and the case of Helgeland V&M, is commercial strategic alliances that offers products and services as a common oil service provider. There is also a difference between alliances based on developing the industry or regions, and strategic alliances between oil service providers.”

This thesis is mainly concerned with strategic alliances between companies, and how they through combined resources and competencies can overcome barriers to position themselves in the industry.

---

<sup>16</sup> Energiklynge Nord constitutes of members operating in northern Norway. The complete business network is large enough to participate in the Norwegian oil and gas industry, and explore opportunities in Russia.

<sup>17</sup> Momek is based at Mo, and are northern Norway's biggest total supplier of on- and off shore in the yard industry. (momekgroup.no)



So far, we have mainly discussed small and new local entities, as they have appeared weakest in the industry. However, major actors will also have barriers in a new market, where we have seen entry strategies that could have been more fortunate. Petro Arctic elaborate on possible misfortunes with alliances:

“It is important that potential competitors do not form alliances. When Statoil established their service network for M&M services in the Norwegian Sea, Reinertsen<sup>18</sup> entered through a strategic alliance with Aker Solutions. Today, Reinertsen is established as one of the major M&M operators and thus a significant competitor to Aker Solutions. The companies need to be careful as to who they form strategic alliances with going forward.”

What we have seen is that it is important that all parties within the alliance have a clear and common understanding of why they cooperate, and what they expect from the alliance. A common goal could be an effective tool to motivate an alliance, e.g. with regard to size, where two or more parties are too small alone, but together have the necessary resources and capacity. As mentioned earlier, but that need to be repeated, is the regard of complimentary and supplementary resources. A clear perception from all parties as to what goes in and what comes out. Helgeland V&M is established as a juridical entity, they wanted to have their alliance as a separate business venture. Their motivation to develop an alliance:

“The energy minister said in 2006 that the Skarv field would be developed. If our owners were to take part in it, an alliance was the only form for us to participate in the process. The companies that today are alliance members sat down and expressed that they wanted to get involved in Skarv. Individually, they would be too small. [...] If there were any obstacles in establishing the alliance, like competition between the companies, we found solutions to overcome them. [...] We invested a lot of time and money on the alliance agreement. Every detail needed to be clearly communicated and understood. We needed to secure every aspect that could go wrong in the agreement.”

Thus, the alliance was based on a perceived business opportunity that local operators wanted to leverage. However, as several small operators with no direct connection to the oil service industry, they relied on an additional alliance to cover the necessary resources to participate in the bid. They also invested time and money to build the juridical framework surrounding and

---

<sup>18</sup> Reinertsen is a major construction company that has also expanded into M&M services on the NCS.

protect the alliance. But, due to the fact that they had no previous relation to the industry, they also relied on Aker Solutions to provide support and security. This is one example of an alliance where several small operators initiate and create an alliance to increase their resources and capacity. Most alliances in the oil service industry seem to be based on complementary or supplementary grounds, i.e. either to increase their specter of operations or to increase capacity within a segment. Another reason why a firm might want to attend an alliance is reputation. As we have already established, reputation is important in the oil and gas industry.

Invis is a small firm that took the initiative to invite an international company in the same business, NB Surveys, to establish an alliance positioned for the Norwegian market. The two parties agreed upon the terms and conditions and established NB Invis, a joint venture with an equal ownership structure. Invis explains:

”Our motivation for establishing the alliance was to increase our resources so we could win more jobs. We are just 4 engineers who can travel and perform projects. That limits our ability for how many projects we can take on, and the size of the projects. [...] We have done everything the oil and gas companies have recommended entering the Norwegian offshore market. We took it one step further and allied with a much bigger partner to secure a solid position in Norway. [...] NB Surveys has 30 years of experience and offices in eight countries. The idea is that they will bring us valuable capacity, competence and experience we otherwise would have needed decades to create. Now we can penetrate the Norwegian market faster.”

Regardless of the underlying reason motivating an alliance, there are several similarities in how an alliance comes about, both concerning challenges, and opportunities. Petro Arctic mentions some areas of concern that companies seeking an alliance should be aware of:

“There are two main challenges when establishing alliances. The companies that evaluate an alliance as an alternative to enter the oil service market are often small in their organizational size and have poor financial resources. Due to the size of contracts in oil service, the operators need certain robustness. It also shows to be challenging to fund alliances. For a bank, it may be risky to lend capital and to evaluate the business potential for an alliance. Therefore, the Helgeland V&M model, with an alliance of small operators together with a large, Aker Solutions, is favorable in a capacity perspective.”

Petro Arctic also emphasizes the time and resources that should be allocated to establish an efficient alliance. They underline that the process must be embedded within the company, and that the management must be set to lead the company into a concrete goal. Simultaneously the board must be willing to spend 4-5 years to succeed. Having financial resources available and at the same time identify what is being demanded and adapt to the market is crucial. Thus, being a large company with established resources or establishing an alliance with such a company appears to be an advantage. Aker Solutions' alliance with Helgeland V&M is said to be one of the reasons why Helgeland V&M got the maintenance contract at Skarv, but the external surrounding was also an important factor contributing to the success of Helgeland V&M, according to Petro Arctic:

“There were four specific factors that made Helgeland V&M succeed. The first, BP Norge as the customer, facilitated the contracts for smaller operators when splitting the M&M contract into two parts. The second, Aker Solution took a position as a sub-supplier and partner for Helgeland V&M, guaranteeing for the resource base. The third, local operators took the initiative to form an alliance. And the fourth, the resources of the Helgeland V&M participants were complimentary. Challenges with an alliance like Helgeland V&M are to limit the number of participants that are not complementary. If not, the alliance will not be competitive. If the purpose is to create a network with a lot of suppliers, everyone might be included. If the purpose is to create an alliance able to take a specific job, then the composition of the participating companies is very important.”

The first step will then be to identify the lacking resources, so it will be easier to source which companies could be a potential alliance partner. Also, to investigate the necessity of having a larger actor included. It is important to point out that alliances between large and small actors might create dissatisfaction. There can be a biased power relationship where the smaller company often cut short of the large. Regarding an alliance Aibel has with Momek, an industrial company based in Mo, Aibel suggests that their alliance partner may have had too high expectations to the effects of the alliance:

“I think, with reference to the media, that Momek is critical to us as an alliance partner. Momek has given clear indications that the business received due to the alliance was far less extensive than anticipated. Then, we may discuss the terms and conditions in the partner agreement, but for a small an inexperienced operator like Momek, entering an alliance with a big and experienced company like Aibel, where

there will be skilled professionals negotiating on our behalf, and securing our downside risk potential. Keep in mind that this is business. [...] I think if Momek's management had more experience they would be better off in the negotiations.”

However, the benefits small actors can experience through an alliance with larger companies appear to be greater than the potential downsides. This has much to do with the contract, with the E&P company, which usually contains a local content clause. Regardless of Statoil's irregularities between thought and action, other oil companies have proven efficient utilization through included local content. Eni Norge requires their contractors, not to be local, but become local. They argue that the local presence allow for better planning and cooperation due to more flexibility and shorter lead-time. They also claim to highlight the degree of local content in the different bids. Thus, alliances with local actors might be key for large actors:

“To be able to win large tenders with Eni, you need to show a list of references that very few northern oil service operators can provide. [...] Considering the M&M segment, there are usually five major contractors on the bidder's list. These companies are competent and meet our requirements, but are not necessarily established with local capacity to perform the job according to the contract. The local companies lack financial resources, experience and competence to do the job. The larger companies lack local infrastructure, capacity and labor. Therefore, an alliance between a local operator and a national major contractor could be vital to offer a superior concept. In our case, for Eni, such alliances are critical for contractors to succeed with a tender offer.”

The benefit for major actors using alliances that are local can be key for both actors, as Eni Norge points out. However, an alliance with a local actor can provide a major actor with a competitive advantage that is not only due to winning contracts. Aker Solutions follows up reasoning that local participation is not philanthropy but practical:

“What is most important, not only politically but also for the oil companies and main contractors, is that we have a responsibility to create local content where we operate. This is not just something we say but something that is actually important to us. It is not just about fulfilling political guidelines, but also about efficient operations. We can reduce travel costs and increase the stability of labor and the general efficiency in our daily operations. [...] One example is our partnership with Helgeland V&M where

local companies in the Sandnessjøen area are cooperating with Aker Solutions for modification and maintenance services to BP.”

Thus, local actors create advantages through optimizing the efficiency of different operations. All factors contributing to reducing cost and lead-time can be said to optimize an operation. A small company could use this to their advantage, and aim to target a segment where the present time efficiency is low.

We have experiences examples of small companies, at the forefront of the industry development in the north that are keen to enter alliances with bigger oil service operators. The small companies acknowledges their inexperience and limited resources, physical, human as well as financial, and tries actively to ally with a bigger company that fulfill the requirements as a contractor. Helgeland V&M is under the same impression as Petro Arctic and Aker Solutions regarding that an alliance was their key to enter the market and to win the maintenance contract on the Skarv FPSO. This also suggests that both parties have the same perception on the importance of alliances and its purpose:

“A substantial explanation for why we manage to win the Skarv M&M tender was the alliance we got with Aker Solution. Aker Solutions act as our subcontractor. When we entered into an alliance, BP saw us as a serious and competitive M&M operator, since Aker Solutions has, in practice, unlimited resources. [...] BP divided the M&M contract into two pieces, were Helgeland V&M is responsible for maintenance and Aker Solutions is responsible for modifications. Helgeland V&M did not have the required competence to take the entire contract ourselves.”

This is one example of how small and large companies work together to create business opportunities for each other. Hammerfest Industriservice is also completely dependent on strategic alliances going forward as an oil service operator. The general manager we interviewed said their strategic alliance with Aibel, targeting the M&M contractor at Melkøya, provided them their first job for Statoil:

“The oil service industry is a new business for us and per now we do not have the proper competence being a individual supplier. If we are to participate in tenders we need to find and enter strategic alliances with other companies. [...] The alliance with Aibel definitely contributes positively to our cash flow and provides us jobs so that we could build up our workshop. [...] Without Aibel, Hammerfest Industriservice would not be able to deliver to the oil and gas industry today. In this business, it is the first

job that qualifies the company for the next one. You can prepare as much as you want, but without the first job you are not able to access the industry and grow. [...] A good alliance was our “ticket” into the oil and gas industry. The first job increased our competence so that we were better prepared for the next. We now also deliver to Eni through an agreement with Apply Sørco, which was possible due to the experience gained with Aibel. Once a company is qualified for one E&P operator, it is qualified to the others as well. However, there is no automation in this process, only an informal process we have to go through.”

Thus, we are under the impression that a new and inexperienced supplier relies to a greater extent on an alliance with an established operator, than a company that has been in the business for some time. This should then be due to the initial lack of experience, which will create unnecessary risk for the employer of the contract. When the new company has gained experience it is better equipped in tender bids. Hence, not rely on a major actor to the same extent, but rather cooperate with other small operators that complement or supplement the organization and support the objectives. This is important if the company wish to have better control of its own business, as it is apparent that the major companies exploit their skills to their own benefits when necessary. After all, it is business, not charity. Hammerfest Industriservice says:

“I think Aibel use us because there is an economical benefit in having us as a strategic partner. Our alliance creates values for both parties, and I do not think any of the large contractors would attend an alliance at the expense of profitability. It is easy to say that it has other societal reasons, but I do not think it is the underlying reason. It is the bottom line that is most important.”

Aibel on the other hand, elaborates on the importance for them to establish alliances, which might not be as important for the major contractors as for the potential sub-contractors. They also imply that the incentives for the alliance are cost advantages, which support Hammerfest Industriservice’s theory:

“We are not pressed to use our strategic partner Hammerfest Industriservice, but there are advantages in using a local sub supplier. [...] If we manage to create a good dialogue with our vendors, the distance between us are short and we are able to reduce transportation costs. [...] Aibel is not dependent on Hammerfest Industriservice to do our job. We have a great yard in Haugesund, which can fabricate and produce

absolutely everything we need. Then, we are not dependent on the alliance. But it makes sense, it is practical and it gave us a competitive advantage in the tender process having an alliance with a local actor.”

Aibel further states that their most important incentives to request and enter an alliance are flexible resources and access to local labor. The nature of the contracts demands different levels of labor in various periods, and they have to be able to source manpower externally, potentially through strategic alliances. This may be distinctive for the main contractors within the M&M segment. In the case of Helgeland V&M, forming an alliance provided an opportunity to become a contractor, not only a sub-supplier. Helgeland V&M argues that a company’s position in the value chain determines the profitability:

“The closer you are to the oil and gas companies’ value chain, the higher earnings you will get. Therefore, we would position ourselves directly to BP. However, the closer you find yourself, the higher are the risks. For example, you may find yourself in a position where you cannot deliver because the resources are limited. Or you do not have the competence needed.”

Invis implies the two companies in the joint venture are complimentary in the way that Invis knows the Norwegian market and has a reputation, while NB Surveys has resources and competence. In a larger project, Invis will administrate it and NB Surveys will supply personnel. If the project is smaller than a given size, Invis can do it themselves. They also claim to now be the largest operator within this segment, and that creates added value.

