



Universitetet
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*Small and Medium-sized Enterprises in
Integrated Contracts on the Norwegian
Continental Shelf*





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i Stavanger

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Abstract

Projects in the Norwegian oil and gas industry are immense and generate a large number of working hours and income for the supplier industry as well as the society. In recent years, integrated contracts have become more common between operator and oil service companies for well construction projects offshore. In this thesis, the purpose is to look more closely at whether integrated contracts can help small and medium-sized companies excel in the Norwegian oil and gas industry. The aspiration behind this is to investigate whether the contract form itself can be a contributor to include several companies in the same project and together deliver a total product. Therefore, companies' ability to collaborate, communicate, share data and information is examined.

In order to answer our research questions and main research issue, a qualitative method is used to collect pertinent data. We conducted eight in-depth interviews in six different companies in order to get representatives from all stages in an integrated contract. The results we obtained are further discussed against relevant theory and research questions. The findings show that integrated contracts are particularly convenient for operators and the large oil service companies that have the capacity to deliver a total delivery. On the other hand, this will make it more difficult to include small and medium-sized enterprises that specialize in a specific segment. If, contrarily, the small and medium-sized enterprises have a well-established network and an exceptional product that suppliers have not been able to emulate, there may be better chances of being included. When it comes to the use of digital platforms, it turns out that these are positively received and used in large parts of the industry, so it becomes easier for them to share data, keep in touch, and follow each other up. Nevertheless, there are some companies that do not participate in this development and miss out on supplied opportunities. Furthermore, trust is an important factor in achieving success with digital platforms. Companies should thus have a more comprehensive focus on trust as well as focus on security mechanisms. There is a clear tendency for data sharing that largely affects digital platforms in Norway's oil and gas industry. Therefore, data sharing between different digital platforms could be necessary for the future, as these will probably relate to each other. Moreover, our results indicate that this is a complex topic, which therefore should be given greater attention.

There is minimal research that touches on this particular limitation and can therefore be highly interesting to take a closer look at.

Preface

This thesis marks the final part of the Executive Master in Business Administration at the Business School of the University of Stavanger, with a specialization in Strategic Marketing and Analysis.

During these two years, in collaboration with lecturers and fellow students, we have acquired a lot of knowledge that we will benefit from later in life. Finishing this thesis has been both challenging and educational. It has been a memorable process, and we have had to adapt to the conditions surrounding the pandemic Covid-19. As the University has been closed for periods, we have had to communicate with the supervisor and the informants through Microsoft Teams. However, the process has shown how adaptable we can be when needed.

We are very grateful to our supervisor Thomas Laudal for his impeccable guidance and unwavering support. Professor Laudal's concrete feedback and upright input to our thesis have been highly appreciated. Furthermore, we would like to thank our mentor from one of the large oil service companies we have interviewed, who has taken the time and shown fantastic commitment to the thesis. We would also thank all participating informants who have contributed with their expertise and experience in the interviews.

Finally, we would like to thank the fantastic student community at the Business School of the University of Stavanger who have contributed to an indescribable time. In addition, we are very thankful for the good support from our families and friends. They have been good contributors and given us positive impetus.

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Definition of Key Terms

In this chapter, we will define key terms that will be discussed later in this study. Through the thesis, we have taken some liberties when it comes to the use of terminology, as we use wording a little differently than it is used elsewhere. For the work to be understood in the way it is intended, we have chosen to define the terms in this way.

Operator

Operator is used as a term for the companies that own the project. That is, those who put the work out to tender.

Contractor / Large Oil Service Company

We use the word contractor for companies that operate as the second link in an integrated operation, i.e., those that manage the operator's contract. They are also referred to as large oil service companies since they are the ones we have included in the study as suppliers.

Subcontractor / Small and Medium-sized Enterprise (SME)

Subcontractors are referred to here as a third part of an integrated contract. We also refer to them as small and medium-sized businesses. It is of course possible that large companies also act as a third link in some contracts. However, since we have only interviewed SMEs as subcontractors, we have chosen to put it this way.

Norwegian OFS = Norwegian oilfield service industry

EBIT = earnings before interest and tax

Adjusted EBIT = EBIT + impairment

EBITDA = adjusted EBIT + depreciation and amortization

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1. Introduction

There has been declining efficiency and strong cost growth in recent years in drilling. As a result, there has been a certain degree of innovation in contract design and organization of oil services. There have been some challenging years for the oil and gas industry, resulting in a gradual change in the contract designs between the operators, the contractor, and subcontractors. In the past, operators often bought direct contracts with several service companies for one project. In recent years, the oil and gas industry has entered into larger multi-supply contracts, where new incentive systems have also been tested (Osmundsen, 2009). The contract design is now moving towards a higher level of integration, i.e., for example, a large service company delivers most or all of the service and equipment to the operator's well construction projects. Based on the above, by focusing on a higher level of integration in the contracts, one seeks to obtain a contract with performance incentives that are adapted to the service companies while at the same time ensuring the operator's goals. The contract will also provide better risk-sharing (Osmundsen, Sørensen & Toft, 2010).

The purpose of our study is to investigate how SMEs and large service companies can succeed in creating synergies in large integrated projects. This can be an opportunity to construct a more balanced co-construction win-win situation. The study aims to outline the specific problems that have arisen for SMEs with the introduction of integrated contracts. The study also sheds light on the collaboration between companies with different levels of power and cultures and how inclusion can create value for both parties (Barabel, Meier & Soparnot, 2014).

The thesis also sheds light on the fact that digital platforms are a suitable tool and a driver to help build relationships and improve cooperation between the actors in the industry. It is also investigated whether data sharing connected with the oil and gas industry has led to value-adding activities for the actors. Further, to examine this, interviews were conducted with one oil company, various oil service companies and SMEs. This is to understand the research issue better. The companies represent both service providers and service buyers.

1.1 Thesis Structure

The assignment is structured with an introduction in chapter 1, here the background, motivation and problem are presented. Chapter 2 sheds light on the oil and gas industry on the Norwegian continental shelf. The theoretical framework that is relevant for answering the problem is presented in chapter 3. Chapter 4 discusses the methodological choices as well as the quality of data collection. Presentation of the findings in the study is given in chapter 5. The findings are further discussed and analyzed against relevant literature in chapter 6, before we come to a conclusion and consult further research in chapter 7.

1.2 Motivation and Background

In the search for topics and issues for the thesis, it was important for us to focus on a time-relevant and at the same time interesting topic. We wanted to focus on a topic where we could both utilize our own knowledge but at the same time explore an industry that could be an attractive workplace in the future. After some discussion, input from the sidelines and research, we came to the conclusion that the Norwegian oil and gas industry with a focus on SMEs has many aspects that can be looked further into.

Hassani and Silva (2018) believes that there is limited cooperation between the companies as of now if the objective is to innovate and develop new methods and technology to ultimately excel the industry. This means that there is an even greater potential in the industry that can be better utilized. The projects and operations carried out in the North Sea are of an enormous nature that extends over several years, and therefore it is a hard fight to win the contracts. When the winner of these contracts commits to deliver a total delivery, SMEs do not even have the opportunity to participate in bidding. Therefore, they come into the second row, if the winner of the contract, the contractor, wants to include them. Such a system is based on trust and good cooperation between the parties, which is not entirely optimal in the industry now. Earlier this year, one could read about a supplier to the offshore petroleum industry that has previously had a long contract with one of the largest operators, which lost its contract upon renewal. The company that employed 215 now had to terminate 150 of these, simply because they lost one contract, which underpins the size and scope of these contracts (Myrset, 2021). Only a few months later came the news that they had been acquired by another large company (Økland, 2021). In other words, SMEs are disappearing and emerging all the time, and we want to see if it can be the integration in the contracts that accelerates such changes.

Furthermore, we want to go deeper into the methods of cooperation between the various parties in the industry; operators, contractors and subcontractors. Specifically, the use of digital platforms and how they keep in contract, share data, and follow each other up through the project. As Gezdir and Bhattacharjya (2017) points out, can digitalization develop the already very complex machines and technology that are used in the industry, but at the same time build better relations between the parties in a collaboration. For that reason, we will look at how digital platforms are used in the industry, to get answers on whether it is a possible tool to develop improved collaboration and inclusion in the industry.

1.3 Research Problem

The focus and purpose of the thesis form the basis for the problem and the research questions. As stated, we want to look at SMEs, how integrated contracts affect them and their market access, as well as digital platforms and their impact. In search of potential factors, it was natural to develop research questions that cover a wide range of topics, so that the thesis actually answers the problems.

Our main research issue is therefore:

Does the use of integrated contracts contribute to more inclusion of small and medium-sized enterprises?

In order to best answer the problem, we have formulated two research questions that will help gaining an understanding of the topic.

1. Does the use of integrated contracts affect the opportunities and market development for SMEs in large offshore projects in the oil and gas industry?
2. Can digital platforms contribute to better collaboration and relationships?

The first question is relatively broad, where we focus on general features that may influence SMEs opportunities as a business. Further, access to work and market development as a result of the usage of integrated contracts are highlighted. The last question addresses how digital platforms can help to influence the interaction between them. By the terms collaboration and relationship, we anticipate studying how the parties contact and communication can be used to

create a better environment that promotes consensus and ultimately can increase productivity for all.

1.4 Information About the Companies

This thesis will present experiences gathered from one operator company, two large oil service companies and three small oil service companies. The thesis aims to shed light on and evaluate the extent to which integrated contracts exclude or include SMEs. All companies and informants' names are kept out of the thesis, as this can be sensitive information for them to share publicly.

The operator company is a Norwegian listed oil and gas company. The company has a dominant position on the Norwegian continental shelf but also operates internationally. One of the major service companies is an international oil service company. This company has grown to become one of the world's largest product and service provider to the petroleum industry. Furthermore, the company is also one of the largest service companies in Norway and is one of the few service companies that have the opportunity to offer fully integrated services to an operator. The other service company is one of Norway's largest engineering, drilling and oil service group. Further, this company is a leading drilling company internationally as well. The three small oil service companies have their own expertise in an important technology used in Norway's oil and gas industry. They provide services to oilfield operators and services integrators.

2. The Oil and Gas Industry on the Norwegian Continental Shelf

The oil and gas industry in Norway has proven to be the largest contributor to the economic and technological development the country has experienced in the last 50 years. For Norwegian society, this industry is economically the most important (Norsk Petroleum, 2021b). Oil production on the Norwegian shelf began in the early 1970s. Since then, the petroleum industry has been an essential contributor to Norway's gross national product and measured by the value of NOK in November 2020, the industry contributed more than 15.7 billion NOK. The industry, directly and indirectly, employs just under 170,000 people. Furthermore, to secure future generations, the country established the Government Pension Fund Global, the Petroleum Fund (Olje- og energidepartementet, 2020).

It is essential for the country that petroleum resources are managed in a long-term perspective so that the values benefit the whole of Norwegian society (Olje- og energidepartementet, 2020). At the beginning of the 2000s, it was opened up for several types of companies to operate on the Norwegian continental shelf. This has led to many different types of companies and competition on the Norwegian shelf today (Olje- og energidepartementet, 2019).

In 1972, the Norwegian government announced the ten oil commandments that have been the cornerstone of our oil policy. The points regulate, among other things, "that the state engages at all appropriate levels, contributes to a coordination of Norwegian interests within the Norwegian petroleum industry and to the development of a Norwegian, integrated oil environment with both national and international focus" (Norsk olje & gass, 2017).

The oil price in the period before 2013 was over 100 dollars a barrel, which led to the highest ever oil investments in 2013-2014. The oil price hit below \$ 30 a barrel in 2016, and at this point, it appeared challenging for the industry. As a result of the large fall in prices, investments in the industry in 2017 and 2018 were the lowest since 2010. The decline in prices forced the oil industry to reduce costs and work on new profitable projects with low oil prices. At the same time, the Norwegian Petroleum Directorate saw that Norway had several planned projects ahead. In 2017 and 2018, a historically high number of development plans were submitted to the authorities (Hovland, 2021).

For the Norwegian supplier industry, the Norwegian continental shelf will be and has been the most important market. Since the 2000s, the supplier industry has developed into Norway's second-largest export industry after oil and gas sales. In recent years, the supplier industry has been through financial challenges, restructuring and significant staff reductions. The reason for the above is lower activity nationally and globally. However, it turns out that the Norwegian supplier industry has been stronger after the award of contracts in 2017, which has significantly increased the industry's competitiveness (Konkraft, 2018).

The Norwegian Petroleum Directorate expects Norwegian oil and gas production to increase until 2025. Furthermore, forecasts show that oil and gas production from 2025 will decline towards 2030. It is also expected that the industry will, in the next five years, have a relatively stable investment of around 130-140 billion NOK each year (Hovland, 2021).

3. Relevant Literature

Relevant literature is a starting point for analyzing and discussing the data that the thesis has provided. Therefore, the theoretical basis is factors with features that are considered as justification for how the industry acts as it does, in addition to features that through the work have proven to be important to shed light on.

3.1 Contract Theory

A contract can be defined as an agreement or set of agreements between two or more partners, which the law will handle (Müller & Turner, 2005). According to Kale and Singh (2009), a contract consists of clear rights and obligations for the parties. Contracts and guidelines can be used to maintain a good balance between the parties and minimize the risk of an unbalanced relationship (Barabel et al., 2014). A contract usually consists of goals, obligations, resources, what requirements the parties have for each other, purpose, what opportunities the parties have and handling of problems (Bruner & Spekman, 1998).

The contract that binds the partners should be a living document, which means that the contract adapts to change and at the same time maintains the parties' central ideas on which they have perceived themselves. Changes in the core can lead to damage to the partnership and the key prerequisites. Therefore, one should be sure when asking questions about the basis on which the original agreement was built, as it can go beyond the alliance's original rules (Bruner & Spekman, 1998).

A contract can be described as an instrument for balancing risk and benefits related to project success by allocating risk that affects the contractual partner's motivation. Contracts are also used to minimize the governing project's total cost (Müller & Turner, 2005). According to Gardiner (2005), contracts can be divided into four categories.

1. Fixed price contracts or lump sum. Includes also Firm fixed price (FFP).
2. Cost reimbursement contracts (cost plus fixed fee, CPFF)
3. Time and materials and labour hours
4. Incentive contracts

Incentive contracting is a broad category for all contracts. All the contract categories apply incentives and will be discussed under. Furthermore, all categories also create or are based on expectations of incentives. Incentives contracting is contracts where there is other, specifically designed incentives. Moreover, the fourth category appears as a residual category compared to 1-3 (Gardiner, 2005).

The operator, the contract owner, chooses a contract design that they hope will lead to a good management structure between the owner and the supplier. In order to achieve a good management structure, two essential dimensions apply, that is communication and adaptation in the contract. The parties must communicate and accept the contract's necessary adjustments and assume variations (Müller & Turner, 2005).