We have seen that size is important in oil and gas, and the simplest growth model is alliances or M&A. However, it is a difficult process integrating different firms into one unit. When we asked Helgeland V&M whether they believe other operators should use their alliance model to position themselves as an oil service supplier, their answer was the following:

“The basis for a successful alliance is companies with complimentary resources situated close to each other. The companies need to match each other. Then, an alliance is indeed possible to create. If these companies are similar and hard competitors, there might be difficulties in founding an alliance. The question is when such an alliance is relevant? The reason for our success is probably because we have a long tradition and culture for industrial activities in our region. There are not similar industrial clusters in Northern Norway.”

It is also important to point out that the creation of an alliance has financial implications. Invis spent, or maybe it is more correct to say invested, 600-700 000 NOK on lawyers and consultants in the process of establishing the alliance. Invis wanted to ensure that this was a good idea and that the shareholders agreement was drafted accordingly. It sounded like Invis consider the investment as fair when we followed up and asked whether if the alliance will bring more activity. They seemed certain that even though 2014 are assumed to be a poor year business wise, they would generate more projects anyhow. For us, it seems like the entrepreneurs of Invis are confident that an alliance will provide them a better platform for expanding business growth.

We have now seen some different combinations of alliances. The partners of Helgeland V&M are mostly complementary and in short distance from each other. Individually they are also relatively small. Invis and NB Surveys are located in different countries and of different sizes, but in the same business segment. Aibel and Hammerfest Industriservice are of different sizes, positioned in the same business segment and more or less complementary considering their resources. These are all well functioning alliances, so how can we emphasize one model to be better than the other?

Petro Arctic reasons that the companies in an alliance must be aware of the purpose of the alliance, and on what grounds it is formed. Also, the resources offered to the alliance must be known. Keep in mind that most of our interviewees talk about resources both as physical resources and the competence of the organization:

“The resources of the companies must be complimentary and have a highly thoughtful balance of capabilities. An alliance can be formed in two configurations; a large company and a small company together or a combination of several small companies. There are different combinations of alliances for different business contexts and purposes. The alliance has to function both in a tender process and in a delivery process.”

If a group of companies are in need of development and support, an alliance network might be a possible solution. Petro Arctic argues that their organization has been among the most important facilitators of strategic alliances and business networks in Northern Norway:

“Petro Arctic is the architect behind the LUNN program, which now is owned by Statoil. This program was specifically intended to prepare and develop oil service companies for the Melkøya development. Based on LUNN, we have seen alliances



like Helgeland V&M, Momek's alliance with Aibel and Hålogaland Olje & Energi develop. The industry network Energiklynge Nord is also based on the LUNN program.“

Petro Arctic continues and underlines how local operators should position themselves to approach the growing oil service market:

“The vendors must position themselves at the forefront. Those who prepare themselves in the forefront will succeed. What we see is that operators that have succeeded prepared for- and explored the opportunities well in advance of projects and won contracts. [...] I think personal relations through partnerships are a key success factor. You need people who you can trust and who are easy to mobilize for a project. Through networking and cooperation you will gain knowledge on how to mobilize and recruit resources. [...] I think, definitively, that we will see strategic alliances as a tool to approach the oil and gas industry. It is important that the resources the companies bring to the alliance are complimentary.”

Eni Norge points out, that in order to maximize the value creation in Northern Norway, companies should be present with their entire value chain. They emphasize that if the value chain and the owners are based in Northern Norway, the profits will also be left there and reinvested in new infrastructure, building stronger resources and competitiveness. The larger industry majors, such as Aibel, often relocate their earnings to their holding company as profits. However there are national companies like the NorSea Group, which reinvest all their profits into new infrastructure, building larger resources for future activity. However, it is important that the large actors such as Aibel and Aker Solutions are present, as they are required for the local actors to enter the market.

It seems that when the Northern Norwegian oil and gas industry grow, more local actors should evolve in size, which will to them generate more and larger contracts. For the society, this growth will generate increased demand for ordinary goods and services as well as higher tax incomes and reinvestments in infrastructure. Thus, the activity plays a vital role not only for the oil and gas related industries, but for the entire northern region. The next sub-chapter will explore the activity further.

## **5.5 Activity in the northern oil service industry**

The above sub-chapters have discussed barriers concerned with entering and developing as an oil service supplier. We have also suggested that these barriers could be minimized through

the creation of strategic alliances. However, one factor that must be present is activity. Activity is a factor that is decided by more stakeholders than included in the industry itself. Thus, it is without the power of any individual company to influence. Regardless, activity must be present for it to be an industry. We will now discuss our data collected regarding present and future industry activity in Northern Norway.

The Levert 2012 report states the growth perspective in the oil and gas related industries in Northern Norway:

“The petroleum based service industry in Northern Norway delivered in 2012 services amounting to NOK 4.52 billion. This is the highest level registered the last four years. The turnover increased by 20.5% from 2011 to 2012, while the number of employees increased by 18%.” (Levert 2012, 2013: p. 6)

**Table 5.5.1: Supplies delivered, billion NOK**

	2010	2011	2012
<b>Nordland</b>	1. 75	1. 83	2. 42
<b>Troms</b>	0. 34	0. 49	0. 74
<b>Finnmark</b>	1. 54	1. 43	1. 36
<b>Northern Norway</b>	<b>3. 65</b>	<b>3. 75</b>	<b>4. 52</b>

*70.1 % of the interviewed companies in 2011 expected increased deliveries in 2012. 60.8 % of those who expected growth increased their deliveries. Troms was the county that had the smallest growth compared to expectations, where below half the companies achieved growth.*

*Source: Levert 2012, 2013: p. 6*

The oil service industry has experienced growth in the region, mostly due to the development of the Snøhvit field and the Skarv field. However, Petro Arctic points out that the current activity is low:

“The general activity is vital for the future, i.e. that more oil and gas is discovered. The current activity is too small to create a robust supplier environment in the north,

thereby also strategic alliances. The current alliances have a very regional grasp, and are mainly focused on opportunities within their communities.”

Thus, more discoveries are necessary to boost the activity, and thus to develop a strong oil service industry. Petro Arctic is under the belief that there will be more activity in the years to come, however, they operate with a long time frame:

”There will be a remarkable growth. There are already a lot of discoveries made on the northern shelf. What is very positive is that the growth will be very strong in this part of the country since the oil service industry is less developed up north compared to the rest of the country. [...] The oil service industry in Northern Norway should develop strongly in all segments. What we see is that in the next 20 years, there will be a very strong growth in the northern oil and gas industry. We write in our report “Levert” that from around 2040 the northern shelf will be as big as the North Sea, which today is the world’s biggest offshore market. Towards 2040 there may be investments of 200 billion NOK every year on the northern NCS. A lot of these investments will go to foreign companies, but Northern Norway will be a key offshore hub on a global basis.”

Petro Arctic seems to be under the impression, with regard to their statements and the Levert 2012 report, that there will be extensive growth in the industry. However, according to Aibel, the limited number of present contracts in the market is unarguably the main challenge for the established oil service industry. Also, it prohibits the industry for growth.

“When I first came to Hammerfest, in 2007 and at the end of the Melkøya development, the activity was in decline. There were still a lot of people present and local businesses experienced very good times. At most, Aibel had 400-500 people present at any time. A super cycle for the local businesses creates opportunistic expectations. When all labor related to the Melkøya development left, the community experienced significant lower activity. Statoil operates efficiently and the daily operation of the Melkøya plant does not create extravagant business activity. To generate super growth, you need many development projects. Also, the oil and gas companies are now even more aware of cost efficiency than before.”

Without activity it is apparent that the business opportunities for new entrants are not attractive. The few contracts that do exist have very strong competition. This is in strong

contrast to the North Sea, where the market is more mature, but still offers high industry activity. Helgeland V&M faces growth challenges, and says the following:

“On the southern NCS, the oil service operators are more diversified; if they cannot get a contract at one field, there are 10 other fields in the nearby. If a job is being cancelled, one can send the personnel on another job. Working on Skarv, if this job is cancelled, we must find other jobs onshore. Offshore accommodation capacity is an example of practical challenges for us. It is important that our owners also do business onshore if the offshore activity should decline.”

Aker Solutions also have an opinion regarding the Northern Norwegian companies:

“A challenge oil service companies in Northern Norway faces, is the necessity of targeting the whole NCS, not just the northern region. If you are a skilled specialist in an area, you can deliver to Gullfaks and Statfjord with the same efficiency as at Skarv.”

The northern oil service industry could gain more robustness if they targeted the whole NCS. The alliances most local operators have with major actors could potentially be the key to expand into the North Sea.

What will then be the challenge for the Northern Norwegian company is the same as their opportunity in own region; proximity to the client and field. The oil and gas companies need to follow political guidelines and reduce costs. The main cost advantage is reduced transportation. Petro Arctic gives an example of overhaul and maintenance on subsea trees. If they are sent by sea it will take 10- 12 days just to ship them back and forth the west coast. Thus, if an oil service provider situated in Hammerfest is to be competitive on a field in the North Sea, the logistics need to be highly effective, and their products or services very specialized.

We have tried to localize the different segments where local actors can become strong. Aker Solutions says the M&M segment will dominate the local oil service industry in the years to come. Also, they point out important factors that have been introduced previously, and put them in a nice practical connection:

“I think it is within the M&M segment that we will see the main volume of services as new fields are coming on stream, and it is in this segment the local actors can be strong. In addition, there will be several subsea installations that need maintenance, but it is mainly the topsides that will generate the significant activity of maintenance

and modification. If we take a look at the history, 12-13 years back the only field in operation, in what is considered northern part of the NCS, was the Norne field. Then, the Snøhvit field was developed in 2003-2004. Now, we see a whole lot of other fields developing, like the Skarv field that is producing and Aasta Hanseteen and Goliat, which is under development. Hopefully, the Johan Castberg field will also be developed. Right now, there is a turning point when it comes to M&M services, were you need a certain volume of projects to be able to establish sufficient competence locally.”

There appear to be opportunities for growth also among local suppliers. However, Aker Solutions continue to emphasize the necessity of major suppliers’ involvement in the Northern Norwegian oil service industry.

“I do think that smaller companies operating locally, or to a certain extent regionally, are dependent on the major oil service operators because the volumes are high and the complexity of the projects demands a variety of special competences. I think it will be too challenging to build all the competences required locally. We must keep in mind that a great share of the work undertaken by the larger contractors like Aker Solutions and Aibel are performed by subcontractors. [...] Our supply functions buy machined components, bulk material and services within professional services like electrical and automation disciplines and isolation and surface treatment. These services are sometimes offered by large suppliers that have settled locally and do not necessarily have local ownership, but they got local labor.”

Petro Arctic adds:

“The shortage of offensive political effort is among the industry’s greatest prevention of investment incentives.”

The politicians need to be active participants included in the industry, so it is not left on its own.

**Table 5.5.2: Findings summarization**

<b>Barriers to enter the oil service industry in Northern Norway</b>	The barriers concern mainly small and new companies as they seem to lack the necessary resources to position themselves within oil service
<b>Resources required to operate</b>	Skilled human labor and strong financial foundation appear to be the main missing factors in Northern Norway that needs to be developed and/or imported
<b>Local competences</b>	Northern Norway does not have the same history in oil service as companies located in Southern Norway. Thus, local competence is at a disadvantage. However, the climatic differences offer an advantage for local operators.
<b>Strategic alliances and its importance for the different players</b>	Strategic alliances seem to be of different motivations depending on the size of the oil service actor. Small actors seek alliances due to supplementary and complementary reasons. Large actors seek to satisfy oil companies’ requirements of local content and to have manpower in closer distance to their operating sites.
<b>Activity in the Norwegian and Barents Sea</b>	The present activity is low. However, the prospect illustrates large potentials, and a growing activity level that will surpass the North Sea by 2030

There are several opportunities and challenges facing the Northern Norwegian oil service industry. Financial resources, skilled labor and an established network have been perceived as main factors absent in the region. The entry barriers to new oil service actors are the main challenge for local players that lack a foothold in the industry. However, we have also discovered that there are great opportunities for companies that can overcome the barriers, but that there needs to be a certain size in activity to create the right incentives. We will further discuss our findings in the next chapter.

## **6. Discussion: The oil service industry in Northern Norway**

The oil service industry in Northern Norway is in its growth phase, and capital requirements are at the moment higher than in e.g. the North Sea, where the market is mature. Examples such as the environmental differences experienced through tougher climate conditions, gives this area a new aspect to consider. Thus there are advantages to gain for those who can overcome those barriers more efficiently than their competitors. This chapter will further analyze the findings presented in chapter 5 connecting it to current theory, and try to underline the different mechanisms operating in the given situations.