3.1.1 Fixed Price or Lump Sum

A fixed-price contract is used as one of the most common types of contracts. According to Gardiner (2005), this type of contract involves payment of a certain amount, where a party must deliver one or more specified supplies or perform a specific service. The contract's total value is often not known from the start and can thus occur over time. The price is therefore determined per step of the process. This is often referred to as the "fixed unit price" (Gardiner, 2005).

With a fixed-price contract, there is no guarantee for profit, but the contractor expects to make a profit. If there is a loss on the service or delivery, the contractor must, in any case, perform the service or delivery in accordance with the contract. On the other hand, the customer can not control the performance or any changes in the contract, but it will be possible to adjust the price. Furthermore, in this contract, the contractor will work for the most efficient execution of the contract, and that cost savings can be realized (Gardiner, 2005).

A fixed-price contract is preferable where the contract requirements can be defined and executed without significant risk of failure. In addition, the contract is described as being easily managed. This type of contract is not appropriate in situations where there is unknown or non-quantifiable risk associated with the work to be performed. This will also apply when it is important for the customer to have complete control over the performance work (Gardiner, 2005).

Within a fixed-price contract, there is a modified form, fixed-price incentive (FPI). The contract is structured to reward the contractor for various achievements, and this is characterized as incentives. The incentive must be measurable, and in addition, it must be linked to the final price paid and calculated in a calculable manner based on the measurement. In a single contract, several incentives can be included (Gardiner, 2005).

For the "price" of an FPI structure, there are four components. The four are target cost, target price, ceiling price and sharing ratio. The target price is paid if the contractor succeeds in performing the target cost. The contractor fully absorbs the additional cost if the cost exceeds the target cost, and the price increases proportionately to the additional costs until it reaches the ceiling price. Such situations provide cost savings proportional decrease in the total price. This makes the incentive form less attractive than a standard FFP contract. The cost difference is normally shared between contractor and customer, and how much each has to pay is regulated with a sharing ratio (Gardiner, 2005).

It can be more challenging to administer the FPI contract, as it requires much more instruction into the contractor cost accounting than what is required at a firm fixed price. In a firm fixed price environment, the incentive for effective performance is often less (Gardiner, 2005).

In a lump sum contract, the contractor must carry out all project work on a set price basis, and in addition, take most of the responsibility for the project risk and obligations. The advantage is to have control over the costs offered to complete the project and how long it takes to complete the project. Well-defined work scope is required for a lump sum, which ultimately provides the project performance requirements. In the case of a lump sum framework, the project's implementation phase is usually more efficient and shorter in a framework due to the complete project definition (Moazzami, Ruwanpura & Jergeas, 2011; Shash & Habash, 2020).

3.1.2 Cost Reimbursement Contracts

Cost-plus fixed fee (CPFF) is the most common type within a cost reimbursement contract. This type of contract involves two elements, an estimated cost, and a fixed fee. A characteristic of the cost reimbursement contract is that the contractor is reimbursed for his performance costs and is paid a fee for the reimbursed costs. Only costs that the contractor can fully document

will be reimbursed. This can lead to loss of money for a contractor through a cost Reimbursement effort (Gardiner, 2005). In this type of contract, the fee does not change due to increased costs or reduction of costs and can only be changed if the total scope of the work is changed, and the fee is renegotiated. The fee is calculated based on the original estimated cost of the contract (Gardiner, 2005).

Cost-plus fixed-fee contracts are usually used where the risk of performance is high or where performance control is required of the customer at a high level. This type of contract is usually only used in contracts with higher values due to the high administration costs. In addition, the cost-reimbursement contract is desired when project flexibility is necessary, which include projects with high risk and where the work is unclear at the beginning of the project (Gardiner, 2005).

Cost-plus incentive fee (CPIF) is a variant of cost-reimbursement contracts. Here, the fee depends on how well the contract meets various performance targets. The type of contract is essentially the same as a CPFF, except for the fee structure. The fee includes an incentive, just like in a fixed-price incentive contract related to objective performance criteria. In a CPIF contract, the fee may include a fixed tax component, and the incentive component will be added as an additional amount. For the maximum fee, there is usually a limit that can be earned according to the contract. In development environments where it is considered beneficial to reward unique performance characteristics for the final product designed, CPIF contracts are useful. This type of contract can be used as an incentive to perform a contract within an agreed delivery time (Gardiner, 2005).

3.1.3 Time and Material and Labor Hours

With time and materials and labor hours contract, the contractor is paid based on material and labor hours used to execute the service or by end-product. This happens regardless of whether the desired task has been performed. The contract includes an agreed price list for materials. In addition, a specified hourly rate is used for payment. Furthermore, reimbursement of material costs (plus a percentage mark-up) is also comprises in the time and materials form. These contracts are seen as more expensive from the customer's point of view, and for the contractor, there is less risk of all contract types. Therefore, these contracts are usually limited and are used where there is talk of low monetary values. In addition, they are normally used only where

other types of contracts are not available (Gardiner, 2005). The contractor receives no positive profit incentives for cost control or work efficiency in a time and materials contract. Therefore, in such a contract, it is necessary to have appropriate regulatory monitoring of the contractor's performance. The reason for this is to ensure that effective methods and effective cost controls are used (GSA, DoD & NASA, 2019).

Time and materials and labor hours contracts can provide better timing since one avoids the bidding processes. A fixed price helps to start immediately and is therefore a time saver. Furthermore, one of the disadvantages of using time and material and labor hours contracts is low budget control. The expected budget is set in the contract, but the total costs can go far beyond budgets. In addition, extensive involvement is required to ensure that the team delivers in accordance with the agreement between the parties, both quantity and number of hours (Korotia, 2017). Furthermore, being effective is no advantage in this type of contract. If the payment for the work is made based on time, it can provide little incentive by completing a job quickly. To avoid the above, a bonus of some kind can be included for efficiency and completion of the contract before the plan (Spellerberg, 2020).

3.1.4 Incentive Contracting

Incentive contracting refers to sharing the savings of the results with the contractor who generates the savings. To promote a win-win situation, one can determine the specific project parameters that they believe are important to a client. Therefore, an incentive agreement can be developed to improve performance in areas such as quality, cost, safety, schedule, and customer satisfaction (Gardiner, 2005). "Incentive agreements must be related to parameters which are (1) measurable, (2) observable by both parties, (3) within the contractor's sphere of control and (4) legally verifiable" (Osmundsen et al., 2010, p. 9). Fulfilling this demand is not always possible. With qualitative aspects such as quality and flexibility, measurement problems can arise. For example, the obstacle concerning asymmetric information, meaning that the contractor can often withhold more information than the buyer. This can be about what is achievable and reasons for discrepancies. It usually is not feasible to enter into complete contracts, since it is impossible to predict all outcomes, and due to legal verification, problems will occur. Furthermore, there may be renegotiation in the case of a complete contract, which may reduce the incentives and limit the contract possibilities. Moreover, incentive schemes are required to cover the essential performance dimensions (Osmundsen et al., 2010). In the event

of negative project implementation, it can lead to costs that go beyond the sponsor's money. If the project implementation goes as planned and turns out to be a positive product performance, the sponsor saves money (Gardiner, 2005).

The operator's and the contractor's goals are adjusted using incentives, and close cooperation should be worked on. A desired behavior from the contractor is also essential (Osmundsen et al., 2010). The right incentives lead to a lesser need for management and follow-up of the project on the owner's side. This is because the contractor provides and is motivated to deliver products or services according to the project's scope (Dimitri, Piga & Spagnolo, 2006). Properly designed incentives can lead to advantages and a continuous focus from the contractor. Thus, the contractor will use large parts of his experience to achieve the incentive reward (Osmundsen et al., 2010).

Representing average or mediocre performance, estimates and budgets usually are based on historical data. According to Gardiner (2005), incentive contracting can be completely self-financed from the otherwise saved costs. Furthermore, the client desires to benefit from the savings from the previous production or increased investment returns (Gardiner, 2005).

Incentive contracting (Gardiner, 2005, p.145):

- is a contractual method that rewards performance
- is about risk/rewards sharing
- promotes the project team concept
- promotes a win-win opportunity
- ensures project work is goal-oriented by promoting specific goals

There are several inherent benefits of incentive contracting, as goals, expectations, and customers' objectives are known to the participants, which is largely emphasized in the incentive agreement. Where efficiency can increase the contractor's profitability, the contractor will generally offer his best project teams on projects. Shifting a project can often hurt them. Projects are monitored and updated throughout the life of the project. There is also a real concern on the contractor's part to find ways to remove problems such as "roadblocks" or "stumbling blocks". In addition, all possible contract savings are shared with the contractor. The customer receives a share of the savings and all the benefits of early project completion.

Furthermore, all incentive-based savings lead to new projects. Gardiner (2005) underlines that "Cost incentives take the form of a sharing formula generally expressed as a ratio. For example, if a 90/10 formula were negotiated, the client would pay 90 pence and the contractor 10 pence for every pound above the target cost" (p. 146). This means that the client pays the contractor an additional 10 pence in the pound for every pound saved. Therefore, it is positive for both parties that achieve reduced costs. In addition, the expected profit can be increased as the contractor's managerial skills are utilized optimally (Gardiner, 2005).

In incentive theory, various challenges can arise when designing incentives. One of the challenges is asymmetric information - "the oil company normally knows less about the actual drilling operations than the contractors, but more than them about the reservoir" (Osmundsen et al., 2010, p. 5). Renegotiation is also a challenge about "opportunities to renegotiate weakening incentives in the original contract" (Osmundsen et al., 2010, p. 5). Finally, distortion of the activity is mentioned - "trying incentives to quantitatively measurable performance parameters could be at the expense of the qualitative performance dimension, which is more difficult to measure" (Osmundsen et al., 2010, p. 5). Because of the challenges mentioned above, it is not unexpected that the empirical observations reveal that the introduction of incentives in some cases leads to undesirable consequences. In addition, systems that are too complicated are often used. According to Osmundsen et al (2010), it is a prerequisite for such schemes to work that the systems must be able to be understood, communicated, and enforced.

Companies can not only ensure a higher level of commitment through incentives and bonus systems. They must also achieve a favorable distribution of personnel and hardware. This depends on how favorable the contract is, and this is to specify the quality dimension. For example, when the contractor makes allocations, the oil companies with the highest incentive intensity in the contracts often come out best. Furthermore, it is not just a matter of efficiency in incentive contracts. There is also a large degree of allocation of input factors, which affects the level of rates. If the contractor wants to create competition during the contract race and thus push up interest rates, the contractor can agree on further incentives through negotiations with oil companies. Moreover, there are few, and the capacity is limited by the number of companies operating in the drilling and oil service sector. This means that the same contractor usually has parallel contracts with several oil companies (Osmundsen et al., 2010).

Incentive contracts reward efficient operation and can be used as a selection mechanism when awarding contracts. Due to this type of contract that rewards efficient operations attracts efficient companies. These companies know that there is money to be made from such a deal. The above can be seen as a type of game that can mean that incentive elements in contracts can be distributed quickly throughout an industry. In some cases, competitors bring in selection mechanisms in their contracts or that they risk being left with the least efficient contractors, a response is required (Osmundsen et al., 2010).

An essential prerequisite for incentives to function and be implemented in the organization is that the message must be conveyed. So that the people who actively make the decisions and perform the work recognize the value of the incentives. Another vital factor to focus on is which people in the organization are essential to reach with incentive terms. It is also vital that incentives have a broad range in the contractor organization to achieve an effect. Furthermore, appropriate incentives should complement each other to be available at all levels. Thus, one form of incentive does not exclude others (Osmundsen et al., 2010).

When an oil company and their contractors work closely together on a job, for example, in an oil and gas field, both parties must pull in the same direction. Achieved advantage of close cooperation is achieved when the goals are adjusted. This is normally done using incentives. Usually, incentives will be linked to specific goals such as productivity, delivery requirements and milestones. In addition, incentives will be based on a set of assumptions, i.e., agreed documentation such as rock data and drilling plans from the oil company would be delivered within a specified deadline. That is, a certain degree of predictability is required in incentive systems. Furthermore, according to Osmundsen et al. (2010), flexibility is an advantage, and it can be achieved by close integration between the buyer and the contractor.

3.2 Contracts in the Norwegian Oil and Gas Industry

Contracts in the oil and gas industry are heavily complex and often require close cooperation from several parties to achieve a successful outcome. There exist a lot of regulations and restrictions around a tender process. European Union and World Trade Organization agreements also have a certain impact, in a sense that national contractors are not allowed to be preferred ahead of the international in the competition for contracts, which contributes to increased autonomy for oil companies. Furthermore, the oil and gas industry conduct work on

what we call rented resources, which means that the extraction of oil and gas takes place on the state's premises. The Norwegian state "owns" the natural resources, and a high tax rate is therefore associated with them. Due to the extraordinary profitability of extracting petroleum resources, the oil companies are subject to a special tax in addition to corporate taxation. This means that in addition to the tax rate of 22%, there is the special tax rate of 56%, which correspond to a total tax rate of 78%. This may also be one of the reasons for the strict obligations in Norwegian oil and gas (Norsk Petroleum, 2021a). Nilsen (2008) underlines that ever since 2001 it has grown a greater institutional distance between those who govern the sector, those who administer, and the companies themselves. Further Nilsen (2008) argues that the reasons for that is the prospects for regional ripple effects are hampered by changes in the Norwegian petroleum policy. The state has sold itself into Equinor, the SDFI's share has been transformed into Petoro and Equinor is listed on the stock exchange. Furthermore, stricter competition has advanced, of which an increasing amount of the coordination of economic activities takes place in an international market.

The Norwegian oil and gas industry's contract templates are generally adapted to the large oil companies that have been accountable for developing fields on the Norwegian continental shelf. However, smaller companies in the industry have other needs when designing contracts. In contracts used in this industry, the oil companies, and the state, through the tax system, bear oil price and production risk. Appropriate forms of collaboration between licensees and contractors are also necessary to use and develop new technology. In the 1980s, the contracts were designed so that the oil companies served the basic technical descriptions for construction and facilities. In contrast, the contractor companies worked out specific illustrations for the construction of the facilities. In the 1990s, it became more common for oil companies to procure complete products to a greater extent and formulate their needs for contractors based on their function and performance requirements (Nilsen, 2008).

Today, the cooperation between the contractor industry and the oil companies is often organized under total contracts or framework agreements. There are various aspects of the arrangements, such as the agreements can be an impediment to effective operations and increased recovery. Some critical factors include the slight interest in alternative contract formats with the large operators, making it challenging to develop new contract concepts. It may seem that the operators emphasize downtime caused by the contractors disproportionately.