“The Northern Norwegian oil service industry appears to have a bright future. There are considerable exploration activities outside the coastline, and several discoveries have been made, such as the Johan Castberg field (previously Skrugard and Havis). New installations such as Goliat and Aastad Hansteen are to be commissioned, additionally there is the maintenance required at the existing installations; Hammerfest LNG, Skarv and Norne.” (Levert 2012, 2013: p. 3)

The discussion will follow the same structure as our empirical findings. However, the oil and gas activity in Northern Norway will be discussed first since it represents the macroeconomic perspective. Following will be these sub-chapters:

- Barriers to enter the oil service industry in Northern Norway
- How to exploit and allocate resources required to operate
- Firm competencies; identification and application
- Strategic alliances

### **6.1 Oil and gas activity in Northern Norway**

During the data collection process, we identified activity as the main incentive to position as an oil service operator in Northern Norway, regardless of company size and previous experience within the industry. Obviously, investments and economic growth is the main reason for most businesses to compete, and the prerequisite is demand. The E&P companies' value chain is complex and industry actors need to identify when and where to position and towards which time frame they are working. E.g. when Statoil discovered the Snøhvit field in the Barents Sea, it took 17 years before the field development started. The type of activity in which local companies had an interest was the development, commissioning and operational phase of the onshore Melkøya terminal in Hammerfest. When the development phase was

over and the production phase eventually started, the activity tumbled significantly. To keep activity high, there must be investments in new development projects, such as the Goliat field. The main factors to be highlighted from the activity findings are:

1. Current industry activity is low
2. Oil companies reduce spending to save costs
3. Few new E&P development projects within geographical sound proximity are initiated.
4. Future activities are expected to increase
5. Better industry facilitation is needed from stakeholders

These areas will be discussed on the basis of national comparative and competitive advantage, where the national diamond is essential. The national oil service industry has progressed as a response to the increased investments and demand for technology development at the NCS, providing opportunities to capitalize on- and exploiting foreign knowledge, and thus advancing it further. “Competitive supplier industries in a nation also help encourage world-class downstream industries. They provide technology, stimulate transferable factor creation, and become new entrants. One international competitive industry also creates new related industries, through providing ready access to transferable skills, through related entry by already existing firms, or by stimulating entry indirectly through spin-offs.” (Porter, 1990: p. 151) Thus, the macro environment is an essential factor in an industry analysis since it explains some of the demand conditions.

The developments in the north have mainly consisted of individual projects. Thus, the presence of oil service companies and activity has been very volatile, with great presence in the intense periods, and a low presence after the peak periods. All our interviewees emphasized that investments in E&P activities are key to maintain a considerable level of activity in the northern region. On the southern NCS, investments in enhanced oil recovery and new development projects are driving the oil service activity. In the Barents Sea, there are only two fields that to this date are being developed, and all activity depends on those two projects. The exploration areas in the Norwegian Sea outside Helgeland are considered more mature with fields like Norne, Heidrun and Skarv in production and with permanent infrastructure solutions in place. The National Diamond suggests that it is the demand conditions in an industry that shapes the growth, innovation, and quality improvements (Porter, 1990). The Norwegian and Barents Sea currently have poorer demand conditions than



the mature North Sea, thus, the incentives are not at current strong enough to provide a robust industry.

Petro Arctic said that the Northern Norwegian oil and gas related industries undoubtedly would see a remarkable growth the next 20 years. Thus, the demand conditions are expected to improve. Aibel, representing the M&M segment, says there needs to be a greater number of contracts to create a solid industry foundation, and implies that the present activity is too low for contractors to invest heavily in infrastructure. Then, the operators are dependent on infrastructure such as construction yards, maintenance facilities and personnel supply from areas in and around Stavanger, Bergen and Kristiansund, the strongest oil and gas clusters in Norway.

Petro Arctic claimed political effort is essential for creating investment incentives and that shortage of political offensiveness is the oil and gas industry's greatest threat. This again is supported by Porter (1990) who claims that Government, "acting as a catalyst and challenger; it is to encourage - or even push - companies to raise their aspirations and move to higher levels of competitive performance..." (Porter, 2014) Further, the politicians seem to be undecieving as to where and how the industry should progress:

"It is direct contact between the municipalities and operating companies [oil and gas companies] that influences the ripple effects the petroleum industry provide upon the local communities, not a joint initiative between the municipalities that share the same challenges. There seems to be a political battle between the regions to attract occupations and positions, as well as protecting own initiatives and ideas. This battle appears to prohibit cooperation among municipalities, that potentially could create strong alliances in both business and politics." (Nilsen et al., 2013).

To us, listening to politicians and research organizations in lectures and on industry conferences, it seems as if there is a huge present business potential in oil and gas in the north. The message appears to be "position for oil and gas now, or lose high incomes forever". It may sound ridiculous, but the atmosphere feels severely uncritical and excessively positive about future possibilities. These representatives are not necessarily industry professionals; however, they represent public opinions that are far from reality, at least in this stage. We have identified, not only trough our interviewees, but from various sources throughout our work, that the challenges in the oil service industry are huge. Especially is this relevant among minor operators. Large investments are required to reduce the competitive advantage

of established actors, long periods of poor economical performance before a possible breakthrough and patience regarding organizational competence accumulation are amongst the drawbacks. The potential of establishing alliances can definitively increase attractiveness of the industry if synergy effects are exploited successfully. Then, a position as a first mover can be central for successful break-throughs when activity momentum increases and supplier's capacity becomes a bottleneck for the industry.

If we consider the National Diamond again, Porter (1990) emphasizes the evolvement of industry clusters as a competitive advantage. Clusters will, as we discovered in our findings, most likely settle in areas attractive for the industry employed and their respective families. Also, sufficient long-term activity should be present to create the incentive for formation. It is observed that several large companies strategically locate themselves in clusters and nodes to gain access to synergies and distribution networks. Northern Norway needs a similar concept present to attract the international companies, thus, creating opportunities for smaller companies to provide the larger actors with their necessities. In Northern Norway, there are two natural hubs for offshore supplies: Sandnessjøen for the Norwegian Sea and Hammerfest for the Barents Sea. The cluster effect is a value-adding process that creates business for the local community in general and development of the local oil service environment.

“Norseas base concept emphasizes the ability to create a community of service suppliers and operators. A logistic hub will create value-adding activities through synergies, including the industry and the local community.” (Rystad, 2013: p. 52)

Aker Solutions explained that the real potential for established local operators is within the M&M segment. The segment is labor intensive, and skills are transferable to other such industry segments. Other oil service segments, such as subsea equipment and engineering will establish organizations in Northern Norway as well, but these will mainly be subsidiaries of leading companies with main offices in clusters elsewhere. In other words, several segments will create new jobs and competences in the region, but the ownership will not be regional. This development and transformation will, eventually, change the business environment in Northern Norway, and people will probably experience increased wealth as a result. However, for this to become a reality fields need to be discovered, and development projects need to be initiated.

To summarize, the activities required to create a growing oil service industry in Northern Norway are:

- More efficient extraction of oil and gas. Necessary do to the high cost curve in the industry
- More E&P activities at the northern NCS
- Evolvement of clusters
- Better utilization of existing knowledge and experiences
- More reality oriented involvement from stakeholders

So, what will be the solution to create an attractive oil service industry? When the demand and activity is present, potential actors will still face some barriers before becoming in a position to enter the market. This will be discussed further in the coming sub-chapters.

## **6.2 Barriers to enter the oil service industry in Northern Norway**

We have identified large market barriers for smaller operators in the M&M segment in Northern Norway. Basically, these barriers can be classified chronologically in the following sequence:

1. Certification
2. Pre-qualification and supplier approval
3. Established framework agreements
4. Resources
5. Competences

In this section we will discuss the certification and supplier approval process as the basic barriers an operator need to pass to qualify for the oil and gas industry. Resources and competences are such extensive factors in an organization that they will be analyzed in separate sub-chapters below.

First, resource based theory states the following about barriers: “Fundamental prerequisite for market power is the presence of barriers to entry. Barriers to entry are based upon scale economies, patents, experience advantages, brand reputation or some other resource which incumbent firms possess but which entrants can acquire only slowly or at disproportionate expense. [...] An industry standard (which raises costs of entry), or a cartel, is a resource which is owned collectively by the industry members” (Grant 1991: p.118).

Considering inexperienced operators, we have found that they face the challenges related to market barriers, essentially created by the industry leaders. In our case, industry leaders could be Aibel, Aker Solutions, Reinertsen or Apply Sørco as the contractors. The question is what strategy to choose for breaking down or reducing barriers. Operators not established within the industry standard should have an entering strategy that supports their objectives of future growth and positioning. Porter's generic strategies can provide an efficient guideline for an overall strategy. Keep in mind though, that a small operator would benefit from a narrow target market, as restricted resources would benefit from specializing in one area, rather than cover a wide selection.

Further, the barriers for growth and market share expansion should be carefully evaluated. A company with limited resources allocated to R&D would benefit from analyzing their position through Porter's five forces, as it is simple, yet efficient, and provides a good industry overview. When a company is certain about their position in the market, their capacity and their resources, and have an established strategy integrated throughout the organization, they need to know how to allocate their resources so they can efficiently exploit them.

The first barrier for an actor that wants to target the oil service industry is standardized third party certification procedures. Certification is a minimum requirement to become a service supplier. Operators need to establish systems and procedures providing a guarantee of proper operational standards, typically in accordance with the Achilles certification and/or ISO certification:

- "Achilles acts as an independent partner, providing validated data and insightful analytics to enable buyers across a sector to identify and manage risk, and suppliers to increase market reach while increasing compliance and minimizing costs for the network as a whole." (Achilles.com)
- ISO certification is a revision, auditing and consulting service that integrates the necessary quality systems and procedures within companies.

Helgeland V&M and Hammerfest Industriservice both said that the certification process is demanding and requires resources to be invested. The capital and time consumed in order to certify are resources necessary to spend to even be considered qualified for the approval process. The resources consumed on internal and external training and quality assurance is also important to succeed and become certified and approved.

The second barrier is the supplier's approval within the procurement databases of major buyers, i.e. the E&P companies and major contractors. These companies have their own supplier approval process for suppliers to be included in their procurement databases. Candidates are carefully evaluated and approved on quality and reliance measures to meet industry standards. Procurement contracts and ad-hoc purchase orders will only be given to companies who are registered as approved.

Amongst the greatest entry barriers identified, which essentially are those most challenging to bypass, seems to be the E&P companies' acceptance of the suppliers as approved in their procurement systems. Aibel, as Statoil's contractor at Melkøya, said that they could only use sub-suppliers that were approved in Statoil's supplier system when buying products or services. Invis, Hammerfest Industriservice and Helgeland V&M highlights the oil companies' rigid procurement procedures and the frequent use of framework agreements as not only a barrier for themselves, but also as a constraint of the free market potential when it comes to competition and price levels. Hammerfest Industriservice, supported by other industry sources we have spoken with, argue that rigid procurement systems sometimes provide inefficient material and service supply, and that costs can increase due to time-inefficient work progress.

Aibel stated that Hammerfest Industriservice had a challenging period to reach a proper quality level. They also implied that they had to perform jobs at their own yard in Haugesund because they could not expect their alliance partner to deliver the desired quality on time. This indicates that the pre-qualification process is an important factor for contractors to ensure quality on deliveries, even though, from a sub-suppliers view, it may provide challenging barriers. Remember, Aibel used Hammerfest Industriservice to include local content in the tender bid and had not necessarily time or resources available prior to the project start-up to train and equip their partner on quality assurance and standards. There could also be argued, from a contractor's position, that local content are a form of barrier. Without local content, contractors are less competitive.

The third barrier, as we have discussed already is framework agreements. These are long-term agreements made between E&P companies and a supplier or between a contractor and a sub-supplier saying that one should only issue services from the supplier or sub-supplier as agreed upon. Such agreements are often tenders or contracts made to simplify procurements and reduce bureaucracy on deliveries for individual projects. It could also benefit the parties to

establish long-term buyer-supplier relationships when communication and planning becomes a closer process and more continuous.

Invis argues that framework agreements prohibit them from supplying their services into the oil and gas industry. Also, the contractors offer the same services and will not allow a third party (Invis) to offer their services as a sub-supplier. Invis claims that the scanning and visualization services provided by the contractors are of less quality and more expensive than their own, referring to feedback from previous customers and oil and gas company's employees. However, we should bear in mind, with reference to Porter's theory on threats of entry, that there might be incentives for the oil and gas companies to keep their large scale suppliers. Switching costs and scale effects may need to be included in the equation, and the cost savings from switching to another supplier or divide contracts into smaller pieces may give transaction costs and additional administrative costs. There might also be of interest to keep the contractors supply a large scale of services so that capacity is available at any time. However, in Invis' case, with its differentiated and highly professionalized services, we do not see any obvious reasons why this company should be excluded from the contractor's service portfolio.

Local content policies break down barriers. These policies are meant to provide opportunities for local businesses to take part in the new industry at hand. Helgeland V&M received, due to local content initiatives, a direct supplier contract with BP Norge. Helgeland V&M had then the opportunity to use the knowledge and experience accumulated from this project to develop as an oil service supplier. Helgeland V&M is also building up an extensive network of sub-suppliers, providing a unique position as a leading maintenance provider on Helgeland and toward Northern Norway. The alliance with Aker Solutions offers competence to their organization. Helgeland V&M hires engineers from Aker Solutions that helps building up the company. Costs related to organizational development is said to be high. However, these costs are breaking down barriers since Helgeland V&M seems to adapt to- and establish industry standards within the organization.

The same appears to be the case for Hammerfest Industriservice. This operator is still only a sub-supplier, but organizational experience competence gained from the alliance with Aibel has strengthened the development and positioning process of adapting to industry standards.

We see that local content helps smaller operators into alliances with experienced contractors. Alliances with contractors in turn help the inexperienced operators to adapt into industry standards, which essentially are fundamental for being operational within the industry.

A fundamental requirement for the alliance to work is shown in the examples of Helgeland V&M's alliance with Aker Solutions and Hammerfest Industriservice's alliance with Aibel; the importance of forming an alliance at an early stage. Then the alliance can be promoted when delivering a tender bid. It does not necessarily benefit a company to form an alliance just to strengthen the resource base or the organizational competence. A contender must identify an alliance partner that has the right experience and market position. Helgeland V&M and Hammerfest Industriservice have accomplished their alliances successfully in terms of accessing the market and become approved suppliers. Petro Arctic stated that a transformation process of becoming an oil service supplier requires that the owners and the organization allocate sufficient resources, e.g. time and capital, to achieve this purpose. However, as for Hammerfest Industriservice, they generally need more business, one alliance and one customer is not enough to secure a sustainable future. They need to diversify their customer portfolio and increase incoming inquiries. To achieve this, Hammerfest Industriservice is constantly working toward establishing new alliances. This would probably be more challenging if they were to meet the barriers as an inexperienced operator. Now, as activity grows, they know that they are differentiated as the sole provider of mechanical workshop services in Hammerfest and knows how to exploit this position.

Obviously, hard work and smart strategic moves will by all means provide a solid competitive basis for the future. Timing is part of it. For Hammerfest Industriservice it was crucial to become approved by Statoil during the commissioning phase at Melkøya. If they had not managed to prepare and become approved during this phase, they might not have been approved later on, i.e. in the production phase. That would create implications for future approvals as well, since E&P operators tend to approve operators that are approved by other E&P companies more easily compared to those that are not. Hence, a supplier approval with one E&P operator reduces the barriers of approval for the next.

The oil service activity in Northern Norway is believed to increase radically in the years to come, and those that make a serious effort to establish a competent and sustainable organization will be rewarded. As the contractors and oil and gas companies told us, the closer the resources are the better. Obviously, this is relevant for cost efficiency reasons. Another important factor, as the local operators become more professional and experienced,

they may be able to deliver services that are competitive with the contractors on both price and quality without being favored through local content policies, at least, on small and medium contracts. In this case they may harvest from investments made earlier in resource- and competence-increasing initiatives enhancing the success potential in alliances and competitiveness. Through alliances with contractors, they will reach the industry standard and exploit the experienced gained. As the industry matures, there will probably also develop opportunities in consolidations among smaller actors, strengthening local industry presence.

Barriers can be shaped into opportunities, or even strengths. We see that the barriers of the oil and gas industry create strong incentives for an industrial revolution among small-scale operators in Northern Norway. It is crucial for a company to be aware of their obstacles and own weaknesses and shortcomings to know how to overcome them. The time invested in identifying the barriers will also generate knowledge regarding the opportunities, and with most other industries, knowledge is a competitive advantage.

### **6.3 How to efficiently allocate and exploit resources required to operate**

Our empirical findings discussed the recourses required to operate to be among the fundamental factors generating competitive advantage in a company. Resources are divided into financial, human and physical. Our findings recognized the main resources applicable to the Northern Norwegian oil service industry to be:

1. Investment requirements to position and enter the industry
2. Resources allocated to maintenance of procedures and routines
3. Access to sufficient qualified labor at given locations
4. Physical presence and capacity constraint in geographical sound proximity
5. Size and robustness of total resources; knowing the strengths and weaknesses
6. How to allocate the existing resources

The empirical findings was merely focused on different markets and segments, this sections' focus will be on how individual companies can allocate and exploit the resources they control. The main resource objectives will be discussed and explained through our findings and the applicable theory supporting our perspective. "Resource based theory suggest that numerous resources used by firms are inelastic in supply and are possible sources of economic rents. Thus although labor per se is probably not inelastic in supply, highly skilled and creative laborers may be." (Barney and Clark, 2007: p. 10) It is then not the resources available for use



that is important, but the ability to recognize and apply the right resources in the right situation.

The first resource requirement in the Northern Norwegian oil service industry is financial and relate to initial investments. As discussed in barriers to enter above, there are extensive investments required to position for- and enter the market. Thus, financial resources will be among the first challenges a firm faces when targeting oil service. Financial resources are usually obtained through investors and financial institutions, e.g. banks, private equity funds, venture capitalist, project finance etc. There appears to be a challenge for local actors to raise sufficient funds for larger investments on their own, e.g. due to insufficient financial capabilities, poor physical resource base and limited organizational competence. The companies can through strategic methods, e.g. alliances or mergers with other local companies, increase their overall capabilities. An alliance, as our findings suggest, does not directly strengthen the financial resource. However, the alliance can help increase and diversify the business activity, and thus provide better and more stable cash flows, which in turn reduce financial risk. If financial risk is reduced, shareholders and banks may be willing to invest more in the company, especially if the outlooks are bright. In the case of Hammerfest Industriservice, the owners have contributed by adding more equity when the company has developed. They could not have developed without this contribution. Thus, the incentives to have a financially strong partner should be present.

The investments made to position and enter the industry are mostly concerned with the quality standards and procedures. These have to be maintained, which require, according to our interviewees, extensive resource allocation. Also, the company routines needs to be supported and well communicated, which too requires resources. This is our second resource requirement. A firm is an extensive network of routines, and the individual firm needs to identify and map those routines to signify their meaning toward their operational motives (Grant, 1991). There are several sequences of routines, carried out both collectively and individually, from operational to management level. It offers insight into the relationship between resources, capabilities and competitive advantage. As Helgeland V&M stated, they have routines and procedures on everything. This enhances the communication of their operations and prevents confusion. It is also easily understood within the firm what their daily routines, and collective motivation and goal aggregate toward. The lack of these guided routines could potentially deface the company's efficiency. It is the further important to

recognize that the limitation of resources available to maintain this system presents a constraint on efficiency, and then competitiveness.

An example of the importance of company awareness on routines and procedures can be illustrated through the case of Hammerfest Industriservice. They experienced great increase in quality that was achievable through Aibel's expertise. Before Aibel, they operated their yard as they had been doing for its lifetime. Aibel however, with a different company structure and more industry-focused strategy was able to transfer their routines and systems over to Hammerfest Industriservice, contributing to increased efficiency, and then again competitiveness. The more aware and focused a company is on their strengths in routines pertaining to their resources and capabilities, the better the efficiency of utilizing their potential is achievable. In the case of Hammerfest Industriservice, this awareness was only possible through cooperation with established entities.

We have to remember that an organization will never be better than their employees, which constitutes every organizations foundation. Our findings suggest that Northern Norway experience lack of qualified labor in certain areas. Human resources have been discussed as a barrier to growth in the north above. However, it is not only the shortage of skilled labor, but also the constraint of inhabitants. According to SSB (central bureau of statistics) and Levert 2012, there are 3 896 FTE's<sup>19</sup> representing the complete oil and gas industry that reside in Northern Norway, whereas 748 FTE's are employed directly in the oil companies. Northern Norway inhabits approximately 470 000 people. This takes us to the third resource requirement, access to sufficient qualified labor.

The lack of skilled labor has been brought up as an issue during our data collection. The access to engineers that speak Norwegian is limited in Northern Norway, so it is categorized as a scarce resource. However, according to the Levert 2012 (2013) report there are few unskilled workers operating in the industry, 7.8%. Unskilled refers to those that have mandatory education as their highest level completed, in Norway it is 10 years combined primary (7 y.) and secondary (3 y.) school. The dominating education level of the labor force is vocational with 53.4%, higher educated is represent 38.8% of the force.

Aibel has expressed that skilled labor is their main challenge while operating in Hammerfest. The thing is, there might not be a constraint in Northern Norway on electricians, metal

---

<sup>19</sup> Full-time equivalent, labor

workers, welders etc., but it is hard to source those resources in Hammerfest, in which the operations take place. It is also a challenge to have resources moving in for jobs as the market for this kind of labor are already tight and Hammerfest is a small isolated city not considered attractive for settlements. Aibel needs to airlift personnel in to Hammerfest on shifts to cover their labor demand. Aibel hires skilled personnel from Hammerfest Industriservice. Thus we identify that direct access to labor is an alliance incentive for Aibel.

When it comes to more educated labor, which is also sometimes challenging to source, this is covered in the competence section below.

The fourth resource requirement is concerned with physical resources. Physical presence and sufficient capacity in geographical sound proximity is perceived in our findings as a competitive advantage in relation to time efficiency, and sometimes a prerequisite in tenders.

An interesting observation found is that Northern Norwegian operators do not see physical resources as a problem in the daily operations within traditional industries. Physical resources can be harbor capacity, warehouse, yard, office buildings, equipment and tools, infrastructure etc. However, what is important to highlight is that those existing resources have limited capacity. The capacity is not designed for applying large and complex development projects in oil and gas. That means, the companies with sufficient knowledge (typically first-movers) and financial resources enters from outside and invest in infrastructure and physical resources that meets the demand required. Local operators watch these resources being established and seek to join them through alliances, but they will not get to own them or control them to a large extent. Therefore, the local operators become second in line when contracts are being launched, simply because their resources are insufficient in comparison. In the M&M segment though, the physical resources are of less importance because the work performed is more intensive in human resources, not physical resources. Nevertheless, the physical resources, hence the capacity to perform modification work, was probably, together with competence, what made Helgeland V&M able to offer only maintenance on the Skarv tender.

The fifth resource requirement we will discuss is the awareness of size and robustness. Both factors have repeatedly been subject to discussion and frustration. However, it is key for a company to identify, yet again, where they are strong and where they can grow. Grant (1991) argues through resource-based theory that the first step to allocate and exploit resources, is to be aware of what actually exists in the company. Also, to make sure that the organizations strength is aligned with their strategic direction. Thus, managers should be aware of their

employees' strengths and weaknesses, so they can best utilize their potential. Allocating and exploiting their human resources where they create the most value will generate competitive advantage if optimized.

Human resources do not only exist on a personal level. The collective "brain" of the firm might also constitute a resource. However, it is important that they are aligned throughout the division or firm. Their core competencies, that is, those central, strategic capabilities, should be viewed as collective learning in the organization. The coordination of the diverse skills, and ability to integrate them into a collective direction will strengthen the efficiency and competitiveness (Grant, 1991).

Another important aspect to consider is in what market the company actually competes. The oil service industry is broad and has a wide variety of segments and markets that constitutes the complete picture. Two M&M companies might not be direct competitors as they both might already have contracts constraining their capacity to compete for tenders. Thus, they should not be perceived as real contenders for a third company in a tender bid. As one of the partner firms in Helgeland V&M puts it "It is not just to increase the piece of the pie, but the pie as a whole." However, companies should be very aware of their competitors, especially if they are in a highly differentiated market. A company's assessment of their competitor's relative capabilities, regardless of a broad or narrow target, will enhance their ability to build on a strategy that exploits own and others resources.

Helgeland V&M as an example, has their strategy targeting only the maintenance part of an M&M contract, due to their lack of resources required to comprehend the complete tender. If they would target not only this segment, but also the contract as a whole, they would lose the bid due to absent resources. Failure has been seen through companies extending their strategic activities beyond the scope of their capabilities. E.g. a company that tries to take on larger contracts than their capacity and resources support. From a competitors point of view, perceiving Helgeland V&M as complete M&M supplier would put them at a disadvantage as they might prepare for a competitor that does not exist. Thus, size and robustness of resources are important market condition that should be known.

Last, we will discuss how to allocate existing resources. A firms resources and capabilities are present in several levels of organizational identification, such as leadership style, values and traditions. The resource categories represent different aspects of a company, and they should all relate to the company's operation. To recap from the theory chapter: "The efficiency and

effectiveness of physical or financial resources, or the people in an organization, depend, not just on their existence, but on systems and processes by which they are managed, the relationships and cooperation between people, their adaptability, their innovatory capacity, the relationship with customers and suppliers and the experience and learning about what works well and what does not.” (Johnson et al. 2013: p.84). Efficient utilization of resources between companies is categorized through;

- Supplementary: Two or more similar companies cooperate to increase in size
- Complementary: Two or more dissimilar companies cooperate to increase their resource base

There need to exist a trade-off between efficiency and flexibility within these factors, as the lack thereof might support a direction not adoptable to change in the market. If a modification company is too protective of their traditions, they might neglect recognition of new technology that can enhance efficiency, thus decrease their competitiveness. Slipen Mekaniske, a part of the owner side in Helgeland V&M advertise their operations as quality traditions integrated with technological innovations, neglecting one of these factors could decrease their effectiveness, thus, diminish their attractiveness. In relation to strategic alliances, it is important to be aware of own and potential partners values, traditions etc. If any of these factors are too ambiguous in their differences, the firms might not be compatible in an alliance, even though their resources are complementary or supplementary. The companies’ routines should be somehow fitting, as well as their resources.