In the contracts, it is often defined as bonus- malus systems. Such systems can result in contractors prioritizing measures to avoid downtime and operational disruptions rather than increase progress and efficiency (Nilsen, 2008).

3.2.1 Traditional Individual Contracts

The projects in this industry are enormous and need a closely considered contract as a foundation to function as planned. There are multiple reasons why a company needs to have an appropriate contract for their projects. Firstly, to secure the production and maintain cost-effective quality to wells. Second, safety standards are critical and have to be satisfactory or devastating accidents could happen. Therefore, these aspects have to be well studied and discussed beforehand. Lastly, the company policy has to comply with government regulations and be described in the contract delivered down to the contractor (Augustino et al., 2020).

As early as the 1990s, the focus increased on contracts that included delivering total services. According to Gjelsvik (2000), and his research which examined oil companies in the USA in the 1980s-1990s, it is described as beneficial to collaborate with other contractors and form a hierarchy of the subcontractor to produce elements that support the best practice and theory. It was also pointed out that the selection of these companies should take place with NORSOK-criteria, which means that they emphasized the ability and willingness to cooperate with operators and possibly other contractors. In other words, is this not a new phenomenon, but still it has evolved into a new development in recent years, as one gets an insight into the data collection in this thesis. Although Gjelsvik's (2000) research was conducted in the USA, we choose to draw parallels to the Norwegian market as we consider them to be relatively similar and have several actors visible in both markets.

Before the transition to integrated contracts, the petroleum industry on the Norwegian continental shelf operated with individual contracts, also known as discrete contracts. In these types of contracts, it is the operator that has the last word in every process. The operator has a project that needs contractors to work on it, and instead of offering it as an integrated contract, they split up the operations. Then, each function is offered to different contractors, subcontractors, rig-operators, and whoever provides the best product and price to the operator. This kind of approach may create many contract documents and make the process more complicated (Augustino et al., 2020).

3.2.2 Integrated Contracts

At a certain point of time in the oil and gas Industry, the idea that it should be possible for both operators and service companies to share a more honest and less adversarial relationship. Thus, ideas were developed that made it possible for both parties to share risk and reward. This win-win situation is what we today call integrated contracts, where the service company must be able to develop profits through more significant involvement in and control of the processes, while the operating company can benefit from the efficiency and the ability to concentrate on resources concerning the core businesses. Another example is that previously, to be able to operate in this industry, an operator had to manage up to 15 contracts at the same time, and sometimes with the same number of service companies. This concerns extensive contracts but the high administrative effort and inefficient registration of contract costs (Bartstra, Prifti & Fleck, 1993).

From around 2004, one could see tendencies towards declining efficiency and substantial cost growth in drilling. As a result, one has witnessed a development within organizing and designing the oil service contracts (Osmundsen, 2009). Osmundsen (2009) points to a larger element of multi-delivery contracts, which means that service companies deliver much, if not all, of the service and equipment on the operator's projects. This development means far fewer contracts to operate for the operating company. Still, on the other hand, it also means that the contracts become more complicated to manage, and at the same time, they will contain a greater risk for the service company and a higher return.

This type of contract model can help simplify the procurement and management process for an operator. An oil service company can cover a broader range of activities. Therefore, there may be less need for more supplier companies. This can make it easier to implement incentives, as contractors can offer more services and therefore have much more control over the projects' progress. If the incentives are carried out correctly, the incentives can lead to favorable behavior from the contractors. This can happen if the contractors focus on achieving the incentive goals and delivering the project to the operator's goals and meeting them. Greater integration among the contractors is an advantage but must also be weighed against the disadvantage of reduced competition that can arise from greater integration, and few companies have the opportunity to offer such a wide range of services (Osmundsen et al., 2010).

A company involved in the entire value chain in the oil business is an integrated oil and gas company. Being an integrated company, the opportunity to have full control and efficiency arises. Further, upon integration provides different streams of revenue and diversification. Today, some of the largest and most influential oil and gas companies are integrated companies. These integrated companies are engaged in, for example, refining, exploration, production and distribution of oil and gas. There are high entry costs associated with various companies in the oil and gas industry. Therefore, the largest oil and gas companies have the best opportunity to integrate. Integrated oil and gas companies are involved in large processes, where crude prices can sometimes rise, and these companies may experience lower profit margins than a non-integrated company. This is a result of having greater downstream than upstream capabilities. Downstream activity refers to refining and marketing of oil and gas, while upstream activities are about exploration and production of oil and gas (Chen, 2021).

A company that is not integrated is an independent oil and gas company that focuses on only one segment. Furthermore, an integrated oil and gas company that is in direct contact with the energy market and can acquire certain market information is referred to as a vertically integrated company. Vertically integrated companies have a better opportunity to handle oil and gas production in changing market requirements. In addition, an independent oil and gas company can eliminate competing resource allocation between different companies (Chen, 2021).

Today, most of the large companies in the Norwegian oil- and gas industry utilize what is referred to as integrated operations initiatives. The Norwegian continental shelf is looked upon as one of the world's most progressive basin in the terms of promoting such initiatives (Henriquez et al., 2008). An integration as such is made possible by modern information and communication technology which allows the actors to share real-time data and communicate amongst remote locations in a much more efficient manner than before (Guldbrandsøy et al., 2004). One can therefore say that integration has become both more facilitated and more utilized over the past decades.

Close integration between contractor and buyer is an advantage that creates flexibility. According to Osmundsen et al. (2010), this is important for drilling, especially in the reservoir. Having a tight integration makes it easier to get new information so that the companies have

the opportunity to adjust the original plans. This will be cost-effective for the companies. The financial relevance of these types of changes may outweigh other considerations, such as the desire to minimize drilling costs. Control and flexibility in the context of contracts is a desire of oil companies. This desire will often be in conflict with the company's goal of designing incentive systems. These incentive systems can be calculated in advance. To achieve flexibility most simply, it can be through various forms of cost-plus payments, examples of daily prices. Furthermore, if performance-based incentive systems are used, the targets must be adjusted if the oil company changes the original drilling plan. The incentive system is weakened by this, as the contract is not proof of renegotiation. The contractor can receive a bonus regardless of whether there are incomplete contract elements. There is an effect, as it can blame the failure to achieve the goal on changes due to or inadequate delivery (Osmundsen et al., 2010).

Back-to-Back Contracts

There is a wide range of contracts in the petroleum industry, and in recent years, we have seen a shift towards more integrated contracts. Operators initiated this shift to make extensive projects more maneuverable to manage. There are several methods for the different intermediaries to implement the contracts within the concept of integrated contracts. Back-to-back is one of the more used principles on the Norwegian continental shelf. Back-to-back is a policy used to avoid extensive and costly consequences. The idea behind the principle is that the contract's content between operator and contractor is reflected in the contracts between contractor and subcontractor. It is, therefore, ensured that significant contract terms are not forgotten (Assaad et al., 2020). Furthermore, the contract form is applied to ensure that the contractor's risk through the contract with the operator is transferred as far as possible to the subcontractor, which could provide a profit in increased control over risk allocation (Offshore, 2013). The principle's scope is to prevent the contractor from having obligations to the operator, which they do not have the right to pass on to the responsible subcontractor. For example, that can be matters such as fines or deadlines related to variances. Although the principle should lead to increased risk control, there are pitfalls when using the principle, and these must be aware of (Offshore, 2013).

Moreover, it can be distinguished between the two main variants of the back-to-back principle: at a rule level and a consequence level. Back-to-back at the rule level is based roughly on direct use of rules and wording from the main contract down the contract hierarchy. A common way

to implement this is to make the main part of the contract valid for all parties in the supply chain. However, using a direct copy from the main contract will often be impractical and lead to unfortunate consequences. Therefore, it is often tailored to a certain extent, whereas several matters have to be reviewed and agreed upon by the various parties. Amongst others, the work scope of the individual subcontractor should be considered and agreed upon separately, as this is rarely specified in the main contract. The parties must also adapt deadlines to the deadline rules in the main contract. It will be necessary for the contractor to ensure that the subcontractor has shorter deadlines than themselves have towards the operator. Lastly, the operator's rights and obligations must be established, considering the subcontractor has no contract with the operator. Therefore, the contractor must ensure that the subcontractor is imposed all rights and responsibilities that the contractor has undertaken (Myrstad & Braadland, 2005).

Back-to-back at the consequence level is based on introducing the same advantages and disadvantages in all contracts in the various links in the hierarchy. Meaning that if the contractor has a particular consequence in their contract, it is carried out also in the subcontractor's contract. This more consequence-oriented variant of the principle helps to ensure the contractor against risks that may arise in connection with the subcontractor. Another aspect of the method is that the subcontractor is obligated to fulfil the contractor's obligations towards the operator. Also, a continuation of the requirements, for example, an extension of deadlines or increased remuneration, increases the need for loyalty between the parties. If the contractor does not follow this up sufficiently, it could potentially result in the subcontractor losing his rights to the contractor. The subcontractor can hedge against this risk by introducing special provisions that describe what the contractor's loyalty obligations consist of (Myrstad & Braadland, 2005).

As mentioned, the back-to-back principle is based on transferring terms agreed in a section of the contract hierarchy to the contracts between parties in the underlying section. However, it is crucial to be aware of the pitfalls of uncritically applying the principle. As a minimum, the price, the scope of work, and deadlines should be agreed upon separately. Before signing, all parties must think through the consequences of the various provisions in the contract so that there is a correspondence between the believed risk and the risk that follows from the contract (Offshore, 2013).

Asymmetric Information

Integrated contracts demand a lot of contact between the operator, contractor, and subcontractor, whereas communication and information play a vital role. Frequent interaction together with sharing knowledge will be significant in projects as such, in order to achieve the best possible result. What characterizes asymmetric information is that one of the actors holds more information than the other (Eisenhardt, 1989). For example, the operator could withhold information that would be essential for the contractor to know to complete the mission in the most cost-efficient way and benefit from it themselves by not mentioning it when entering into a contract. Nevertheless, the contractor can also hold back information from the operator if any problems occur that they do not want the contractor to know about before it is fixed. According to Hagen (1992), one can divide asymmetric information into two subcategories: hidden information and hidden actions. Hidden information relates to a situation where the agent, or in this case, the contractor or subcontractor, has relevant information that the principal, or operator, does not have and vice versa. Hidden information can consist of specific characteristics with either the actor or the goods that are the subject of a transaction between the two parties. Such unfolds in the relationship between the operator and the contractor if one part withholds certain information concerning, for example, the quality of the finished product.

The main elements of the issue hidden actions, on the other side, include the cases where the principal can not observe the agent's actions. If the contractor decides to keep the data and progress in a project to themselves, the operator will have difficulties monitoring and ensuring that the process proceeds as first desired. Nevertheless, the outcome depends not only on the agent's efforts but also on stochastic factors beyond the agent's control (Hagen, 1992).

Another interesting factor around the topic is the surroundings concerning Madison's dilemma. Humans are egocentric creatures, the same appeals to companies in this industry. One wants to act based on what benefits one the most. Madison's dilemma refers to a situation where the agent is given the principal's resources and authority to advance the interests of the principal. However, in the next instance, utilize the same resources to act against the principal. In full transparency, the agent will act opportunistically to his advantage and disadvantage to the principal (Berry, 1984).

3.3 Principal-agent Relationship

In contract theory, a distinction is made between different companies that assign a task - project owner/principal - and the company or a person who provides a service - the agent/project manager. In this thesis, the agents/project managers become different oil service companies. The contract is an essential tool for the companies with optimal risk sharing, as the oil companies can thus spread the risk (Osmundsen et al., 2010). Moreover, communication is a valuable part of project performance as it can make or break a project. Good communication is needed between the operator and the service company and within its integrated team. The communication structure is influenced by the contract type between the owner and the contractor. It is essential for a project's success to have a high degree of cooperation and collaboration, which is considered beneficial. However, if the operators need to control the project, this can be limited (Müller & Turner, 2005).

Project success is achieved when the typical responsibility lies on the project owners who have the business document. Project owners must ensure that the company's strategy is included in the project and that the top management accepts the project's investment responsibility. Owners provide financial resources, milestones, monitor the project, plan, accept forecasts and complete tasks. The daily management of the project is usually delegated from the project owner to the project manager. The project manager is then responsible for the day-to-day management and leading and managing the project towards the agreed goals. A principal-agent relationship is established between the agent and owner, where the owner is dependent on the project manager. The agent must perform the tasks on behalf of the project owner (Müller & Turner, 2005).

However, the project owner may not have access to the same information as the project manager when carrying out the project. This means that the project owner does not have information about the project manager's choices and whether this leads to the project owner's best options. Besides, this information asymmetry can lead to mistrust. The literature suggests a collaborative context for the parties involved in a project, where project owners create a culture of flexibility and control in their projects. This is discussed in Principal-agent theory by suggesting that the owners fear that the project manager will maximize their utility value. One way to avoid such actions is by using rigid communication structures (Müller & Turner, 2005).

According to Müller and Turner (2005), an agency relationship is defined as a contract in which the owner, one party, engages another party, the project manager, to perform work or service. Furthermore, the owner then delegates decision-making powers to the project manager. However, disadvantages may arise for the owner during the contract. The agent may choose not to act in the owner's best interests if the goal for both parties is to maximize their financial position. Therefore, the delegation of decision-making authority from the owner to the agent is problematic. This is because the interest of the owner and agent may differ if both are maximum. The owner does not have the opportunity to monitor the project managers actions entirely free (Müller & Turner, 2005).

In agency relationships, zero-sum and positive-sum, which are game theory expressions, can be subtracted. These game theory terms refer to the outcome of a negotiation or dispute. This game theory is about, for example, measurable rewards that each party receives, and this can be money, for example. The terms distinguish between win-win and win-loss. This refers to gain or loss in relation to expectations. In a zero-sum situation, it is inevitable that when one party tries to advance its position, the other party will lose accordingly. The zero-sum situation can be explained as follows. For example, if one party receives \$ 1000 more than the other, the other party receives \$ 1000 less. Loss and win add up to zero. Usually, such situations arise in distribution negotiations where "fixed pie" is to be distributed between the parties. For example, if it is just a job, one will get the job, and the other person will not. This can be explained as such, a job won, and a job lost equal to zero. Positive-sum is about the sum of gains and losses that are greater than zero. This occurs when one gets a larger piece of the total, which means that the parties have an opportunity to distribute more between them than they had before. It may also be that everyone gets what they want or need. To achieve a positive sum, this can occur in several ways. For example, in integrative negotiations, different interests are negotiated here to meet the needs of all parties. In situations where several interests are being discussed, the probability of achieving a solution with a positive-sum is greater (Burgess & Burgess, 1997)

Moreover, the tension between the owner and the agent can end up with poor choices. In some cases, the manager may know more about the project during the process than the owner. The manager has control over the project and knows more about the significant project issues.