Grant (1991) suggest that “At the business strategy level, exploration of the relationships between resources, competition, and profitability include the analysis of competitive imitation, the appropriability of returns to innovation, the role of imperfect information in creating profitability differences between competing firms, and the means by which the process of resource accumulation can sustain competitive advantage.” (Grant, 1991: p. 115)

The resource-based approach to strategy according to Grant is shown below:

1. **Resources:** Identify and classify the firm’s resources. Appraise strengths and weaknesses relative to competitors. Identify opportunities for better utilization of resources.
2. **Capabilities:** Identify the firm’s capabilities: What can the firm do more effectively than its rivals? Identify the resources inputs to each capability, and the complexity of each capability.

3. **Competitive Advantage:** Appraise the rent-generating potential of resources and capabilities in terms of:
  - a) Their potential for sustainable competitive advantage
  - b) The appropriability of their returns
4. **Strategy:** Select a strategy which best exploits the firm's resources and capabilities relative to external opportunities
5. **Identify resource gaps** that need to be filled. Invest in replenishing, augmenting and upgrading the firm's resource base.

Firms seeking to optimize their resources but lack the financial strength to employ a consultant could potentially use this approach. It indicates the necessary steps, which also coincide with this sub-chapter structure.

There appears to be an advantage in cooperation with a major actor on a project-based contract due to gain in financial strength and size. "Northern Norwegian oil service actors position themselves, more often, through strategic alliances and cooperation with national established companies, a trend we experience to be positive. It results in important transfer of experience. Also, there is an increasing tendency that both national and international oil service actors perceive cooperation with a local actor as both valuable and important when establishing offices in the region. This further generates competence intensive jobs." (Levert 2012, 2013: p. 3) This strategy then, appears to potentially secure a strong position in the market. However, to prevent loss of ownership control within the company, strong and thorough contracts are required. How the supplementary and complementary organizations create strategic alliances are discussed more in detail in chapter 6.5. We will first explore competencies in an organization, and how they can contribute to increased utilization and efficiency of capabilities.

#### **6.4 Identification and application of competences**

The theory chapter identified resources to be "assets that organizations have or can call upon" and that competence is how "those assets are used or deployed effectively". As discussed in the previous section, human resources create the foundation of a company, as they are the company. It is therefore important that the individual company employ the resources with the applicable competence. We have already discussed the importance of awareness in relation to resources, and how they should be allocated for optimal efficiency. This section will further

discuss how to source competence from the capability. “Competitive advantage is increasingly a function not of factors but the ability to create and apply knowledge and technology to industry competition.” (Porter, 1990: p. 165) From our findings, we will highlight the following:

1. Competence requirements
2. How to create competence
3. The competencies present, and those missing
4. How to create advantage through competencies

Competence is a firm’s intangible resource. It is knowledge through skills, experiences and know-how, which together with resources represent a company’s capabilities. There are different degrees to why intangible assets are important to a company. The extent depends on the industry, market or segment the company competes in, and regarding their dependence on tangible vs. intangible resources (Johnson et al., 2011).

If we consider the competence requirement in the M&M segment, our findings identified that initially, industry experience is important. This is not only due to more efficient operations in relation to the learning curve, but also a matter of reputation. Reputation was highlighted by several of our interviewees as an important prerequisite to win contracts. The next competence that appeared to be of high importance was management knowledge related to how resources are applied. This issue seems to be a repeated topic in this discussion chapter; thus, negligence of management competence appears to be a major pitfall.

Competence is a very subtle and abstract concept as it is intangible and all humans hold different degrees and levels of it, applicable to all type of situations. The oil service industry can of course neglect to recognize certain competence areas, as they are not relevant to their line of work. Thus, the identification of those who are is very important. E.g. engineering competence is an important contributor to the oil and gas industry, and therefore a very important competence for all oil service actors. However, it will be important for an industry that all the participants collectively represent a sufficient amount of competences that are vital for innovation and evolvment. Thus, our findings suggests that there are good engineering competence in Northern Norway, but the amount does not reach a critical capacity to build a strong environment. A result of this is that the E&P companies and the contractors are “vacuuming” the market for the competence available. It might compare to a hierarchal division, where the strongest, in this case the E&P companies, secure their demand first, then

the contractors and last the local actors fight for the leftovers. There is a simple way of knowing whether or not individuals hold the desired competences. This is our second discussion point, how to create competence.

Education and experience are the most basic generators of knowledge. However, as individuals, we are in a situation where we can choose at an early age what type of knowledge we wish to acquire. Management and engineers is of course important factors in the business equation, but the ground workers are usually those who represent the largest portion of an organization. Further, there are several different lines of works within the same business operation. If we were to study the value chain of a company in depth, several competences would become apparent. Thus, it is important that oil and gas, and oil service, as a collective industry, communicate those competences required to be part of their industry. They depend on plumbers, welders, divers, firemen, etc. These are all competencies that usually are chosen at the age of 16. It can be argued, that a 16 year old does not hold the same knowledge and experience with the professional world, as an industry professional do. Thus, it is at this stage important to communicate to the youth, the options and incentives to acquire competencies required for oil service instead of other industrial directions. Aker Solutions argued that the competencies that naturally existed in Tromsø through the education channel, was easy to source. Those degrees not offered by educational institutions however, needed to be imported. This should provide an incentive to include relevant educational direction in Northern Norwegian schools and universities, if the aim is to strengthen the local oil and gas presence in the region.

If we look at skills that are a result of experience, Aker Solutions, Statoil and Aibel all states that there exist special competences and skills that people living in the north naturally possess, regardless of education. This is our third discussion topic, present and missing competence.

If we ignore common knowledge that is not scarce or hard to obtain, but focus on special areas where local actors have a natural advantage due to experience, arctic knowledge becomes important. This competence can potentially represent a competitive benefit to the northern operators doing business in or towards the oil and gas industry. Experiences with harsh climate- and weather conditions are crucial due to the offshore operations. Especially the fishermen hold knowledge that is unique when it comes to maritime operations in Arctic waters. The competence in this industry can be adapted into the oil and gas industry through active recruitment and knowledge sharing via academic institutions and knowledge networks e.g. Petro Arctic. However, due to lack in extensive research on competencies and how they



connect to the environment, it is difficult to find a theoretical reference supporting this claim. We therefore base this more on observation than acknowledged framework. However, Arctic competence is not a phenomenon reserved for the traditional northern establishments and local operators. The presence of alliances and cooperation have allowed for knowledge transfer, or “deeper learning”. “Deeper learning is the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations (i.e. transfer). Through deeper learning the individual develops expertise in a particular domain of knowledge and/or performance. (Pellegrino and Hilton, 2012: p. sum-4) An example, Helgeland V&M has generated their organizational knowledge through:

- Knowledge sharing amongst alliance members
- Cooperation with Aker Solutions
- Experience from the Skarv contract, and
- Developing an external network of suppliers

Hammerfest Industriservice, as another example has mainly accumulated their knowledge by intervention and cooperation with Aibel, and by challenging projects acquired from the alliance with Aibel. The transparency for this collective knowledge in utilizing resources, innovate and perform according to industry standards has also given the major actors insight into the smaller actors local competence.

Transferable knowledge will not only be related to arctic experience, it can also concern simple industry elements. We have previously amplified the need for small operators to have a stable income if they want to survive in oil service when activity is low. Actors, such as Helgeland V&M, do operate in other more traditional industries. Within the M&M segment, skills are highly transferable to other industries, which means that other industries are transferable to oil service. This may not be a directly present or absent competence, but it do suggest that the Northern Norwegian oil service industry might hold a bigger pool of skilled labor than what are being presented through industry numbers. It will then be a company’s skill, or competence, to identify theses opportunities, and utilize the competencies existing. This will bring us to the last discussion point, how competences can generate advantages.

Resource-based theory indicates that alliances are of highest importance for those that want access to knowledge, i.e. inexperienced suppliers. Our findings suggest the same. The experienced suppliers are primarily looking for cost and operational efficiency in alliances

while inexperienced suppliers are primarily looking for knowledge and guidance to acquire industry standards.

Subtracted from Porters five forces, we can through the entry barriers identify some vital advantage points relating to competence:

- Scale advantages
- Learning curve
- Switching cost

Scale advantage refers to a firm's ability to produce more efficiently than their competitors. In practical terms this means that between two or more companies, the one that provides the identical product or service at lower cost or time holds a competitive advantage. The learning curve suggests much of the same, but emphasize that learning, or knowledge and experience, are acquired when applied. Thus, over time, employees will increase their efficiency due to increased knowledge. Scale advantage can be a result of both better allocation of resources and better utilization of competence, separately or combined. Hence, the two in some aspects correlate. Switching cost is a direct result of utilizing knowledge to create barriers for competitors targeting your customers. If a company can create large enough barriers for their customers in switching suppliers, there will be limited incentives for competitors to advance. This is probably why Invis is having a hard time penetrating the market barriers. In theory, the switching costs should exceed the present value of savings when switching, for it to be a barrier. According to Invis, their services are more efficient and should provide cost savings regardless.

We also see that organizations with highly skilled and specialized labor are more attractive alliance partners for the contractors compared to companies that do not possess valuable labor. The degree of Arctic skills within this labor category is difficult to measure.

Nevertheless, as skilled labor is identified as a bottleneck in Northern Norway, companies positioned toward labor-intensive projects, with sufficient labor at their disposal, will have a competitive advantage anyhow.

Alliances and M&A's are important strategic tools to enhance the regions overall capabilities. Apart from competences in the field of profession, small suppliers have competences in Arctic operations and in exploiting local resources. The contractors and multinational suppliers possess a broad range of competences and have the capabilities to get hold of complex and comprehensive projects. If these organizations combine their competence, as

Aker Solutions and Helgeland V&M, the alliance can provide capabilities that are superior to the competitors’.

To summarize, in the Northern Norwegian oil service industry, there are certain competence requirements. There is not an absence of competence that is the main problem, but the capacity of it. The region lack the sufficient amount required to build a strong foundation for growth. However, as we have mentioned earlier, the E&P activities are expected to increase, and with the long time frame the industry operate under, possibilities for sourcing these competences locally are present.

Local actors have a strategic advantage in their localization near the coast and world-class competence in Arctic marine operations. Their disadvantage is high competition for projects, especially from the world leading knowledge hubs in southern Norway, and shortage of skilled labor. The main threat is that leading multinational suppliers out-compete local suppliers based in Northern Norway, keeping decisions authority and competences in clusters in Southern Norway (Menon 2013, p. 22). However, strategic alliances seem to decrease these barriers.

We see that inexperienced suppliers have the largest incentive for entering alliances. Both our findings and resource-based theory support this outcome. However, experienced suppliers have incentives to enter into alliances to acquire specialized Arctic skills and knowledge, which may not be easy to source otherwise. The major knowledge transfer is expected to move from the experienced to the inexperienced supplier. It is important to underline that as the inexperienced supplier acquire industry standards, the value of the alliance may increase significantly for the experienced supplier.

We will in the next section discuss how and why alliances are the preferred strategic tool to overcome the different industry difficulties discussed so far in this chapter.

## **6.5 Strategic alliances**

This section will connect the resources and competencies analyzed in the above sections to strategic alliances.

Per our data we have identified three different approaches to alliance establishments:

1. A group of small companies approach each other to enter an alliance
2. An inexperienced (small) company approach an experienced (large) company

3. An experienced (large) company approach a small company (regardless of experience)

We will now discuss the three different approaches and relate our findings to theory. We acknowledge at this stage that we will not be able to conclude any groundbreaking causality, however, we can formalize opinions regarding the importance of alliances and generalize strategic approaches within the industry and area we are investigating.

### **6.5.1 The case of small actors that together form a strategic alliance**

In this scenario we use Helgeland V&M as an example. Helgeland V&M consist of seven small and medium companies in both related and supplemented industries; none has their traditional operations within oil service. Each company contributes with their resources and competences into the alliance. Some of them may seem similar at first, but if we consider the companies' capacity and experience, we find the capabilities to be diverse. The alliance partners' motivation of forming a strategic alliance appears to be both of complementary and supplementary reasons. The alliance partners wanted to enter and gain strength and size in the M&M market. Thus, have identified different partners supporting these objectives and that have capabilities to contribute. We will analyze their business concept further next.

Generally, if a company wants to grow there are three alternatives, through M&As, strategic alliances or organic growth. This thesis main focus is alliances, but when is a strategic alliance the preferred strategy? Das and Teng (2000: p. 33) argue that, "[...] alliances are more likely to be formed when both firms are in vulnerable strategic positions (i.e., in need of resources) or when they are in strong social positions (i.e., possess valuable resources to share)". We see this as especially relevant for smaller actors in the Northern Norwegian oil service business. Small actors may not have the financial resources to acquire other companies, and mergers are a costly affair with potential high risks of failure if the companies have limited business or organizational competence on how to exploit economies of scale and synergy effects. Also, Das and Teng (2000: p.37) argues that strategic alliances are favorable "[...] when unwanted assets are mixed with needed assets, and the two are not readily separable, acquisitions inevitably result in unneeded assets. When non-desired assets are not easily separable, strategic alliances allow the partner firms to access only the assets each desires while bypassing non-desired ones, thereby augmenting overall value. Thus, the distinct advantage of strategic alliances is to have access to precisely those resources that are needed."