Therefore, the owner does not occasionally have good enough insight and understanding of the manager's choices and whether these are the best choices. In addition, the project manager has his interests and may be tempted to make decisions that are best for oneself; this is referred to as the moral hazard problem. Furthermore, the management does what is best for the owner if the interests meet both parties (Müller & Turner, 2005).

Agency theory suggests solving this problem by entering into contracts that align both parties' interests and where the contract is designed so that the actions are considered most appropriate and provide the best return for the agent. The reason for choosing contracts is to minimize the total cost of governing projects, which is done from a Transaction Cost Economics (TCE) perspective (Müller & Turner, 2005).

3.3.1 Transaction Cost Economics (TCE) and Contract Selection

Projects are described as “transactions which are subject to the make or buy decision, because they can be executed within a firm's hierarchy or bought in the market” (Müller & Turner, 2005, p. 399). The choice to make or purchase is based on the combined ramifications below.

- It is about how unique the transaction's object is, unique or specific to a type of transaction. The transaction can also not be reallocated in future transactions. This means "the degree of asset specificity as the most important influencing factor" (Müller & Turner, 2005, p. 399).
- Other ramifications that affect a purchase are the degree of uncertainty that arises. Uncertainty can arise from a lack of communication or from deliberately sending out false and misleading signals. In addition to the above, there is general uncertainty in human behavior and the general risk of obligation (Müller & Turner, 2005).
- The frequency of the transaction also affects the decision to make a purchase. In classically controlled organizations with functional and hierarchical structures, TCE was developed for repetitive and routine transactions. In repetitive transactions, no specialized management structures are required. Cases of unique transactions require more distinctive management structures (Müller & Turner, 2005).

TCE is a theory that deals with business transactions and how they are structured in challenging decision-making environments. These are characterized by uncertainty, and they are complicated, they arise again and again and involve obligations that are difficult to recoup

without significant financial losses (Ketokivi & Mahoney, 2017). In order to achieve the lowest expected transaction costs, TCE proposes that companies must adapt their governance structures. This is due to the complexity of the relationship between a buyer and organizations that sell. It is almost impossible to develop and agree on contracts which are comprehensive enough (Müller & Turner, 2005).

3.3.2 Communication

As a result of the moral hazard problem and the adverse selection problem, the project owner will be less informed about the project's progress than the project manager. The project manager can keep important information to himself. There will be uncertainty associated with information sharing, and the owner may not be sure that important information is being shared. This means that the owner will potentially feel uncertain about the project's progress. Therefore, information sharing and communication from the project manager to the owner is necessary. Examples of important information to the owner are, for example, information about the final delivery that complies with the owner's order and that the project process is followed up by the project strategy. The project strategy includes the requirements for reporting on quality, budget, and schedule. It is essential for the owner that suitable control mechanisms work and are in place to achieve the above. Finally, the project manager must behave professionally and reliably towards the project owner and the others in the process. The chosen type of contract plays an essential role in the depth of information the owner is looking for (Müller & Turner, 2005).

During a project, communication changes are needed for project managers. To develop the "big picture", which serves as a basis for decisions throughout the project. It is essential that the manager in the early stages knows the owners' actual requirements, goals, specifications, priorities, and possible limitations, as this is necessary for the planning phase of the project. At the end of the project, the owner must provide information on how the overall business goal was achieved. The reason for this is that the project manager can learn from the implementation of the project and not least provide necessary and sufficient information to the project group and other stakeholders (Müller & Turner, 2005).

What can prevent the manager from understanding the project's overall strategic or business goal is a lack of knowledge in, for example, the project context or the requirements of the

project. Furthermore, this can lead to problems in collaboration with the project owner. However, the reason may be the differences in knowledge about the project (Müller & Turner, 2005).

A success factor for high performance in projects is collaboration. Müller has empirically demonstrated in his global multimethod study, which was based on 200 projects, by identifying the underlying communication structures between project owners and managers. A two-dimensional model of owner-manager communication was empirically developed by Müller (Müller & Turner, 2005). The empirical study shows:

1. “Collaboration between owner and manager. This dimension is determined by the clearness of project objectives, and the relational norms between owner and manager. The latter is measured as flexibility (willingness to make adaptations), solidarity (avoidance of behavior detrimental to the relationship) and information exchange (proactive, frequent sharing of information)” (Müller & Turner, 2005, p. 400).
2. “Level of structure imposed on the project manager by the owner, measured as the extent of bureaucratic organization structure and clearness of methodology in the project” (Müller & Turner, 2005, p. 400).

The study shows that high-performance projects are characterized by a high level of collaboration and a medium level of structure. The study also shows that low-performance projects showed random levels for both collaboration and structure. Müller's study shows that collaboration is an important success factor but is not the only success factor for high performance in a project (Müller & Turner, 2005).

3.3.3 Principal-agent Theory Perspective

In order to reduce the information imbalance between owner and agent from a principal-agent theory perspective, the communication effects must reach a certain level in order for the equilibrium to be reached. Furthermore, the balance between owner and agent can result in lower communication costs. This is achieved through good (high) cooperation and medium structure (Müller & Turner, 2005).

Through appropriate investment in communication structure, project costs can be minimized. If the communication effort increases up to communication weight, a reduction of

administrative costs in projects is achieved. Furthermore, an increase beyond this point will result in unnecessary administrative costs (Müller & Turner, 2005). Moreover, the principal-agent theory is related to the post-contract phase. That is, “when the project is implemented” (Müller & Turner, 2005, p. 403). In this phase, both the manager and owner face project risk and are therefore motivated to contribute to the project. TCE is about stages before designing the projects. In this phase, decisions about make or buy are made, and a contract strategy is chosen (Müller & Turner, 2005).

Based on the study by Müller and Turner (2005), they conclude that a certain level of communication must be achieved to handle information imbalance between the owner (principal) and agent in a project. The administrative costs are lowest when there is a balance between the need for information and the mutual dissemination of necessary information. Thus, investment in communication should be up to this level. In addition, the contract strategy was chosen for the project, and it was identified to set a plan for communication between owner and manager during the implementation of the project (Müller & Turner, 2005).

3.4 Trust

The more significant the trust is between management and employees, and between employees in different units, the stronger the culture is. This leads to less need for monitoring and controlling each other. If the organization has developed reliable trust, the trust provides a basis for delegating freedom of action to promote flexibility in the organization (Fukuyama, 1995).

Trust is vital and examining what the prerequisites for trust are also essential. Furthermore, one should look at what is required for organizations to be based on trust. It is believed that there are two basic preconditions for building a collaboration on trust. The first is that a strong community culture has developed in the organization and the second that employees have acquired virtues such as loyalty, honesty, and trustworthiness. At the same time, others also remind us that trust between individuals and groups of individuals is often the result of interaction over time (Fukuyama, 1995; Zucker, 1986). Trust can be broken down relatively quickly and takes a long time to rebuild (Frey, 1993).

Trust is an essential factor in a team and a partnership. This means understanding that individuals want to do a job in the best way and that they can continue with the job. In a team,

it is about avoiding cross-checking, that everyone in the team trusts the person next to them and that the person does the right thing at the right time. This allows everyone on the team to concentrate on doing what they are supposed to do. Commitment and open communication arise through total trust and support (Gardiner, 2005).

It takes time to establish trust, and according to Gardiner (2005), it is generally accepted. There is a need for self-awareness for people to trust each other because people must be able to trust themselves before they have learned to trust others. Therefore, it is essential to have confidence and belief in being able to do one's job, which applies to trusting others to do their part (Gardiner, 2005).

Trust is divided into two parts, a structural component, and a behavioral component. A structural component is described as a type of expectation of their partner not to act opportunistically as a verbal hostage situation. What refers to a behavioral component is the level of trust a company has in its partner's integrity and reliability (Kale & Singh, 2009). The former is similar to a deterrence-based trust and arises from governance mechanisms such as contractual agreements or shared equity. The latter is similar to a knowledge-based trust, and this occurs gradually when two parties interact and form norms of justice and reciprocity. For the partnership to function effectively in the post-formation phase, the behavioral component is particularly important (Kale & Singh, 2009).

According to Kale and Singh's (2009) article, trust can be created from a cyclical negotiation process, engagement, interactions, and execution between the companies involved. Researchers have identified various confidence-building mechanisms based on the above. Companies can establish trust by showing that they trust the partner company by making, for example, large unilateral obligations. Instead of just trusting, one can demonstrate one's reliability by fulfilling all obligations carefully and committing to the actions that are only included in the company's power and ability to perform. Furthermore, the company can earn the trust of its partners by committing and living up to the expectations they have. Moreover, interpersonal trust is the third driver to confirm trust, and this is in some cases referred to as "relational capital". This type of trust can be formed between the individuals from the companies that interact through an alliance interface. This refers to social bonds that are formed between persons when "they regularly work with each other, understand each other's working

style and are stable in their respective roles” (Kale & Singh, 2009, p. 51). Trust also depends on institutional factors, including national culture or the location of the companies involved. Trust can also depend on arrangements that exist at industry level to facilitate the interaction between the companies. Building trust in the after-formation of a partnership is essential for achieving success in several ways. This can contribute to greater information sharing between the parties, minimize the understanding of “relationship risk and promote the partners willingness to adapt the partnership to developing preparedness” (Kale & Singh, 2009, p. 51).

Through trust between the parties, the goal is achieved, such as sharing valuable knowledge, and it protects the opportunistic acquisition of proprietary knowledge from the partner. In addition to these positive results, as mentioned above, the study by Kale and Singh (2009) shows that trust can also achieve increased partner satisfaction. That is joint action and goal fulfilment. This also improves the scope and longevity of the partnership (Kale & Singh, 2009).

3.5 Technical and Institutional Environment

It is common to classify the environment into two different types. Emphasis is placed on how technical and institutional environments affect the organization's course of action. All conditions outside the organization that directly affect how one solves the tasks in the organization to realize their goals refer to the technical environment. This can be, for example, competitors, customers, and suppliers. Furthermore, the environment has direct relevance to the organization's efficiency and productivity. According to Jacobsen and Thorsvik (2013), technical environments can be grouped into three categories:

- 1) “Conditions that have a direct impact on the organization's access to resources” (Jacobsen & Thorsvik, 2013, p. 201). These are external factors and are relevant to how the organization acquires resources (input) on which they depend. In order to make investments, organizations very often have to make sure to raise money. They do this independently of banks and financial institutions and sometimes of investors who go in with capital. In addition, it is equally essential for organizations to have access to qualified work. This makes them dependent on educational institutions and the labor market in general. Thus, they need to obtain the necessary information about market development, competitors, or legislation. In addition, it is essential to obtain information about machines and equipment.

- 2) “Conditions that have a direct impact on the organization's production” (Jacobsen & Thorsvik, 2013, p. 202). These conditions are often linked to technological development in society. What characterizes technology are machines and knowledge. Organizations must acquire new technology that often comes from innovations from research and development institutions. Furthermore, technological changes often impact the way one produces, and thus organizations have to assess and acquire information. They may have to send employees on courses to update knowledge.
- 3) “Factors that have a direct meaning on the organization's results” (Jacobsen & Thorsvik, 2013, p. 202). Results (output) are the goods and services the organization produces. Further, external factors focus and are relevant to the results. Demand is significant and is strongly influenced by competition in the industry. In addition, economic development and people's preferences will be important. This means that organizations must adapt their business and must relate to what customers and users want.

The organization must adapt accordingly with their activities if there are any changes in the technical environment, whether it affects input, production, output, or all the above (Jacobsen & Thorsvik, 2013).

For organizations to survive, they must be as effective as their competitors or those compared to them. This means that goods and services must be produced that greatly benefit customers and users are willing to pay for them. Organizations must also produce goods and services at a cost that is not too high. Furthermore, efficiency and productivity are in focus, and the challenge is to find the optimal strategy and structure in relation to the requirements and challenges that the technical environment represents in organizations. Some reasons why organizations are not always adapted to their technical environment may, for example, be that not all organizations are free to adapt to the environment as they wish. The organizations will be more dependent on some actors in the environment because they have resources that they control. In cases where external actors have an essential role for the organization, the more the organizations must consider their wishes and interests (Jacobsen & Thorsvik, 2013).

Some measures organizations can take to reduce the uncertainty that the environment represents are to integrate vertically. Mutual dependency often affects organizations. An example of this can be in the form of a subcontractor and a recipient. To compensate for this uncertainty, the organization seeks to incorporate the organization or organizations they depend

on, and here are oil companies' good examples of vertically integrated organizations. In such cases, a company controls the entire process from oil exploration, extraction, refining, sales, and finished products. Examples of such companies are Shell, Esso and Statoil, now Equinor. Other types of measures organizations can take to reduce uncertainty are integrating horizontally. Organizations can also be competitively dependent on each other, which means that two organizations operate in the same market. You never know what competitors will come up with, and thus competition leads to uncertainty. This can be solved by merging organizations that are in a competitive situation. Moreover, one can also try to reduce uncertainty with collaboration between organizations. Thus, organizations can enter into agreements with others on which they depend (Jacobsen & Thorsvik, 2013). Moreover, values, expectations and norms in the environment refer to institutional environments. This is relevant for how the organizations are perceived in the environment. Furthermore, in other words, the institutional environment includes cultural conditions. What affects the organization's legitimacy is external culture, and it is essential for organizations. This has to do with how organizations are perceived and accepted in the environment (Scott, 1995).

Structural conformity is a strategy that organizations can use to increase their legitimacy, which is characterized by organizations adapting their formal structure to the requirements and expectations of the institutional environment. The organizations must be able to meet the requirements set by essential stakeholders in the external environment. Better conformity between organizational structure and perceptions in the environment about what constitutes a good structure creates more support for an organization and provides an opportunity to mobilize (Jacobsen & Thorsvik, 2013). Another example that can be used is reputation building and management. It is essential to inform the customer or user about the product or service the organization delivers. The customer should be able to attach positive emotions to it, knowing that the product or service exists. This should make the customer feel that the product is good and valuable, which ultimately leads to demand and willingness to pay. Organizations should focus on reputation management, which is believed to be crucial to plan-wise show the industry who you are as an organization, what you stand for and what you are. This is important for the environment to get an idea of the organization's trust and strength (Wæraas, Byrkjeflot & Angell, 2011).

However, organizations must address both technical and institutional environments. Organizations will be in different dependencies on the two types of environments. For example, a small company in a market with strong competition has a strong focus on how companies solve their tasks to minimize costs and profitability increases. The institutional environment of this segment will therefore be less important. Furthermore, competition creates pressure to adapt to changes in competition conditions. In this context, it is to adapt to the technical environment (Jacobsen & Thorsvik, 2013).

3.6 Resource-based Strategy and Relations

Regardless of the type of contract in use, it is important to market oneself, especially for subcontractors toward contractors as well as for contractors toward operators. According to Wernerfelt (1984), a business's competitive advantage and performance can be explained through the unique resources and capabilities. Through a resource-based view, businesses can identify the resources and capabilities that contribute to the value creation for that specific business. Furthermore, the business can create a competitive advantage by doing so, making them attractive for various projects (Barney, 1991). In a harsh industry, as the oil and gas industry are, that is vital to make a name for themselves and be perceived as an attractive business to cooperate with within various projects.

Here, resources are meant by tangible assets that the business has or can retrieve. However, both tangible and intangible are of high importance in this type of industry. Business needs everything from heavy equipment, to have excellent human resources to stand out compared to other businesses. Moreover, it is essential to consider the usage of the resources. Capacity includes how the resources are utilized by productivity, flexibility, and efficiency. It is equally important to possess the resources to use them accurately, in the form of systems, processes, and management (Barney, 1991). Businesses within the same industry may have a large spectrum of different resources and hold a goldmine of opportunities with their specific resources and capabilities. Businesses need to understand what and how they stand out compared to their rivals, take advantage of its possession, and make it a sustained competitive advantage. Barney (1991) points out the difference between a business's competitive advantage and sustained competitive advantage. A competitive advantage can be achieved when the business, through its resources, supplies value to the strategy and no competitor or potential competitor follows up on the action. On the other hand, a sustained competitive advantage is

when the business, through its resources, supplies value to the strategy and no other competitor has the ability or opportunity to copy the benefits. The advantage can not be expected to last forever since unexpected economic structure changes could occur (Barney, 1991). However, the business can be alone with this perk for a period of time and has a vital opportunity to attract projects and contracts together with new collaborators and join new networks that can benefit them for a lifetime.

Research shows that not all firm resources hold the potential of sustained competitive advantage. Barney (1991) highlights the fact that a firm resource must hold four attributes to have that potential:

1. it must appear valuable in the sense that it exploits opportunities and neutralizes threats in a firm's environment,
2. also, it must be rare among a firm's current and potential competition,
3. it must be imperfectly imitable, and
4. there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare nor imperfectly imitable (Barney, 1991, p. 106).

These attributes can together be seen as empirical indicators of how heterogeneous and immobile the resources as well as how valuable the resources are for generating sustained competitive advantages. This model is called VRIO as it includes valuable, rare, imperfectly imitable, and organized resources (Barney, 1991). When cooperating strategically, either in an alliance or in a network, these resources are essential to consider together with the attributes to facilitate the best possible usage of them.

Together with both working on and broadcasting one's own resources and capabilities, the competing businesses must work together and create relationships. Oil and gas is an industry where competition and cooperation are the two main pillars. In fact, petroleum businesses that are in direct competition can also collaborate and have a relationship to strengthen their position in a market or development phase. Bengtsson and Kock (2000) call the phenomenon cooperation a merger between the words “cooperative” and “competition”. They point out that it is a complex way of doing business but could be very beneficial. The complexity lies in the fundamental difference in competing for one's own interest at the same time as one cooperates and has a mutual dependence. Just as in other relations, the parties potentially have a lot to lose if one of them were to act opportunistically. In this way, the outcome can tilt in different

directions if there is not sufficient trust in the relationship (Gnyawali & Park, 2011). This means that it is mainly a matter of having enough trust in each other in addition to taking advantage of one's own and other's resources to turn any project into a win-win situation for the companies.

3.7 Strategic Cooperation

Relations and networks are a large part of the everyday operations for both operators, contractors, and subcontractors in this industry. Therefore, strategic cooperation is arranged to retrieve projects and work but also to have the opportunity to innovate and develop further. According to Wheelen and Hunger (2012), a strategic alliance is a long-term cooperation agreement between two or more independent companies that runs a business for mutual financial gain. Todeva and Knoke (2005) underline that a strategic alliance involves at least two or more partner firms that remain legally independent after the alliance is formed. However, they share benefits and management control over the performance of assigned tasks. Furthermore, the parties make continuous contributions on one or several strategic areas such as technology or products. Strategic alliances have only become more and more common over the years. For example, in the US software industry, the share of listed companies entering into strategic alliances increased from 32% in 1990 to 95% in 2001. Nevertheless, it has proven to be difficult to implement such alliances with a satisfactory result. Conflict over goals and control often develops, which means that alliances can be terminated before they have even taken root in reality. For these and other reasons, statistics show that around half of all alliances end up with poor results (Wheelen & Hunger, 2012). On the other hand, those who make the alliance work can reap the benefits it carries with it and achieve an increase in profitability. In some cases, the projects go exceptionally well and end with a full merger for the companies. In other words, if one creates, sets clear guidelines, and cooperates well, such an alliance can be worth its weight in gold for the companies.

3.7.1 Strategic Networks

Abrahamsen (2013) defines a network as the sum of the total relations that a business has. Therefore, one can safely say that all companies have a network in some way or another through cooperating with suppliers, partners, and customers. In that way, being a part of a network is not something one chooses, preferably something one has to learn how to maneuver.

A network brings both opportunities and limitations, considering they are a source of power and conflict on one side and cooperation and mutual development on the other. Therefore, in what way a company manages to build and develop its relationships will be crucial to achieving success. From a network perspective, it is not precisely the companies that are the essential unit, but the relationship companies have between them. These relationships are interconnected. For example, the business's relationship with its suppliers will affect what it can perform for its end customer.

According to Hinterhuber and Hirsch (1998), strategic networks can be defined as the coordinated cooperation between different legally and formally independent ventures that promote long-term strategic collaboration. However, to make these networks function, the ventures must pursue a common goal and subordinate their individual goals to some extent, forcing them to put together a solid effort for mutual success. Cooperation and competition are two of the top focal points in today's business world. In fact, in recent years, we have witnessed a shift of focus towards cooperation. Even though many industries can be defined by substantial competition, individuals, groups, and organizations are still dependent on each other and serve one another to succeed. Cooperation can be conducted in a variety of cooperative arrangements such as joint ventures, strategic alliances, cross-licensing, and vertical integration to name a few. Strategic networks have also grown to be an increasingly popular alternative for independent organizations (Hinterhuber & Hirsch, 1998).

The rising interest and focus on strategic networks have multiple reasons. Due to more increasing complexity of modern technology and markets, businesses require more significant resources than those at any single company's command. For that reason, even enormous multinational groups with excellent financial base and outstanding management decide to incorporate other companies in their operations. Yet, these networks involve a variety of parties with different backgrounds that could potentially vary extensively. However, they have to see this cooperative arrangement as a means for reaching a superior goal. Hinterhuber and Hirsch (1998) also emphasize the importance of intensive and ongoing communication between the various partners before the arrangement even qualifies as a strategic network.

Motives and objectives for entering into a network may differ from company to company. Expanding to foreign markets may be one of them. Networks, in fact, can provide bridges to foreign markets and support the company's internationalization intentions. The process of

establishing oneself in new markets is very costly and carries a certain risk. By including a local business, one can minimize both factors. Another reason is to reduce risk altogether. One can reduce risk by spreading the risk of large projects between partners in the network, enabling diversification of the portfolio, or even enabling a faster entry and payback. One can also gain economies of scale by combining manufacturing, R&D, or various business activities in the network. In addition, one can retrieve access to technology and patents that they would otherwise not obtain themselves. Increasingly competitive markets demand state-of-the-art technology, which is getting harder and harder to obtain (Hinterhuber & Hirsch, 1998).

Even though strategic networks seem to answer various organizational problems, the medal also has a backside. Hinterhuber and Hirsch (1998) state that being a part of a network does not compensate for fundamental weaknesses. If a business can not contribute by adding value to the network, it can not expect to get anything in return either. Furthermore, it can also be a time-consuming process to get the companies well established in a newly created network, which can be a massive obstacle for the companies that require a fast turnaround in product development for immediate market entry. Analyzing the overall benefit and cost will also, in most cases, be too challenging. Therefore, it isn't easy to figure out whether the network is worth a go or not. At the very least, the parties should keep the emergency exit clear.

3.8 Small and Medium-sized Enterprises

SMEs have often been defined in terms of quantitative and or qualitative variables or properties. The quantitative indicators consist of the number of employees, sales and capital employed. The qualitative indicators can be, for example, legal status, factor intensity, ownership structure and technology. SME from the legal or ownership structure may be acting operationally. This means a sole proprietorship, a private or public liability company, a partnership, or a co-operative. Ocheni (2015) describes that “the definition of the size of the enterprise and their classification into micro, small, or medium has been generally based on criteria such as volume of sales turnover, number of workers in employment, or value of assets and investments” (p. 68). This segment can offer services, be engaged in production or processing in terms of the type of activity they are involved in. Enterprise is explained as a project, a company, an undertaking, a firm, or an individual who engages in economic activity or producing goods or services for sale to others (Ocheni, 2015).

SMEs are usually specialized in the work they perform. This can be within exploration, marginal reserves and or tail production. Some larger companies sell these activities of their portfolios to smaller and specialized companies. This will contribute to more efficient implementation and create more value for the companies. Small companies have several organizational advantages, and they usually operate more cost-effectively through focused and flexible organizations. For example, this could be cooperation through consortia for renting rigs for small companies (Olje- og energidepartementet, 2010). However, large companies can provide what SME seeks to achieve, as several large companies wish to gain distinctive competitive advantages in innovation and renewal of key skills. Creating collaboration between companies is about creating innovation and searching for new complementary skills that can give the companies mutual benefit. Furthermore, the partnership will combine cost-sharing and risk associated with innovation (Barabel et al., 2014).

Ernst and Young’s Norwegian oilfield service analysis (2020) describes that small businesses have positively affected the long-term decline in profitability margins on the Norwegian shelf. In 2018, the Norwegian OFS industry consisted of 1136 active companies, 62.6% were characterized as a small company with an annual income of fewer than NOK 100 million, 31.5% consisted of between large companies with an annual income between NOK 100 million and NOK 1 billion and 5.1% were characterized as large companies with annual revenues above NOK 1 trillion (see Figure 1) (Ernst & Young, 2020).

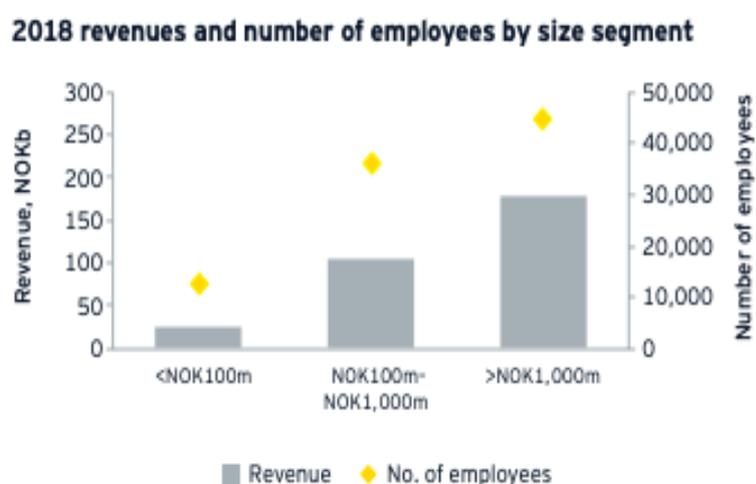


Figure 1 - 2018 revenues and number of employees by size segment (Ernst & Young, 2020, p. 6).

The small companies have also improved 5.9% (pp) on the EBITDA margin, while medium and large companies have had declining profit margins from 2017 to 2018. This means that the small companies have reversed the downward trend. Furthermore, smaller companies often have a limited number of medium- to long-term contracts. This segment is often characterized by few and relatively larger contacts that contribute to income. Moreover, the smaller companies are also characterized by the fact that the contracts are often awarded in the domestic market or against specific export regions (Ernst & Young, 2020).

According to Ernst and Young's Norwegian oilfield service analysis (2020), small companies that offer products, services, and integrated project management for drilling and well construction and interventions and other operations over the life cycle of a well have difficulty obtaining lucrative contracts that can help reverse turnover development. Here, it is usually between medium and large companies that succeed with the contracts (Ernst & Young, 2020).

Another challenge for SMEs is that they have technological innovations, but the competition is significant as an established supplier company often has the exact solutions that cover similar needs. If the need is covered in a safe and operationally sound manner, there will be a question of price, and here the large established companies have a better opportunity than small companies. In addition, there are challenges with incentives, and there can often be a skewed relationship about who takes the risk and degree of usefulness in innovation projects. Small supplier companies often lack financing but are willing to carry out a qualification process. Furthermore, most small companies usually do not have a financial backbone and the opportunity to take on high risk, while operating companies usually have only an upside and no downside (Quale & Ruud, 2006).

According to Quale and Ruud (2006), smaller companies have good ideas or solutions for further development and collaboration. They have great potential for efficient production of related activities in the Norwegian oil and gas industry. Furthermore, the small supplier companies can often come up with creative solutions and proposals, but they are not heard, and the operator has no interest in pursuing this further. This may be because operating companies use well-proven and documented systems instead, which means that the operator limits innovation (Quale & Ruud, 2006).

3.8.1 Asymmetric Alliances

In asymmetric alliances, companies of different sizes, resource levels and various capacities are involved. Cherbib and Assens (2008) state that “the size of the partners is cited as a determining factor [...]. Thus, a partner of greater size in terms of staff, financial results and territorial presence has a greater inheritance and thus potentially more influence in the alliance than smaller partners” (Barabel et al., 2014, p. 90). Based on this, an alliance with a large company can give SMEs a certain legitimacy that they will have problems obtaining themselves without help. Larger companies often have other resources, market, and commercial properties that SMEs need to market their properties, such as technology and secure the reputation of the latter. Alliance with a larger company can allow small and large companies to convert their technological knowledge into salable assets (Barabel et al., 2014).

SMEs can also provide positive and several attractive benefits in such alliances. SMEs have the opportunity to introduce radical innovations faster and at a lower price than larger companies can. Another advantage of SMEs is that they are an essential source of value creation for larger companies, thanks to flexibility (Barabel et al., 2014).

According to Barabel et al. (2014) article, they mention that small enterprises are no longer a competitive disadvantage because small companies have the advantage of managing individuals and thus have greater flexibility when organizing and structuring teams. This is related to a “hyper” environment “(hypersegmentation, hyper-specialization and hypercompetition)” (Barabel et al., 2014, p. 90).

SMEs and larger companies seek shared factors, such as shared goals and specific factors in an alliance (see Table 1).