According to Helgeland V&M, the owners of the alliance, collectively have the resources and competences within the following professions (illustrated in table 6.5.2):

**Table 6.5.1.1: The Helgeland V&M organization**

Helgeland V&M	Engineering services	EIT	Tie-in Personnel	Prefabrication	Mechanical	Inspection & control	Total
<b>Profession</b>	Engineering services, Project management, EIT, mechanical, civil engineering, HSEQ	EIT, IT, HVAC, automation, fire alarm systems	Welders, sheet metal workers, mechanical workers, plumbers, industrial painters, riggers, frosio inspector level 3	Welding, SIP, modification, coating, pumps & vents, hydraulics, structural, piping.  Carbon-materials, stainless steel, aluminum and titanium.	Ship repairs, ship maintenance & modification dry docks, fabrication, piping, welding, coating and hydraulics	Inspection, testing, certification, technical consulting and instruction	Delivers goods and services in relation to maintenance and modification services on-/offshore

*Source: Helgelandvm.no*

However, their combined resources do not qualify them for modification work. Hence, it appears as if the modification work require more resources than these companies together can source. Therefore, Helgeland V&M is dependent on Aker Solutions as an alliance partner that covers the modification aspect of the work, as previously discussed. What is more interesting to highlight, and of more general application, is that the alliances showed to be a particularly important strategic tool for the partners to exploit the potential of the business opportunities that appeared right outside their coastline.

The process of forming the alliances, including all legal aspects, was professionally initiated and set up. Secondly, the companies participating had complementary, supplementary and competent resources to postulate. As previously mentioned, BP Norge had an important role in initiating local content through splitting up the contract. Nevertheless, Helgeland V&M states that their tender offer was competitive. Aker Solutions also appears to have had an open mind for cooperation between the parties for the M&M contract. Further, Aker Solutions says they have the ultimate responsibility for the contractual terms and conditions, while Helgeland V&M says Aker Solutions is a subcontractor, but with the responsibility to guarantee for the contractual terms and conditions. Both statements are probably true, in a way, but the management formalities are of less importance in this regard. Thus, if similar

opportunities evolve later on, small actors should be aware of the potential existing through strategic alliances.

The Helgeland V&M model is recognized for its success in the industry environment in Northern Norway. It represents opportunities, and it makes the importance of cooperation with other industrial actors and contractors visible. It also highlights that several small companies together is not sufficient to gain a direct contract with oil and gas companies, so they still depend on major actors support. The entry barriers are as identified previously, extensive. Helgeland V&M argued that they had a better potential for winning new contracts as an experienced operator and to increase turnover as activity grows. Thus, strategic alliances were key to reach this situation. However, successes like these are dependent on the contract providers, like BP Norge, which takes local content initiatives and has patience to spend resources to build up an industry environment outside their core business. As far as we know, BP Norge is the first to split M&M contracts on the northern NCS.

To summarize: Failure to form an alliance, in this example, would be a serious disadvantage. It seems as none individual supplier in Helgeland has the capacity, resources or competences to do offshore contracts themselves, nor to form an alliance with Aker Solutions without an alliance. The service providers are fragmented in terms of geography and competences, i.e. they provide services within a narrow line of profession with significant distance between them. Maintenance work on offshore installations demand a broad line of services supplied, thus, several competent and specialized companies can pool capabilities to meet the demand. Without an alliance, the local operators that formed Helgeland V&M would not have qualified for the M&M tender and Helgeland as a region would have been less exposed to the offshore activity in the Norwegian Sea. The alliance was formed to create what Das and Teng (2000) call “superior resource combinations that single firms cannot obtain”. None of the alliance partners would have had the financial resources to obtain resources or competences through M&As, nor the time to grow organically due to the tender. Without local content focus and a successful alliance, the offshore business environment on Helgeland would evidentially been less developed. Helgeland V&M used much time and resources developing a professional supplier network in the region, a crucial point in securing a stable foundation to grow from.

### **6.5.2 The case of a small actor's strategic alliance with a major actor**

In this sub-chapter we will analyze the importance of a small actor's ability to enter into an alliance with a large player. This scenario builds on the interviews conducted with Helgeland V&M, Hammerfest Industriservice and Invis, as well as secondary sources.

The main motivation for small suppliers to initiate strategic alliances appears to be the opportunity to acquire the industry standards when positioning for the oil service industry. They may have more or less appropriate resources to perform small projects or contracts. However, the major constraint is knowledge and experience.

Grant and Baden-Fuller (2004: p. 64) argues that: "We recognize that in a diverse phenomenon such as strategic alliances, there are likely to be multiple motives and that a single theory cannot address all types of alliances. [...] However, our contention is that knowledge accessing provides the predominant motive for alliance formation, especially within the knowledge-based sectors where alliance activity has been especially prevalent. [...] Several studies of strategic alliances have identified the sharing of knowledge (including technology, know-how and organizational capability) as their dominant objective. Among these studies, the great majority have adopted an organizational learning perspective: assuming that the goal of strategic alliances is to acquire the knowledge of alliance partners." The theory indicates that alliances are of highest importance for those that need access to knowledge, i.e. inexperienced suppliers. Our findings suggest the same.

The experienced suppliers are primarily looking for on-site capacity for cost and operational efficiency reasons and better competitiveness in tender processes. Inexperienced suppliers are primarily looking for knowledge, guidance and training to acquire industry standards. The main incentive for acquiring these appears to be the opportunity to access large contracts that will provide a high level of activity for a long time. The opportunity to grow extensively and be recognized as a professional and important business may be social incentives.

With the oil and gas industry's extensive requirements and large barriers for new entrants, inexperienced suppliers should acknowledge their individual capabilities to be insufficient. However, they should also be aware of any local content policies, and actively prepare for and initiate potential alliances. An alliance with an experienced supplier may provide increased turnover in diversified projects and thus opportunities to invest in new resources and to hire industry professionals to strengthen the overall capabilities, step by step.

Considering Hammerfest Industriservice, the alliance with Aibel gave an opportunity to develop the organization from a small-scale shipyard to a capable workshop performing all kinds of pre-fabrication modification work for the Melkøya plant. Statoil has even ordered supplies directly, and Aibel hires mechanical personnel from Hammerfest Industriservice. However, the transition phase is resource demanding. It requires investments in new resources, certification processes and specialized competences and skills. The transition takes time and the organization has to set aside many years to become a recognized supplier. Suppliers in the North Sea have had 40 years to position and develop while suppliers in Northern Norway have just started.

What we see from the two companies Hammerfest Industriservice and Helgeland V&M, which has succeeded with their respective alliances with a contractor, is that they have several alliances. Hammerfest Industriservice has an alliance with the large engineering company Langset (that owns 54.4% of Hammerfest Industriservice) and Helgeland V&M is an alliance already, as previously discussed. This proves that these companies actively seek to increase their resource and competence bases and positions for new projects. Both suppliers seem to have succeeded in positioning as noteworthy oil service operators and they are prepared for future growth. Both also have invested extensive amounts of capital and management time to develop, with owners that have a long-term strategy and are willing to take the risk. Petro Arctic stated that these are criteria to succeed, and that if an operator focused on these, “you are guaranteed to succeed with the alliance”.

The importance of alliance establishments seems to be biased. “From a resource-based point of view, the very objective of forming alliances is to join forces with partners in order to pursue market opportunities that are otherwise beyond reach” (Das and Teng 2000). The market opportunities are not beyond reach for contractors, but it is beyond reach for inexperienced suppliers, hence a power miss-match. We see that local content requirements demand large suppliers to include local sub-suppliers, and an alliance is obviously an appropriate way to include local content. In that contractors chose sub-suppliers that have an ability to provide a certain advantage to their value chain, i.e. access to labor and production facilities.

Invis entered into an alliance for supplementing reasons. They wanted to increase their capacity level, but also attain a better reputation by association. The owner and manager of Invis acknowledge their capacity to be the main constraint for winning contracts as an oil service operator. They have the competence required, but lack sufficient manpower to handle



large contracts and several jobs simultaneously. However, according to Invis, these are challenging times even with the largest company in their segment as an alliance partner. But, they believe that the market barriers will decrease as the company presents their alliance. Thus, again we are back to the size issue and how important it is in the oil service industry. Even if their service does not require substantial manpower per project, the total size of the company is central.

### **6.5.3 The case of a major actor's strategic alliance with a small actor**

This scenario builds on the interviews conducted with Aker Solutions and Aibel, as well as secondary sources.

The main motivation why large contractors attend strategic alliances appears to be the possibility to access resources and capacity close to the site of operations and hence optimize cost efficiency and simplify the supply chain.

Das and Teng (2000: p. 37) present two motives for firms to use strategic alliances or M&As for growth purposes: "(1) to obtain others' resources; and (2) to retain and develop one's own resources by combining them with others' resources." To obtain is referred to as the possibility to acquire others' resources while retain is the possibility to keep valuable resources within the firm. Further, two dynamics favor an alliances over M&As: "First, strategic alliances serve as a more viable option than M&As when not all the resources possessed by the target firm are valuable to the acquiring firm. Second, since a certain degree of asset specificity is usually involved, some of the less valuable or redundant resources in a M&A cannot be easily disposed of without taking a loss". This is relevant for all companies. However, per our understanding the big contractors are precise in considering how to acquire resources. They recognize their position as superior to the local actors, and exploit this through stronger bargaining power. Hence, through strategic alliances they can gain control over valuable resources without great capital expenditures. Also, contracts are often limited in size and time, so if an acquisition takes place there is a certain risk of holding excess capacity. Also as mentioned above, strategic alliances allow for exclusion of those non-desired resources, and access to precisely those needed. These arguments summarize why experienced suppliers, as the contractors, in many cases prefer alliances. Keep in mind that contractors have operations in highly diversified geographical contexts. They rely on other suppliers since control over the value chain means high capital expenditure, which not necessarily generates additional profits.

In Aibel's case, the Melkøya operations are geographically out of reach from the company's established infrastructure. The main constraint is access to skilled personnel and yard capacity. Aibel need to airlift personnel into Hammerfest on expensive rotation arrangements. In addition, Aibel knew that Statoil would consider local content for the Melkøya tender and an alliance would increase competitiveness. Entering an alliance with Hammerfest Industriservice does not require any financial obligations (even though Aibel owns 13 percent of the company), just an opportunity for a close relationship with a local industrial operator as a sub-supplier and resource holder. The alliance reduces the operational exposure on Aibel's capacity. Instead of shipping steel constructions from Haugesund, which reduces Aibel's yard capacity and drives transportation costs and lead-time, Aibel can have the work done on site. It seems like a win-win situation. However, according to both Aibel and Hammerfest Industriservice, it has taken long time and a lot of effort to develop Hammerfest Industriservice into a professional supplier. Aibel has spent time and resources on quality assurance and consulting to Hammerfest Industriservice. Sometimes, according to Aibel, supplies have been insufficient in quality, and simple construction jobs have been unreasonable delayed. Thus, there is an operational risk for Aibel if their alliance partner cannot be trusted when it comes to appropriate delivery standards. However, the cost will, regardless, be considerably lower than the cost of not having the M&M contract at all.

To summarize: As an important driver of industry development, we recognize that E&P companies have significant power and responsibility to create incentives for supplies' cooperation and local involvement, e.g. through alliances. Porter (1998) suggests that governmental policies can limit access to new projects through barriers. That means if there is local content policies favoring those contractors that in one way or another have included local suppliers in their network, they will be favored in a tender process. Eni Norge says it does not matter if they force contractors to include local operators or not, the key to local development is to make contractors and suppliers establish organizations and infrastructure locally. Therefore, it has been hard for the Northern Norwegian suppliers to initiate negotiations with Eni Norge on the basis of local content. However, to develop the industry is in everyone's interest, and to maximize the regional supplier network it is important to include local businesses and labor.

The case with Aker Solutions shall also be included into the discussion. Aker Solutions probably did not need local operators to contribute resources to the Skarv contract. However, if we refer to game theory, it is a choice of losing the contract completely or to include an

alliance. Obviously, it is a better deal to win the contract through an alliance. Aker Solutions both establish in a market where they had to invest in infrastructure to become a regional player, and via the alliance, got hold of resources such as skilled. As a long term strategy, the alliance with Helgeland V&M may be important for Aker Solutions as it makes an important foundation for business opportunities when the activity in the Norwegian Sea grows.

Aker Solutions have presented several M&A's in the Helgeland region. So far, they have purchased these companies:

- X3M invent, an engineering company located in Narvik that are specialized in well technology. The motivation behind the acquisition was expanding their portfolio.
- Sandnessjøen Engineering, another engineering company within MMO, the motivation was securing engineering competence in proximity to the oil and gas industry in the Norwegian Sea.
- Ruukki in Sandnessjøen, construction and mechanical facilities in which will support and strengthen their market position in the subsea segment towards the Norwegian Sea in addition to capacity within the M&M segment.