	Large company	SME
Individual benefits sought by each side	<ul style="list-style-type: none"> - Special competitive advantages in terms of innovation and renewal of key skills - Desire to develop radical innovations more rapidly and at lower cost - Greater organisational flexibility 	<ul style="list-style-type: none"> - Acquisition of critical size - Acquisition of institutional legitimacy that could not have been attained unassisted - Conversion of technological know-how into a commercial commodity
Benefits sought mutually	<ul style="list-style-type: none"> - New complementary skills that are mutually beneficial - Sharing of the costs and risks associated with innovation 	

Table 1 - Benefits of entering into an asymmetric alliance in terms of size (Barabel et al., 2014, p. 91).

There is a risk associated with an asymmetric alliance, and this can lead to complex negotiation methods and affect the relationship between the various parties. Several studies have focused on the crucial reality of achieving a balance both in the relationship and between the relationship with the partners, but in terms of alliance effectiveness. Furthermore, an imbalance between the parties can often lead to imbalance and problems in a contract, which involves value or power, and this will also be unfavorable for the weaker company. However, larger companies usually have greater control in an alliance with smaller companies (Barabel et al., 2014).

Larger companies have a better opportunity to summon experts for guidance and advice. Therefore, a larger company can be more successful in negotiations than smaller companies. According to the article by Barabel et al. (2014), smaller companies are in a dependent situation, as a result of SMEs having to use much of their total resources. Alvarez and Barney (2001) conducted a study that looked at 128 alliances between small and large companies ranging from 1996 to 1999. In this study, three different industrial sectors, the high-tech and information industries (the gas and oil industry, were examined and the biotechnologies industry). Alvarez and Barney (2001) results show that 80 percent of the directors in SMEs felt that the larger companies exploited them. Furthermore, it is also described that these cases are exceptional where the alliance's common goal is to develop, for example, a new technology initiated by SME. In such a partnership where SMEs are responsible for the product's design, SMEs will be willing to accept an alliance as long as it can ensure commercialization and contribute to a successful technological outcome. Eventually, the large company has acquired the skills used to develop the new technology SME stood for and thus, the large company can

decide to break away from SME. SME is now isolated and, therefore, without key resources. SMEs should build a relationship of trust for SMEs to avoid such situations and opportunistic behavior from larger companies, taking care of several of their specific skills. This may be their ability to innovate and limit the larger companies' ability to acquire the technology SME has cutting-edge expertise in (Barabel et al., 2014).

The research of Barabel et al. (2014) shows that an alliance's asymmetry can favor the dominant company and be negative for the weak company. Significant risks associated with the above mentioned are:

- "Initially unbalanced contract in favor of the large group due to their greater resources and expertise" [...]
- "Dependence because of the proportionally greater resources mobilized (financial resources, staff, information and communication resources, etc.)" [...]
- "Opportunistic behavior (with breaking away from the SME in the medium to long term)" (Barabel et al., 2014, p. 92).

There is also a significant cultural risk for both parties. One of the most critical risks in an alliance is culture, which concerns understanding the benefits of an asymmetric collaboration approach and assessing potential management difficulties. An analytical table can be used to understand the companies' respective corporate cultures and the potential dynamics for innovation. According to Barabel et al. (2014), corporate culture is defined as "a system of values (the importance attached to things) and beliefs (the functional aspect of things) shared by the members of the organization and whose main effect is to ensure lasting uniformity of the company's paradigms (interpretation and signification of things) and practices" (p. 92). Therefore, it is essential to have a thorough study of the corporate culture, especially where it is extensive. However, one should not only examine the external manifestations because this can result in a superficial understanding of the organizational culture, for example, that there is a greater focus on examining the companies' common belief systems.

SMEs have several specific skills that larger companies should consider when choosing to ally with SMEs.

- SMEs have limited resources, which means that they have an excellent need for efficacy and efficiency.

- “Greater flexibility allows more rapid adaptation to changes in the environment (ability to react)” [...]
- “Less bureaucracy generates a dynamic entrepreneurial spirit, primarily as a result of flexibility of internal communication” [...]
- “Internal stability concerning company values and culture as well as long-term prospects act as filters, or safety barriers, conducive to modelling or directing innovation towards the durability to the companies concerned” (Barabel et al., 2014, p. 93).

An initial culture shock between an SME and a large company can occur during an alliance context, and this can be a risk for both. An innovative project can lead to the alliance's danger and a high risk of failure. Strategic approaches such as goals, motivation, and context with a socio-cultural approach that means specific features, values, and internal characteristics should be considered in implementing an alliance between an SME and a large company. There is a risk that the alliance may fail without such a socio-cultural approach, and this is due to a lack of trust between the partners. There is also a risk that the project will not achieve the goals or that disappointing results will arise if a strategic approach has been absent (Barabel et al., 2014).

3.9 Competitive Market

Competition is an essential instrument in most industries. In the short term, competition between different providers contributes to a more extensive selection and lower prices. In the longer term, competition is a contributor to innovation and growth. The competition will also result in more efficient resource utilization for the companies. Together this makes Norwegian companies more competitive, not only in the national market but also in the international markets (Nærings- og fiskeridepartementet, 2013). One of the main arguments for why an operator should engage in competition for its contractors in the oil and gas industry concerns the price of the products and services. If there exists a competition, the prices on the products they want would be lower compared to if there, for example, was a monopolist contractor. Price competition between the contractors will also provide incentives such as cost-cutting and efficiency improvements (Anton & Yao, 1987).

Moreover, the supply chain in the oil and gas industry holds a large number of SMEs that provide services and technology to support the operations of the contractor and operator. To achieve efficiency in the supply chain, it is significant that those service providers are managed well. Furthermore, the agility of these firms across the supply chain is of great importance related to competitiveness. Yusuf et al. (2014) define agility as “the successful adoption of competitive bases by integrating reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in an uncertain market setting” (p. 532). Here, competitive bases can be understood as speed, flexibility, innovation proactivity, quality, and profitability. In other words, the small- and medium enterprises bear much responsibility on their shoulders. The giants of the market pave the way for the industry, and the smaller ones have to adapt to be along for the ride. Therefore, SMEs must be agile to facilitate flexibility and responsiveness to changing conditions and require less planning and more resilience towards new projects (Serrador & Pinto, 2015).

3.10 Digital Development in the Oil and Gas Industry

Digitization could promote the potential for oil and gas companies worth \$ 1 billion, according to the World Economic Forum. If the oil and gas companies manage to utilize newly developed and emerging digital solutions in various areas such as lifetime lifecycle management, customer engagement and collaboration, the companies have good opportunities to be able to transform the business and operating models. Digital solutions can be demanding to get in place in such an industry, so one can not expect miracles to be done (Achilles, 2021).

The oil and gas industry are lagging in digitizing the supply chains, and there are several barriers to change in this sector. For example, the industry's framework conditions were not developed through the data sharing we know today. There has been much focus on obtaining the first oil, and therefore efficiency has not been a priority. This has been one of the factors that costs have increased over the years. Furthermore, this has led to a lack of data standardization and data sharing throughout the industry. Digitization for upstream companies and the supply chain in the oil and gas industry is an obvious opportunity (Achilles, 2021).

The oil and gas industry uses digitalization and has been for years. The industry consists of large amounts of data and advanced systems for data processing, reporting and analysis. The systems that have been used have had less focus on data flow potentials between actors and areas and more focus on the needs of the individual companies, technologies, disciplines, and

projects. Furthermore, this has led to a high degree of company-specific and proprietary systems solutions, which has further led to forms of interaction between both actors, locations, and phases, which have therefore been cost-driving (KonKraft, 2018).

In the oil and gas industry, there has been a small degree of data sharing and reuse. The data flow has been prevented by insufficient standardization of interfaces and lack of data conventions. This is because several companies have spent a lot of resources on their systems, quality checks, data conversion and manual processes. These conditions will probably help maintain competitive structures and patterns of action, which will not be optimal for the industry. In addition, this will make it more difficult for new actors to emerge who could have had much potential to contribute to new and more effective forms of collaboration. The new development of data technology has led to new forms of interaction across several industries in recent years. This has led to increased efficiency in the value and supply chains. The oil and gas industry has had the least efficiency in realizing efficiency and productivity effects through digitization, data sharing, and interaction between actors and data flow. According to McKinsey, the total annual savings potential through digitization on the Norwegian shelf is estimated at 30-40 billion NOK (KonKraft, 2018).

Using digitalization can result in faster and more informed decision-making, disintegrate the functional silos that have formerly weakened data sharing and contribute to more efficient contact and collaboration between buyers and suppliers (Achilles, 2021). The rapid development of digitalization will have an impact on the petroleum business' future. Digitization consists of further development of integrated operations, robot technology, utilization of the possibilities that lie in the analysis of large amounts of data, remote control, automation, and artificial intelligence. This digital development can, for example, create more efficient work processes, provide better analyzes, replace manual work, and contribute to better decisions. This will create positive effects for HSE, such as reduced exposure and greater competitiveness will be created. However, this development can also pose challenges. These challenges may, for example, be related to situational awareness, incorrect action, and information security. As a result of digitalization, the industry should actively follow up on changes in the risk picture (Arbeids- og sosialdepartementet, 2018).

3.11 Digital Platforms

Digital platforms can create new business strategies made possible by cross-boundary industry disruptions (Bharadwaj et al., 2013). According to Rogers (2016), a platform is defined as a “business that creates value by facilitating direct interactions between two or more distinct types of customers” (p. 56). Srnicek (2017) explains that platforms are digital infrastructure, the infrastructure creates opportunities for two or more user groups to interact. Furthermore, platforms can often come with several tools that enable users to create their own services, products, and marketplaces (Srnicek, 2017). This eliminates the need to build a marketplace from scratch, as platforms bring together consumers and producers and allow them to interact on the marketplace, providing basic rules and infrastructure (Van Alstyne, Parker & Choudary, 2016).

Several choices must be made by a platform owner when choosing to start a platform. Furthermore, one should choose who should have access to the platform, the management structure (what is allowed to do) and how accessible the platform should be. The platform should be built on producers and consumers to interact and share their ideas and resources (Van Alstyne et al., 2016).

Several challenges arise when companies want to use platforms, such as changing landscapes of competition and collaboration. These challenges are not only strategic, but there can also be organizational challenges such as openness. Companies must be able to handle asymmetric challenges to handle the competition in the digital world we live in. The challenges are changing the roles of competition and collaboration for each industry (Rogers, 2016).

A digital platform can be a cloud, which can create a network of connected devices and between workers in, for example, all parts of the supply chain in the oil and gas industry. The advantages of this are to be able to real-time monitor processes, equipment, and remote control of workforces. Using a cloud opens up opportunities to coordinate work centrally, making it easier for employees who, for example, are spread over large areas. In addition, construction managers are allowed to keep a safe and auditable overview of all aspects of operations over time (Achilles, 2021).

OpenEarth Community

Over the last three decades, the industry has experienced that there are challenges in managing the transfer of, for example, information between applications and making upgrades without losing valuable data and context. The reason for this is that exploration and production (E&P) software platforms have primarily been developed as proprietary and domain-specific closed systems. Companies experience that it can be difficult to decide which platforms they want to use. In addition, companies experience that platform developers decide which features are available. It is also perceived as a challenge for companies as they are limited to applications that are best suited to integrate across applications that best meet the company's needs (OpenEarth Community, 2019).

The industry needs a new and open approach to the community because of these limitations. Therefore, new solutions must be developed, how companies can collaborate to create more innovation and streamline the adoption of new technology. OpenEarth Community has been developed to establish a platform to solve the above challenges and is a concept where the industry can meet without being competitors but act as global problem solvers (OpenEarth Community, 2019).

The OpenEarth Community strategy is to move resources while at the same time taking into account the individual business goals that are shaping the industry towards a better closing time. The OpenEarth Community is intended to create a collaborative environment for petrotechnical computing. It should be an open environment that allows engineers, software developers and geoscientists to collaborate towards a shared goal. The visions are to contribute to an increased innovation pace while reducing costs by keeping the technology up to date (OpenEarth Community, 2019).

OpenEeath Community is a cloud-based platform designed to create opportunities to simplify application development, quickly deploy new technologies and consolidate digital platforms. The OpenEarth Community users' characteristics are industry champions and pioneers looking for better ways to approach exploration, development, and production (OpenEarth Community, 2019).

4. Research Methodology

Initially, in this chapter, we want to explain the characteristics of a qualitative approach. Further, we will present in-depth interviews and how we have used them in this study. We will also highlight the different choices we have made in relation to the areas we want to investigate. The section concludes by presenting how we obtained data to illuminate the current situation best possibly in the Norwegian oil and gas industry. By conducting this study, we want to retrieve answers on how integrated contracts affect the oil and gas industry, focusing on SMEs. Furthermore, we were also interested in finding out whether digital platforms have made it more manageable to implement relations that such contracts demand. To become more enlightened surrounding the topic, we conducted eight in-depth interviews with representatives from different positions and companies in the industry. Therefore, we have interviewed two informants from operating companies, three informants from large service companies, and three informants from SMEs. Furthermore, the research was reported to Norwegian Centre for Data Research (NSD) and then approved with terms.

4.1 Qualitative Method

Krumsvik (2014) describes the methods as “showing the way towards the goal” (p. 122). One can think of the method as a tool in a research design to collect the correct data necessary to find the answers to questions in a study. There are mainly two differences between the methods in the methodology: qualitative and quantitative (Krumsvik, 2014). A qualitative research method is used when the mission is to create an understanding. The research method is described as a more in-depth study of a phenomenon, such as human experiences. In a qualitative method, the collection of raw materials has often been carried out through interviews and observations to strengthen credibility. Data can also be retrieved from public documents, newspaper articles, and books (Johannessen, Christoffersen & Tufte, 2011). Based on the above, the researcher is relatively free on how to approach the method.

The overall goal of the qualitative method is to get inside information, and with this, the researcher himself will try to understand how the individuals interpret their situation. Using the qualitative method, we can obtain much information by using a limited number of informants. It can vary how many informants are needed, depending on what one wants answers to. The issues with using this method can be interpretive, theoretical, or descriptive

questions (Johannessen et al., 2011). The qualitative method is closely linked to practice, and Professor Sharan Merriam states that it has its implications if not executed correctly. According to Merriam, "qualitative research is an umbrella concept covering several forms of inquiry that help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible" (Krumsvik, 2014, p. 10). This means that this method is an excellent way to display current issues in an entire industry.

4.2 Advantages and Disadvantages of Using Qualitative Method for our Study

By using a qualitative approach, we get the opportunity to obtain more in-depth information, and through interviews, the informant gets the chance to answer in complementary and with good answers. The interviewer is not only given the opportunity to hear the answers directly but also to read the body language of the interviewees. This can be just as important in some contexts. Jacobsen (2005) describes going into the depths of a phenomenon as the researcher wants to obtain and dig out as many details and different nuances as possible in order to be able to describe the phenomenon being investigated. Using in-depth interviews, we can ask follow-up questions during the interview if something should be unclear or if we want an even more comprehensive answer from the interviewee.

When using a qualitative approach, a major disadvantage can arise in a time-limited work period, which is that obtaining such information can be relatively complex and time-consuming. It can be more complicated to conduct enough interviews and thus end up with a few views. The result of this is that we have to be a little critical of the answers we get and do not necessarily state that this is exactly the case. In order to get a more correct and fairer picture of reality, it is necessary to have more informants both within the same company, from several companies and distributed over a larger geographical area.

If we had instead used a quantitative approach in our research, we would have had the opportunity to obtain more extensive data. The result of this could have given us a wide range of data and had the opportunity to cover a larger geographical area. This can be a disadvantage for our research as the factors we need to obtain will be unsuitable for a quantitative analysis. It will be more difficult in quantitative analysis to include factors that are essential to our study, such as including the perspectives of SMEs concerning whether integrated contracts contribute to inclusion. In addition, there will be a disadvantage in that we will lose deep answers from

the informants and miss crucial information for the research. Furthermore, it may also be easier for the informants to be dishonest if we use questionnaires or similar in a research like this. Thus, it is essential to consider the different methods carefully when embarking on such work to achieve the result one is looking for (Johannessen et al., 2011).

We decided to choose a qualitative method after studying the various method approaches carefully. The choice is based on the fact that we wanted to go deeper into the informants and gather as accurate information as possible. Using a qualitative approach, we assume that we gain deeper insights that will give us a fairer picture of integrated contracts and the impact of the contract on SMEs. At least, to a much greater extent than what we could obtain using a quantitative method.

4.3 Validity and Reliability

In order to have the opportunity to utilize the result, we get from the data collection, at all high demands are placed on accuracy. The quality of the findings may be less good if one does not operate precisely. Therefore, validity and reliability are two concepts that can determine whether the findings are of value or not.

Validity in qualitative research is, according to Johannessen, Tufte and Christoffersen (2010), described as the way the researcher approaches, whether the findings accurately reflect the overall goal of the study and how the study can be related to reality. In qualitative research, the concept of validity is, in short, whether one has examined what was intended to be investigated (Langdridge, 2006). Therefore, we carefully selected interview questions in our research. It was also perceived that the informants would have relevant knowledge and be able to answer the questions adequately. For the validity of the interviews, we have tried to ask as open questions as possible. This is to not angle the answers in the direction we wanted and to allow the questions to be interpreted differently by the various informants. In addition, we have also chosen to reproduce some parts of the interviews in the text, literally as the interviewees described during the interviews. The reason for this is to strive for validity. Individuals acted as representatives of the various companies, the informants spoke on behalf of the whole company. The possibility that the informants' personal experiences and opinions are reflected in the interviews cannot be ruled out as there is always a question of uncertainty regarding the possible personal bias. This is a significant disadvantage and an essential aspect of qualitative

research methods. Due to the researcher's bias, the possibility of not presenting the findings is also objective. Furthermore, when analyzing the interviews, the researcher can also be biased by thoughts and reflections and generalize. These disadvantages were closely monitored during the interviews due to the awareness of this. However, the possibility of such a bias can never be completely ruled out (Hammarberg, Kirkman & de Lacey, 2015).

According to Thagaardt (2009), reliability is about the consistency and credibility of the research result. Therefore, questions arise concerning the result of the research and whether it would have been the same outcome if another researcher had used exactly the same method. Langdrige (2006) points to the stability of the findings, and the importance of them if one wants to generalize on the basis of them. In relation to the interview, this would be about whether the interviewee had changed his answers in an interview with another researcher (Kvale, 2010). This will be difficult for us to know, and we have to trust that the interviewees respond as honestly as possible. To avoid this in the best possible way, we designed the interview guide so that several questions were asked about the same topic to be more difficult for the interviewee to be dishonest. After the interviews were completed, we transcribed them. In order to best take care of the raw material we got from the interviews and not put our own stamp on them, we got consent from each informant to record the sound of each interview. When the interviews were completed, all interviews were transcribed. To get views from both operator, supplier, and subcontractor, we interviewed representatives from all levels. Our sample and data collection provides an opportunity to examine our research questions. However, at the same time, we should be careful about generalizing. We examine key actors on the Norwegian shelf, but there is no guarantee that the respondents' views and impressions are representative.

4.4 Participant Selection

For qualitative research, the choice of the correct key informants is an important topic. It is dependent on the purpose of the thesis is how many informants are needed (Postholm, 2005). It is impossible to interview all the employees in the selected oil companies because conducting personal, individual interviews are time-consuming. Therefore, a deliberately small sample of informants was chosen. We had some selection criteria, and it was whether the people we wanted to interview worked in central oil companies and had relevant professional responsibility in contract management and procurement. We conducted a strategic selection of

informants from small to large oil companies in Norway, a total of six oil companies, to see if we could uncover differences in the understanding of integrated contracts and how the size of the companies is affected by this type of contract. The informants were recruited directly by contacting the person via email, and the reason for this was because we knew that these people had experience with the topics. One of the informants is a personal acquaintance who works for a large oil service company in Norway. We asked the informant for help and tips to other actors who had knowledge of and direct experience with the chosen topic. Thus, we also recruited indirectly by having personal acquaintances pick out informants they knew had a lot of knowledge about the topic (see Table 1). Furthermore, all communication took place via email.

Informants	Position / area of responsibility	Working years in the oil and gas industry in Norway
Informant 1 Subcontractor	CFO	9 years
Informant 2 Subcontractor	Sales Manager Previously worked for one of the major oil service companies.	15 years
Informant 3 Subcontractor	Operations Manager Is a small Norwegian oil service company. Area of responsibility for all global operations.	21 years
Informant 4 Contractor	Contracts and Proposal Manager. Area of responsibility; integrated contracts, both in the tender phase and in contract execution in the contract phase.	25 years
Informant 5 Contractor	Project management. Previously worked with business development, direct operations within certain products.	24 years
Informant 6 Contractor	Assistant rig manager	31 years
Informant 7 Operator	Lead Advisor Supply Chain Strategy	16 years
Informant 8 Operator	Contract Manager and Principal Consultant	34 years

Table 2 - Informants.

We wanted to recruit informants who have worked in the oil industry for a long period of time because they have had the opportunity to gain an understanding and create a picture of integrated contracts and the development of this type of contract. However, had we chosen a random sample for such research, we could risk ending up with little and inaccurate information. Furthermore, Table 2 shows that all the informants have worked in the oil industry for a longer period. Some of the informants have gone from working in large oil companies to smaller oil companies. Thus, these people can give us insight into integrated contracts and whether SMEs are included in this type of contract.

According to the consent statement, the informants can withdraw at any time, and then there could be fewer informants than planned. Both informants and the companies' names are anonymized in the thesis not to create problems or unpleasant situations for any of the oil companies. The correct key informants are an essential topic, according to Postholm (2005). It may seem that the informant selection was large enough based on the amount of useful data. The informants also had some agreement, but it is difficult to establish that the sample selected was the number that provided the greatest possible confidence. The size of the sample was selected based on the time available for the work on this research.

4.5 Data Collection

According to Widerberg (2001), an interview guide should be based and built around the researcher's topics. Therefore, our focus through the design of the various interview guides has been focused on the study's issues, aiming to examine integrated contracts, how SMEs are affected, and if digitalization strengthens their relations. We chose to make three different interview guides for the three respective groups we were to interview (see Appendix 1). We kept the majority of the questions equal in all the guides but had to make some adjustments as they were directly aimed at operators, contractors, or subcontractors. In preparing the interview guide, we used our research questions along with the theory chapter as a starting point to get a frame of reference for further work. Kvale (2010) underlines the importance of the first minutes of an interview. We, therefore, started every interview with a small introduction which covered what was coming, who we were, and some general questions to the interviewee to start in an elementary way where we gained knowledge and trust. The first part addresses integrated contracts to get an insight into whether this form of contract affects the SMEs, and if so, in what way. Second, we went deeper into the role that digital platforms have played for both the

company and the contracts. Several questions were asked related to each of the topics to gain a deeper understanding of several aspects concerning the overall topics.

When all the preparation with the interview guide and gathering of informants was finished, the interviews could be planned. Due to the ongoing Covid-19 pandemic, we could not invite physical attendance, and they had to be carried out on Microsoft Teams. We, therefore, conducted eight video interviews over the online service who were all great as a basis for the analysis. Audio recordings of all interviews were also taken with consent. This was done so that we could secure all valuable information without having to take notes and lose focus during the interview.

4.6 Method Used in the Discussion

After the interviews were completed, we were left with a large amount of material to be analyzed, some more relevant than others. Therefore, we manually chose what would best answer our research questions. However, there were some questions we wanted to include but had to exclude or extract for the essential parts. The reason for this was because a few of the informants spent a long-time answering parts of the questions, leaving us with time constraints, where a few of the questions were not asked to all informants, resulting in deficient or less good answers.

As stated, our eight informants come from six different companies and possess diverse experiences. Nevertheless, everyone has had a long career within the industry, ranging from nine to 34 years. We will accordingly not weigh their answers any differently and will set them up against each other to bring out either agreement or disagreement in both presentation and discussion. To highlight good quotes and points made, we went in-depth on each answer we had received and reproduced it in the presentation. Furthermore, to underpin the discussion, we have also chosen to include previous research. This was done as a measure to examine whether our interpretation could be substantiated. As a result, the interviews became in line with the relevant literature, the basis for analyzing our research questions.

5. Results From the Data Collection

In this chapter, we are going to present the findings from our conducted interviews. Furthermore, we will display some of the answers we got in both sentences and tables to declare the informant's opinions as straightforward as possible. Which again will help us to answer the research questions.

As already stated, our primary mission is to study whether *the use of integrated contracts contribute to more inclusion of small and medium-sized enterprises?* Furthermore, we are studying how integrated contracts influence the opportunities for SMEs in large offshore sectors, and if the usage of the contracts has affected their market development in the Norwegian oil and gas industry. We also take a closer look at access in the market before we see if new digital platforms have potentially made it more manageable to maneuver these contracts. Therefore, our presentation of the findings is broken into three parts to be able to answer the main issue in an orderly and efficient manner. For clarification does informant 1-3 represent subcontractors, 4-6 contractors and 7-8 are operators.

5.1 Influences of Integrated Contracts

We more or less asked every informant the same questions to receive different perspectives concerning the same topics. We started by asking the interviewees how they understood the concept of integrated contracts. Every informant seemed to be very enlightened on the subject and all the informants agreed that integrated contracts are about delivering a product or a service in a total enterprise. When asked about the positive aspects of integrated contracts, all the informants could tell us that there were several perks to it despite some negative sides. The operators could enjoy lower prices and increased interaction with the contractors. With a tighter relationship, they could communicate better what the end product should be and work through it together.

It is positive that you get interaction, and if you also manage to put the right incentives in the same contract, the upside is quite extensive. - Informant 7

The contractors also focus on a “One team”-mentality with better cooperation with the operators. Informant 5 also points out that it creates a slightly different dynamic in the

companies that deliver all the services, where it can be more up to the contractors to promote solutions or products.

We can see when having this close collaboration that we deliver better as well. The wells get cheaper, and we have a common goal and success that results in a greater return. - Informant 6

Informant 6 put great emphasis on the importance of collaboration, and how this can be a positive contributor to all parties. However, the last group, subcontractors, do not have as many words of praise as the others. Some manage to highlight a few positive aspects, such as getting their name and product out to the industry when given a job. Yet, there is more negativity than positivity to be traced here. Informant 3 flat out tells us that there are not any positive aspects for his business.

According to informant 5, the previous editions of integrated contracts were only to compare conditions, which did not contain a total delivery or incentives, and had no parallels between the various services. The informant further describes that the company used to sub-optimize individual services, however, now they sub-optimize individual services but also include multiple services to the same company. Furthermore, the informant describes that joint incentives have gradually been developed in contracts that reward the supplier for the total delivery. Through management discussions and conversations, a better understanding of the various companies' drivers has developed.

Informant 3 describes that the services and products to third parties are not as strongly included. However, he does point out that he has witnessed a change in the industry and that small oil service companies are starting to become more visible and respected. This can signify that the contractors are comprehending the value that the SMEs represent. He affirms that the curve is pointing in the right direction, but that there is still a long way to go. Informant 7, on the other hand, believes that integrated contracts have led to some of the major suppliers gaining great power in the market. The development has been in the direction of specialization based on large contracts. In recent years, there has been a change in the value chain in the contracts, according to informant 1. The development moves in a direction where, for example, an operating company in contract negotiations includes several companies in the same contract. Informant

1 mentions that it is now, to a greater extent, possible to price in other costs that may arise during the project. From the point of view of a small oil service company, oil companies are perceived as less stingy than before.

The experience of recent years in collecting data digitally has been positive for the development of integrated contracts, according to informant 2. Moreover, informant 4 points out that they have gradually gained more experience on how companies can interact in integrated contracts to achieve the best possible result. Based on experience, an understanding has developed of what the supplier's expectations are. At the same time, informant 4 mentions that incentive models have developed, as they are simpler and easier to understand and are perceived to be aimed at total well delivery.

When it comes to mediating the contract, the two large oil service companies say that they usually negotiate their terms with the small oil service companies. Informant 5 mentions that for medium-sized companies with significant finances, the company tries to negotiate a Back-to-Back contract. In the case of a Back-to-Back contract, the conditions described by the end customer in the contract to the contractor also apply for the SMEs. The parties thereby achieve equality in the contract, i.e., the parties share the risk associated with the delivery. Furthermore, informant 5 highlights that small companies cannot enter into a back-to-back contract in the same way as medium-sized companies. For these, there are often other conditions that make up for the end customer's conditions. The informant underlines that the reason for this is that their company should not bear a commercial risk itself. Moreover, informants 4 and 6 point out that it varies how they enter into contracts with the small companies. In general, they want as far as possible to renegotiate the contract terms they have with their customer to their subcontractor. Furthermore, informant 4 describes that it is understandable that small companies with a single service, which is a small part of a total project, must have adjustments in their contract. He further mentions that, in such situations, it must consider what is practically possible, sensible, and fair for a subcontractor to take on risk in the contract. In addition, informant 4 points out that one must assess the complexity of the subcontractor's service.