These purchases can be categorized as backward integration, as Aker Solution does not depend on outsourcing to other sub-suppliers. According to Porters' five forces, backward integration is an entry barrier threat. An acquisition separate an alliance through the lack of joint ownership, instead, one organization takes ownership of another.

To conclude, we have identified that different actors have different motives for establishing alliances of various forms. It seems clear that the smaller operators are dependent on successful alliances with a leading company in their segment to position as an oil service company, and grow within that market. The contractors seek alliances to access resources that create opportunities of cost efficiency. The contractors are not dependent on alliances to perform the job, but as we have seen, there is a competitive advantage in including local operators as alliance partners to demonstrate local content in tender bids.

## 7. Conclusion

In this chapter we will summarize our findings related to alliances in the oil service industry and suggest how alliances should be utilized as a tool for efficient positioning within the oil service sector.

The conclusion will relate to our research question.

*Advantages, opportunities and challenges achieved through strategic alliances positioned for the oil service industry in Northern Norway*

Our main conclusions are:

1. The greatest advantage of strategic alliances for inexperienced operators is the ability to acquire the industry standard, and if they succeed, be in a competing industry position.
2. Strategic alliances is the preferable strategic method compared to M&A's and organic growth to acquire the industry standard for inexperienced suppliers within the oil service industry in Northern Norway
3. The human resources present in Northern Norway lack a critical capacity level required for a robust industry environment.
4. Northern Norway is dependent on financial resources from the national oil and gas industry.
5. Experienced suppliers' incentives for entering alliances are access to physical and human resources and special Arctic operational competence.
6. Local content requirements are an important and effective way to include and develop inexperienced suppliers. The long-term industry benefits may surpass the short term efforts.

We will briefly highlight our findings related to advantages of forming alliances. Based upon the alliances we have studied, secondary data collected and theory, we have a basis for making valid statements regarding the importance of alliances within oil service in Northern Norway.

We have identified that an alliance have the following outcomes for small operators:

- Enables the smaller operator to participate in markets (contracts) that they otherwise would be excluded from

- Reduces barriers for operators that currently do not hold the capabilities considered necessary for performing according to industry standards
- Can, if the resources are complementary, provide higher overall activity for the smaller operator, which increases financial resources and, in turn, enables the opportunity to acquire new physical and human resources
- Create an opportunity for knowledge transfer, which introduces the smaller operator to competence accumulation required to enhance resource utilization and penetrate the barriers of industry standards

The Northern Norwegian industry environment is fragmented and inexperienced within oil and gas. The operators are not in a position to compete on contracts in the market without going through a process to become certified and approved, and without a transformation of resources and competences within the organization to adapt to industry standards.

Our findings suggest that entering a strategic alliance is a crucial strategic move for inexperienced local operators, which have an interest in positioning as an oil service operator. The motivation is access to long-term contracts that may provide a boost in turnover. However, this market is reserved for companies that are serious, and have the incentives to invest time and financial resources in the transformation process, and to strengthen the organizational skills and competence. First then is an alliance with an experienced and well-recognized industry operator a plausible option.

Due to E&P companies' high standards and strict supplier policies, entrance with an experienced partner is preferable. The partner guarantees for the supplies and therefore reduces entry barriers substantially for the newcomer. There is also an opportunity to exploit local content regulations set by the government, increasing the incentives for contractors and other experienced operators to include and train inexperienced operators.

In conclusion, small and inexperienced operators should identify and seek alliance partners with an appropriate market position to reduce entry barriers in the positioning process toward the oil and gas industry. As we have seen, not only will the alliance bring important knowledge exchange opportunities, it will also provide a stronger position to acquire new projects going forward. Operators that are serious and have a long-term strategy to establish within an industry that expects prosperous growth potential, and have the opportunities for successful alliances will succeed.

We have identified that an alliance have the following objectives for a major contractor:

- Increase competitiveness in tender bids where local content is considered beneficial or is a requirement
- Reduce operational expenditures as capacity is closer to site, which is especially relevant for projects with a limited time frame
- Can increase physical and human resource bases without capital expenditure exposure
- Stability of suppliers network without additional costs
- Can enhance access to competences that are considered scarce, such as Arctic operational expertise

Our findings suggest that alliances are not crucial for contractors. They will get the work done regardless of the participation of local operators. This said, there are two variations of partner integration: either where the contract is split between the contractor and the local operator, or where the local operator is included as a sub-supplier. If the local operator is an equal partner, there is, on paper, symmetrical power balance between the alliance partners. However, superior competence may provide leverage for the contractor; the local operator is more dependent on the contractor than vice versa. If the local operator is included as a sub-supplier, the power ratio is asymmetrical, the contractor having leverage. The contractor will then have more room to exploit its partner's resources, however only when it is financially beneficial. Being a rational operator, the contractor seeks to utilize any spare capacity, for example on human resource supply or modification work, if the lead times provide supports this opportunity. On the other hand, we see from the case of Helgeland V&M, that Aker Solutions obviously sees an advantage in developing its alliance partners' competence. From the case of Hammerfest Industriservice, we see that Aibel have recognized an advantage in building up local competence related to modification work.

In conclusion, the contractors use alliances to strengthen their suppliers' network for cost efficiency reasons, and to increase competitiveness in tenders with local content requirements. Additionally, there is obviously a business potential in developing a stronger oil service environment in Northern Norway, where alliances are an important factor in the value creation, du to e.g. knowledge transfer.

Contractors should have no incentives to control the entire value chain themselves, but they know a competent and experienced supplier network close to site will benefit the industry

(and themselves) in the long-term. The benefits we have identified are international competitiveness and control within core markets (NCS).

We have identified that an alliance between several small suppliers have the following objectives:

- Can be crucial for being regarded in tender bids, given that the resource pool is considered sufficient
- Increases the resource base and, given complimentary and supplementary resources, increases competitiveness as market barriers might be reduced
- Increases overall resource utilization through better knowledge of resource management, given complimentary resources
- Stimulates cross organizational learning and knowledge exchange, providing increased competitiveness through new competence barriers related to industry standards are reduced
- Increase overall competence among the members
- Reduced barriers if the capabilities is positioned to exploit local content requirements

Our research found that the opportunities for making contracts directly with the E&P companies are extremely limited. Even the possibility as a sub-supplier with the contractors is restricted. We identify four supporting factors:

1. The contractors are squeezed to maximum on the tenders financially, providing an extensive risk of additional costs if sub-suppliers fail to supply on time and budget
2. Contractors win tenders based on proven capabilities in supplying demanded quality on time and within budget. If a sub-supplier cannot demonstrate a certain track record proving the ability to meet industry standards, there is a risk related to employing this supplier
3. There must be an incentive for including inexperienced industry actors; e.g. contractual local content requirements, scarce resources or competences considered important for operations in the region, or the potential for improved operational and/or cost efficiency in employing the supplier.
4. The market barriers are high and the competition from experienced operators harsh

The participants in the Northern Norwegian oil service industry environment is very fragmented, and the individual actors need to identify market potential and pool together

resources and competences that have a competitive configuration. The Helgeland V&M model is competitive and risk averse as the alliance partners stay within their traditional markets. However, through the joint venture the partners also position as successful oil service operators exploiting local content requirements set by the E&P operator. A strategic alliance is the most efficient tool if the operators are inexperienced and have limited financial resources. The main reasons justified:

1. The individual companies does not have financial resources or competence to create successful M&As without severe risks, e.g. related to organizational integration, uncomplimentary resources, efficient resource management, exploitation of scale advantages, etc.
2. The firms are vulnerable in the transformation process toward becoming an oil service operator. Alliances may be easier for the partners to relate to, as it is meant to increase business, not totally transform the organizations
3. Alliances are efficient since only the resources found complimentary need to participate in the alliance. Resources related to traditional markets remains in traditional markets.

Concluding remark:

We have found that alliances will be the best option for growth and positioning within the oil service industry when the prospective cooperation target a project or contract that has a given time frame or requirements. In comparison, M&As will be preferable if the corporate objective is to increase the company's resource portfolio in long term.

### **7.1 Our suggestions to industry operators**

The oil industry represents a major market potential for companies that have something to offer, either if it is a product or a service in demand. Before making a strategic decision to enter this industry, the company should analyze its potential position in a specific industry segment and search for professional input from established industry actors, consulting organizations and academic institutions, on how to optimize the positioning process. Then, the organizational resources and competences should be carefully evaluated. In most cases, these are considered insufficient to target projects within the oil and gas industry. The company should analyze the regional industry environment and target companies with complimentary and/or supplementary resources and competences to pool these through an alliance to market and offer a competent product or service. The potential partners should



study the similar cases, e.g. the Helgeland V&M case, to understand how to approach the alliance establishment and positioning process.

Triggers should be:

1. Limited existing capacity within your business and a future potential for capacity growth or competition
2. The ability to adapt quickly into high-end industry standards (e.g. necessary certifications and supplier approval)
3. The ability to find alliance partners with appropriate motivation and capacity to join the same strategy
4. The ability to exploit local content requirement in tenders or contracts related to future development projects

## **7.2 Our research contribution**

This thesis has formalized knowledge and evidence related to the importance of proper strategic decision-making. We have highlighted the opportunities and challenges within the oil service sector in Northern Norway and the advantages and values of strategic alliances as a strategic tool in an industry positioning process.

Our findings suggest, backed by relevant theory, that strategic alliances are essential for a successful industry approach. We do hope that this knowledge can be used both for corporate decision-making and as a basis for further research into the topic.

## **7.3 Our suggestion for further research**

We found in our analysis that we lacked sufficient information regarding the actual resources and competencies that are required in a given contract. Also, we did not have the means to evaluate the complete oil service industry and had to limit our focus to one or two segments.

Further research to elaborate more on the industry could be on:

- What type of resources and competencies are required in the different tenders
- Is there different attractiveness of being a direct supplier (contractor) compared to a sub-supplier?
- Which factors would enhance immigration to Northern Norway
- How can the oil and gas companies split contracts without experience added risk and costs

## References

- Barney, Jay B. and Clark, Delwyn N. (2007) *Resource-based theory; creating and sustaining competitive advantage*, Oxford University Press
- Charmaz, K. (2006) *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage, p. 162- 3.
- Chi, T. (1994). *Trading in strategic resources: Necessary conditions, transaction cost problems, and choice of exchange structure*. Strategic Management Journal, 15: p. 271–290.
- Doran, George T. (1981). *There's a S.M.A.R.T. way to write management's goals and objectives*. Management Review, Volume 70, Issue 11(AMA FORUM), p. 35–36.
- Downloaded from jom.sagepub.com at Universitetet i Nordland on January 28, 2014:
- Das, T.K. and Teng B. (2000). *A resource-based theory on strategic alliances*. Sage Publications
- Easterby-Smith, M., Thorpe, R. and Jackson, P. (2012). *Management Research 4<sup>th</sup> edition*, Sage Publications
- Eisenhardt, K. M., & Schoonhoven, C. B. (1996). *Resource-based view of strategic alliance formation: Strategic and social effects of entrepreneurial firms*. Organization Science, 7: p. 136–150.
- Ernst & Young. (2013). The Norwegian oil field service analysis 2012. Downloaded 14<sup>th</sup> January 2014 from <http://www.ey.com/NO/no/Industries/Oil---Gas/The-Norwegian-oil-field-service-analysis-2012>
- Glaser, B. G. (1978). *Theoretical Sensitivity*. Mill Valley, CA, Sociological Press.
- Grant, Robert M. (1991). *The Resource Based Theory of Competitive Advantage: Implications for Strategy Formulation*, California Management Review, spring 1991, p. 114- 135
- Gulati, R. (1995). *Does familiarity breed trust? The implication of repeated ties for contractual choice in alliances*. Academy of Management Journal, 38: p. 85–112.
- Hennart, J.F. and Reddy, S. (1997). *The choice between mergers/acquisitions and joint ventures: The case of Japanese investors in the United States*. Strategic Management Journal, 18: p. 1–12.

- Henriksen, J. T. and Sørnes J.O. (2013). *Ringvirkninger av Skarvutbyggingen – Sluttrapport 2013*. Bodø: University of Nordland.
- Johnson, G., Whittington, R., and Scholes, K. (2011) *Exploring Strategy*, Financial Times: Prentice Hall.
- Kogut, B. (1988). *Joint ventures: Theoretical and empirical perspectives*. Strategic Management Journal, 9: p. 319–332.
- Madhok, A. (1997). *Cost, value and foreign market entry mode: The transaction and the firm*. Strategic Management Journal, 18: p. 39–61.
- Menon Business Economics. (April 2013). *Sektoranalyse av annen industri og næringsvirksomhet i Nord-Norge*. Downloaded January 20<sup>th</sup> 2014 from [http://www.regjeringen.no/pages/38376264/Annen\\_industri\\_og\\_naeringsvirksomhet\\_i\\_Nord-Norge.pdf](http://www.regjeringen.no/pages/38376264/Annen_industri_og_naeringsvirksomhet_i_Nord-Norge.pdf)
- Nilsen, T., Nilssen, I.B., Karlstad, S. (2013) Norsk leverandørindustri sin konkurranseevne i en global offshorenæring: *Leveranser til Goliat-prosjektet i Barentshavet*, Northern research institute, Alta.
- Norwegian Oil Directorate. (2013). *Petroleumsvirksomhet i nord; Planer og forventninger*. Downloaded January 16<sup>th</sup> 2014 from <http://www.npd.no/Global/Norsk/3-Publikasjoner/Presentasjoner/Nyland-Barentshavkonferansen-2013.pdf>
- Pellegrino, James W. and Hilton, Margaret L. (2012). *Division of Behavioral and Social Science and Education*. National Research Council, Washington, DC: The National Academic Press. Downloaded May 4<sup>th</sup> 2014 from: [http://www.google.no/books?hl=no&lr=&id=rVx0AAAAQBAJ&oi=fnd&pg=PP1&dq=transferable+knowledge&ots=Vs-GVpuHzJ&sig=L2wVTHKP6FbiWxEn0B\\_LvfTd-F4&redir\\_esc=y#v=onepage&q&f=false](http://www.google.no/books?hl=no&lr=&id=rVx0AAAAQBAJ&oi=fnd&pg=PP1&dq=transferable+knowledge&ots=Vs-GVpuHzJ&sig=L2wVTHKP6FbiWxEn0B_LvfTd-F4&redir_esc=y#v=onepage&q&f=false)
- Porter, M. E. (2014). *Summary of diamond model, abstract*, downloaded May 12<sup>th</sup> 2014 from: <https://avetra.org.au/ABSTRACTS2006/PA%200058.pdf>
- Porter, M.E. (1998) *Competitive strategy: Techniques for analyzing industries and competitors*, New York: Free Press
- Porter, Michael E. (1990) *The Competitive Advantage of Nations*. The Macmillan press LTD.

Purvin & Gertz (2009) "Overview of The European Downstream Oil Industry." Downloaded January 27<sup>th</sup> 2014 from:

<https://www.europia.eu/content/default.asp?PageID=412&DocID=20487>

Ramanathan, K., Seth, A. and Thomas, H. (1997). Explaining joint ventures: Alternative theoretical perspectives. In P. W. Beamish & J. P. Killing (Eds.), *Cooperative Strategies: Vol. 1. North American Perspectives*: p. 51–85. San Francisco, CA: New Lexington Press.

Klima og miljødepartementet, (2010). Regjeringen om miljøver i Nord:

[http://www.regjeringen.no/nb/dep/kld/tema/svalbard\\_og\\_polaromradene/miljovern-i-nordomradene.html?id=451243](http://www.regjeringen.no/nb/dep/kld/tema/svalbard_og_polaromradene/miljovern-i-nordomradene.html?id=451243)

Rystad Energy. (2013). *Aktiviteten i den petroleumsrettede leverandørindustrien i landets ulike regioner*. Downloaded January 14<sup>th</sup> 2014 from:

[http://www.regjeringen.no/upload/OED/Rapporter/Aktiviteten\\_i\\_den\\_petroleumsrettede\\_leve\\_randorindustrien\\_i\\_landets\\_ulike\\_regioner.pdf](http://www.regjeringen.no/upload/OED/Rapporter/Aktiviteten_i_den_petroleumsrettede_leve_randorindustrien_i_landets_ulike_regioner.pdf)

Rystad Energy. (2013). *Internasjonal omsetning fra norske oljeserviceselskaper*. Downloaded January 14<sup>th</sup> 2014 from:

[http://www.regjeringen.no/upload/OED/Rapporter/Internasjonal\\_omsetning\\_fra\\_norske\\_oljeserviceselskaper.pdf](http://www.regjeringen.no/upload/OED/Rapporter/Internasjonal_omsetning_fra_norske_oljeserviceselskaper.pdf)

Slottfeldt-Ellingsen D. and Sandvik, K.P.L. (2009). *Industriutvikling i Nord-Norge frem mot 2030*. SINTEF and NORUT .Downloaded January 22<sup>nd</sup> 2014 from:

<http://www.sintef.no/upload/Konsern/Media/2009-08-21%20Industriutvikling%20i%20Nord-Norge%20frem%20mot%202030.pdf>

Wilkinson, T. J., and Kannan, V. R., (2013) *Strategic Management in the 21st Century*, ABC-Clio

## Appendix

### 3.1 Imperfect mobility, imperfect imitability, and imperfect substitutability

(Das and Teng, 2000: *p.* 39-41)

The resource-based view suggests that firm resource heterogeneity is not a short-term phenomenon; rather, a degree of heterogeneity tends to be sustained over time (Peteraf, 1993). Some resource characteristics that prevent firms from moving toward resource homogeneity have been identified as: imperfect mobility, imperfect imitability, and imperfect substitutability (Barney, 1991; Chi, 1994; Dierickx & Cool, 1989; Peteraf, 1993).

Imperfect mobility refers to the difficulty, as well as the nontrivial costs, of moving certain resources from one firm to another. According to Dierickx and Cool (1989), factor markets are often incomplete and imperfect, so that many resources are either not tradable at all or not perfectly tradable. For example, resources such as firm reputation and organizational culture are simply not tradable. Many resources, such as the tacit knowledge of firms, lose much of their value if moved from their current organizational context and other resources used in conjunction.

Whereas imperfect mobility is concerned with barriers to getting the resources from the owners, imperfect imitability and imperfect substitutability refer to barriers to obtaining similar resources from elsewhere (Barney, 1991; Peteraf, 1993). Lippman and Rumelt (1982) introduced the concept of causal ambiguity, or the lack of transparency about what resources are responsible for competitive advantage. Causal ambiguity makes the connection between resources and competitive advantage less clear, and thus constrains a firm's ability to imitate its competitors and/or to employ substitutes. Reed and DeFillippi (1990) identify three resource characteristics that give rise to causal ambiguity: tacitness, complexity, and specificity.

Imperfect mobility, imperfect imitability, and imperfect substitutability of firm resources are not only essential for sustained resource heterogeneity, but are also instrumental in the formation of strategic alliances. Imagine a firm whose resources are perfectly or easily mobile, imitable, and substitutable. Clearly, other firms would be in a position to bid desirable resources away from such a firm in factor markets. There would then hardly be a need to form strategic alliances. Should all desirable resources be available for acquisition in factor markets at fair prices, it would be foolhardy for firms to get involved in strategic alliances, which

usually entail high governance costs (Osborn & Baughn, 1990) and some sacrifice of organizational control (Lyles & Reger, 1993). A fairly self-evident premise for this argument is that resources that are not perfectly mobile, imitable, and substitutable can be obtained through alliances. For example, although reputation is not tradable, it can be transferred to a strategic alliance formed by a firm, as in the Universal Card case between AT&T and TSYS (Sankar, Boulton, Davidson, Snyder, & Ussery, 1995).

As our earlier discussion on alliance rationale has shown, only if a firm cannot efficiently get needed resources from elsewhere—except by a sharing arrangement with its owners—will it be willing to form a strategic alliance. For instance, since there is, in most cases, a well-developed—that is, perfectly mobile and substitutable—capital market for establishing businesses, firms with only financial resources to share may provide no particular advantage and are usually not approached for strategic alliances. Nevertheless, in cases where particular projects are too risky and the capital market fails to provide needed capital, the financial resources available from provider firms become imperfectly mobile and imperfectly substitutable. As a result, these firms will be wooed by those in need of capital. The point is that the more imperfect the mobility, imitability, and substitutability of a firm's resources is, the more likely that others will be interested in forming alliances with it. For instance, in the pharmaceutical industry, small biotechnology firms often ally with large pharmaceutical companies for R&D activities. However, the major reason is not just to have access to financial resources, which are quite mobile (otherwise, we would have seen many partners from other industries also). The key is that, in addition to financial resources, large pharmaceutical companies also provide intangible resources such as marketing and operations know-how—which are far less mobile, imitable, and substitutable.

#### 4.1 The interview guide, template

Hvilke føringer legger dere for lokal deltakelse på leverandørkontrakter i Nord-Norge?

Hva med underleverandører?

Hvilke føringer og retningslinjer legger staten for lokal deltakelse ved leverandørkontrakter i Nord-Norge?

Hvilket ansvar har dere for å skape lokale ringvirkninger i lokalmiljøer der dere opererer?

Innen hvilke segmenter kan leverandørindustri i Nord Norge konkurrere på anbud?

Seismic and G&G (geological and geophysical surveys) // Transportation and logistics // Rig and drill services // Well services // Engineering // EPC // Topside and processing equipment // Subsea equipment and installation services // Well intervention // Maintenance and modification services // Operational and professional services

Hvis vi skiller mellom ressurser og kompetanse:

Hvilke ressurser mangler nordnorsk leverandørindustri?

Hvilke ressurser har nordnorsk leverandørindustri?

Hvordan kompetanse mangler nordnorsk leverandørindustri?

Hvordan kompetanse har nordnorsk leverandørindustri?

Hvilke fordeler har nordnorsk leverandørindustri kontra de nasjonale/internasjonale leverandørene?

Kan leverandørene, hvis de slår seg sammen, bli en sterkere leverandør?

Hva er den største utfordringen i Nordnorsk leverandørindustri?

- Fysiske ressurser vs. kompetanse
- Finansielle ressurser vs. kompetanse
- Menneskelige ressurser vs. Kompetanse

I hvilken grad bør lokal industri slå seg sammen for å møte anbudskrav?

Har dere preferanser i forhold til allianser kontra konsolideringer innen lokal leverandørindustri?

I hvilken grad bidrar dere til å fremme allianser eller konsolidering innen leverandørindustrien?

I hvilken grad samarbeider dere i infrastruktur som skaper konkurransefortrinn for lokal industri?

Hvilke infrastrukturelle utfordringer kan ligge i veien for Nord-Norsk leverandørindustri?

Hva må skje i Nord-Norge for å skape store kompetanseklynger som i sør?

Hvilke muligheter ser du for utviklingen av nordnorsk industri som følge av økt olje og gass aktivitet i regionen?



## 4.2 Seven stages in Grounded Analysis

(Easterby-Smith et al., 2012: p. 167-168)

1. *Familiarization* – First re-read the data transcripts. When reading, draw on unrecorded information as well as recorded. This is where any additional field notes and your personal research diary can be important to the process of analysis. Glaser (1978) suggests that at this initial stage researchers should remind themselves just what the focus of the study is, what the data suggests and whose point of view is being expressed. The relationship between the research and the people interviewed should also be accounted for.
2. *Reflection* – At this stage desperation might begin to set in. There is usually so much rich data that trying to make sense of it seems an impossible task. Evaluation and critique become more evident as the data is evaluated in the light of previous research, academic texts and common sense explanations. The kind of questions researchers might ask themselves are:
  - a. Does it support existing knowledge?
  - b. Does it challenge it?
  - c. Does it answer previously unanswered questions?
  - d. What is different?
  - e. Is it different?
3. *Conceptualization* – At this stage there is usually a set of concepts that seem to be important for understanding what is going on. For example, in an examination of performance these might include: management style, technology, absence rates, demographic qualities of the labor force, locus of power and so on. These concepts that responds mentioned are now articulated as explanatory variables, and need to be coded. Charmaz (2006) suggests codes could be simple and precise actions preserved with the process remaining open and the researcher staying close to the data.
4. *Cataloguing concepts* – Having established that these concepts do seem to occur in peoples' explanations, they then can be transferred into a database. Focused codes<sup>20</sup> are more directed and more conceptual and analytical and axial codes<sup>21</sup> specify categories and or sub-categories and specify the dimension of a category. There is an

---

<sup>20</sup> Focused codes: codes that are directed, conceptual and analytical

<sup>21</sup> Axial codes: codes that specify categories or sub categories where the dimensions are specified.

issue of labeling that needs to be resolved which relates to whether the language used is that of the people concerned or you use your own terms. Our view is that it is probably helpful at this stage to use your own terms providing a trace is kept of how they were derived. Although there may be pressure to use computer packages for your analysis there is a debate about the way the software structures the data and where there are modest amounts of data it may still be worth considering manual methods.

5. *Re-coding* – Whether computers are used or not the process is usually highly iterative and there will need to be an element of going back to check against the original data and comparing incidents in order to identify particular properties. It may well be individuals in the same organization were interpreting what appears to be similar concepts in very different ways. In these cases re-coding will be necessary.
6. *Linking* – At this stage the analytical framework and explanations should be becoming clearer with patterns emerging between concepts. This is the stage of developing theoretical codes<sup>22</sup>. This is achieved by conceptualizing “how substantive codes may relate to each other as hypothesis to be integrated into a theory” (Charmaz, 2006: 121 – 49). One can now begin to link the key variables into a more holistic theory. At this stage it is often worth producing a first draft, which can be tried out on others, both colleagues and respondents, so that the argument and supporting data can be exposed to wider scrutiny and some degree of verification.
7. *Re-evaluation* – In the light of the comments of others, the researcher may feel that more work is needed in some areas. For example, the analysis may have omitted some factors or have over-emphasized others. This stage takes some period of time, and as with the other stages it may have to be undertaken more than once.

---

<sup>22</sup> Theoretical codes: codes that derive from an understanding of how substantive codes relate one with another