The more complex and direct impact the service has on progress, the more important for us it is that they take on the same type of risk that we have in relation to our customer. - Informant 4

Informant 3 mentions that there are usually negotiations a bit back and forth in a contract. They generally get a draft from the big oil service companies, mostly consisting of standard terms and conditions. Furthermore, informant 3 describes that they enter into Back-to-Back on the specific contracts that relate to specific oil fields. Operations that go beyond the scope of the contract, the company has agreed on other conditions. While in an integrated contract, the back-to-back method is most widely used. The reason for this is because the decision is in the hands of the contractors, and they obviously want the very best for themselves. So, if SMEs want a part of the project, they sometimes feel obligated to accept whatever terms are handed to them. Informant 1 points out that their company is not willing to take on the risk of the large service companies. To avoid this risk, the company has been strict in renegotiating contracts and demands to come up with prices before the contract negotiations start. He further states that this is especially true in contracts for services performed in the North Sea and where their equipment is desired. In fact, his company is well appreciated and highly valued in the industry, so the contractors and operators are sometimes willing to pay more to include them. Yet not all SMEs are in such a great position and must agree to take big risks that could end up being detrimental to them.

Informant 2 states that the parties already have an agreement on terms and conditions when the contract was signed. And that in this way it will be difficult for SMEs to negotiate benefits for themselves, if this has not already been taken into account when the contractor entered into the contract with the end customer. The informant mentions a classic example:

The contractor could find out after a few months that the SME is interesting and wants to include them in the contract. Then they send the same agreement they have with the operator to the SME. It is challenging for the SME to make any changes to the contract as the contractor must convey back to the operator that the small company does not accept these terms. The operator conveys back that you have to sort this out otherwise you can not deliver this service. - Informant 2

Informant 2 also describes that they have negotiated their terms with the operator where they have direct contact with the operator, which is looked upon as a great advantage for their company. They then have the opportunity to explain what they think and feel about the terms

of the contract. Often, it is easier for an operator to accept negotiation than it is for the contractors, as it is the operator who is the end customer and can better see the value of paying a little extra for enhanced services.

Incentives

The contractors and operators describe that incentive schemes are closely linked to integrated contracts and are often related to time or cost to the delivery. What triggers the incentives is that the product or service is delivered according to the agreed time, or to the agreed cost in the contract. In cases where the contractor delivers the service before the agreed time, they will receive some sort of appreciation, often in the form of a bonus. Likewise, if the service is delivered at a lower cost, the contractor will also receive incentives. Informant 5 confirms that these are the main mechanisms that exist today. The contractors describe that the incentive schemes mainly are divided into two bonuses, which is a section bonus and a well bonus. The incentives are divided into two because if, for example, unforeseen incidents occur with the well, the oil companies want there to be incentives nevertheless to maintain the will to deliver good sections. In addition, informant 6 describes that the contract delivery is in accordance with the agreed budget. He also points out that there should be no severe HSE incidents, and that the desire to obtain a bonus should therefore not be at the expense of safety in the workplace. The above may be the reason for a waiver of the bonus.

The operators explain the incentive schemes in much the same way as the contractors. The operator mentions that in order to get faster progress, there must be an incentive in the contract to the supplier to deliver faster.

If they get paid for the number of meters they have drilled, instead of getting paid for the number of hours they have drilled, then there are two very different drivers. If the contractor gets paid per hour, then they will spend as many hours as possible. But if the contractor gets paid per meter, then they will try to deliver as many meters as possible at the same time, or in a shorter amount of time, then they can move on to the next well and deliver new meters. - Informant 8

Therefore, the intention is that there should be a benefit for the contractor and the operator. The operator describes that they pay a fixed price for a well. Furthermore, the operator mentions

that part of the contract amount goes to the offshore employees' welfare account. This is a perk that goes directly to the workers who have been involved in completing the well. The money is available as soon as they get onshore, and can be used for a better dinner together, to go bowling or other social gatherings. The welfare account is used to build and develop the team to embrace the "One-team"-mentality.

Barriers

When asked what the perceived biggest challenges when operating with integrated contracts are, several issues were addressed. Operators point out that the meaning behind the integrated contracts is to transfer risk from themselves to contractors. However, in theory, it is still the operators who are left with the risk, according to Informant 7. She underlines that the financial burden is often too significant for the contractors to maintain, and therefore the operators have to step in, which damages the effect of the integrated contracts. Informant 8 focuses more on the cultural aspect. He puts forward the difficulties in cooperating as close as one has to in these contracts. The culture has to change and create a type of hybrid between the two already established cultures. Management is also mentioned as a challenge. When dealing with traditional individual contracts, the operators could dictate and put forward precisely what they wanted. Still, in an integrated contract, the contractor is more included in the end product as well. Contractors, on the other hand, have a different outlook on the topic. In their opinion, the problem is to coordinate value creation. Informant 5 mentions that today everything is circled back to delivering a product or service in the shortest amount of time which often results in a different standard and quality than what provides the maximum earnings for them. However, the operators are left with a well that produces the same amount of oil and gas, so they are satisfied either way.

As expected, each level of the industry struggles with different issues concerning the contracts. The subcontractors are concerned about the increased risk they are forced to take on. According to Informant 1, some clauses in the contract say if there is downtime on the equipment, neither of the parties gets paid for that amount of time. Therefore, they have to agree upon the same terms as the contractor acknowledged with the operator, whether they want it or not. Being recognized as a valuable asset also seems to be a problem for SMEs.

Small enterprises do not get their technology broadcasted to the operator, which results in the end-user may not get the optimal selection of products to choose from.

- Informant 3

When the subcontractors further formulate their main issue, they emphasize the contracts' link before reaching themselves. Most operations stop at the level of the contractors. If contractors can execute the task themselves, they do. Therefore, it is a limited amount of work that makes the cut to the third level, the subcontractors. As an informant for the group put it:

Oil companies (operators) have many clauses in their contracts, both with us and large oil service companies that underline the promotion of new technology and make new technology available. However, when the prominent service providers who deliver much of the same services as us, but with aging equipment, are the ones to manage the contracts, deciding what scope we are offered, they will promote their own. So, when they don't have the ability to deliver or are out of equipment, we get the possibility.

- Informant 1

In that way, contractors function as a funnel for the work of SMEs. Furthermore, the entire industry has a mutual agreement that these contracts are constructed for the prominent service providers, which there are mainly three of on the Norwegian continental shelf. They all point out that the contractors are the only ones who have the ability to deliver services of such a size that these contracts demand.

Collaboration Across the Supply Chain

By using integrated contracts, one might think that the collaboration became a central part. We, therefore, asked our informants how that had evolved. Once again, subcontractors can control their enthusiasm. All three informants representing this group have a two-sided answer. Neither of them antipathies the extra link between them and the end customer. Informant 1 feels that the relations and collaborations are in a forced form because of this and are not optimal at the time being. In specific associations, they feel like "an evil" forced to participate, while in others, the contractor sees the value in their work, and the relations are strong. In other words, the situation is very different depending on who they work with. Informant 2 highlights positive sides, such as building a network and getting their name out to a broader audience than before.

They have settled down with the fact that integrated contracts hamper them in specific processes while they can positively affect other operations.

On the other hand, contractors and operators agree that integrated contracts have made certain processes more difficult, while some have simplified. It is pointed out that the collaboration between the two has improved greatly.

I think the first thing that has developed is management collaboration. That is, the operational managers' partnership across companies has improved. There is probably a greater degree of agreement on common goals and objectives, and there have been better collaboration at the management level. - Informant 5

Several of them also point out that contractors are, compared to before, included in the process at an earlier stage. Informant 6 thinks that this has to do with the bonus model and the desire for the most orderly process possible. One team mentality is also underlined here. Where the practical operational side is all represented in one group working together in-house. However, from what we got from our informants, these teams do not include subcontractors yet.

5.2 Challenges for Small and Medium-sized Enterprises

The three informants from the small oil service companies were asked how integrated contracts affect their companies. Informant 3 experiences integrated contracts as follows; they must contact two parties, they must first sell the service to those who will recommend them further. Then the company must be sure that the information is passed on and reaches the end-user. Informant 3 describes that now they have to sell to two parties. He further describes that there have been changes, and now they have to communicate with more people and involve more than before.

Informant 1 experiences that they are forced into the contract and have not received more work due to this type of contract. They have to work hard and put their own network to use in order to get work. Beyond that, the informant describes that they take on more risk and get smaller margins. Thus, in certain aspects, does integrated contracts negatively affect their company. In addition, he mentions that they have to share risk with the large oil service companies that have heavier decision-making processes and use much older equipment. So, if the contractor

experiences challenges in the tasks conducted, such as downtime, that would very much affect the subcontractors as well. Moreover, informant 2 focuses more on the relationships that occur in such contracts. Integrated contracts are seen as a challenge for those who are a relatively small company. The informant mentions that they want to have a dialogue directly with an end-user or operator. The reason for this is to explain to them directly why they should use them. However, suppose the small company is bound to sell the service to a supplier who has a competitive business. In that case, it is thus much more difficult for them to get the supplier company to pass on information about the small company's services. Informant 2 points out that they are thus dependent on having a good dialogue with the operator companies. Moreover, it is advantageous for the small company if the operator's supplier is a good partner.

When new contracts are introduced, companies might have to propose certain changes. As informant 5 experienced when his business encountered a change in capacity. A separate product emerged, i.e., a separate delivery segment described as project management or integrated deliveries. The informant further describes that this was not something the company had before, and people have been hired for these positions due to the introduction of integrated contracts. In addition, the change means that it "forces" the internal project lines into closer cooperation. Informant 4, on the other hand, experiences that the main change is that the company works more across the various disciplines. Now they work more integrated with the operating company, rig, and drilling contractors. There has also been more use of real-time centers since integrated contracts were introduced. Furthermore, the informant describes that a larger part of their compensation is related to the total well-delivery and not individual services. Moreover, one change informant 3 has experienced after integrated contracts were introduced is communication.

You get involved if someone should have challenges, but you must also be eager to offer services. Also, you must be proactive and contact both parties to obtain information. Sitting and waiting for a phone call from them I think does not work over time.

- Informant 3

As we then understand, this is a branch where the businesses have to be assertive and stand out in order to receive work. Informant 1 further describes that they have tried to differentiate and find opportunities for the small oil service company. Everything the company does and makes,

is an attempt to reach the end customer with its stamp and logo. However, there is often a supplier company between the small company and the end customer, making it difficult. Furthermore, the informant describes that they are fighting to remove the risk. The small oil service company has worked hard and has had unpleasant conversations with the big oil companies as they do not want to take the risk of others' downtime. The informant describes that the company itself can carry downtime but does not want to carry the other company's risk. Informant 2 experiences that their small oil service company needs to have a good relationship and dialogue with the supplier who is actually the owner of the integrated contract. The informant further described that they often delivered directly and had direct contracts with the operator in the past. The small oil service company delivered their technology and was not responsible, and they were then not dependent on another supplier to front their case.

The operator describes that one can not wait for the change but that one must control the changes. The operating company has succeeded in what they wanted to achieve with an integrated contract. However, informant 8 further mentions that some aspects did not work as they had planned, and therefore had to make some adjustments. In addition, the informant describes that they want to achieve one-team thinking and greater integration where they work with the contractor to achieve the best for the well. Which he underlines they have succeeded after using integrated contracts. Furthermore, informant 8 describes some challenges and frictions associated with the change, as the companies had different cultures and had some difficulty adapting to each other. Thus, the informant believes that the cultural aspect is the biggest challenge when something changes.

Others may disagree here, but as I see it, it requires a lot of structure and focus if integrated contracts are to be used in the future with such high demands on profitability, the total cost of ownership and on the value chain. - Informant 7

Informant 7 also describes that if this type of contract continues to be used, it will be a huge responsibility on the contractor, and the operating company will be dependent on them delivering. Thus, the informant points out that she is unsure whether it is appropriate because they become a checkpoint as the operating company is ultimately responsible for society.

Furthermore, for an integrated contract to function as planned out for the companies, the informants mention various changes necessary for their company. Informant 5 points out that the changes in coordinating value creation between the companies must continue. In addition, he describes that one must refine the processes that can lead to a joint payment for jointly achieved goals. Informant 3 further points out that proactivity and communication are essential and the most necessary changes for an integrated contract to work.

I believe that one should allow critical subcontractors to participate in operations planning and contract meetings. - Informant 1

Informant 1, therefore, believes that including interpretative parties into the designing of the contract could end up being a change and a solution that will benefit the outcome of the project. A more significant degree of detailed control is required from the operator, according to informant 7, if integrated contracts are to work better. That is, using the same types of contracts, but more integrated on a partnership form. According to him, everything has so far been governed by an integrated contract. This has controlled the relationship between the operator and the supplier. Another approach is now being tested, as they are focusing on the actual relationship between them and trying to build stronger relations between the parties. Informant 7 describes that the intention behind this is to strengthen the bonds between colleagues working the contract and build an environment where everyone wants each other well.

How the main actors should collaborate in a project is the most important for informant 4. The informant also points out that the contract should not describe everything in detail. The contract should be principled and explain the main factors applicable in the various phases of planning, implementation, and follow-up. In addition, informant 4 highlights that a contract structure must be prepared so that it reflects a total delivery, as well as the allocated risks should be adjusted. As of now, the operator wants the large service company to take more risk in an integrated contract. The reason is that the large oil service companies have the ability to take more risk. Nevertheless, they are not particularly interested in taking such risks, unless there is an equilibrium in the gain, according to informant 4.

Competitive Situation

When we suggested whether integrated contracts may affect the competitive situation in the market, the operators confirmed. Informant 7 elaborates that the contracts remove a part of the competition. Since, if a project is executed to perfection, they, as a client, can decide to expand the contract, which can damage the competitive perspective in the branch. Informant 8, on the other hand, believes that the use of integrated contracts neither increases nor decreases competition but toughens it. Since the contracts now contain a large workload and are only given to one contractor, there is more at stake. However, the operators do take some precautions. To maintain the competition over time and keep all contractors in the industry, the operator has set some limits to how much or how little amount of work is given to each contractor.

Contractors and subcontractors both agree that there is an increase in competition and a price war, but only concerning the contractors. The subcontractors do not have the ability to provide such integrated services, and the process is, therefore, a little different for them. The group of subcontractors is also very specialized since many of them supply niche products that only they can deliver. Their view of competition is therefore not the same as for the contractors. Moreover, they try to differentiate themselves and bring something that is only theirs to the table. If the contractor needs that exact product, they will have to come to that specific subcontractor. As Informant 3 puts it nicely:

We do not have so many competitors, so the price we give is the price it will be. We're in an extremely fortunate situation that way. We only have one niche product in our portfolio. Some competitors have tried to imitate our product but have not succeeded yet. So, we are extremely lucky. - Informant 3

Market Access

When we ask the three small oil service companies about how they experience market access through larger integrated contracts, informant 3 describes it as complex. They receive more information than before, for example, where one of the significant operators hands out updated well drilling plans. He further states that even though they receive more information, the market access has not increased. The informant also points out that communication and networks are essential for them to be included in future integrated contracts. Informant 1 experiences that

market access has been limited from 2015 to 2019. In 2020, they experienced an increased scope of those contracts. The informant describes that they are asked to give several oil service companies prices. This was due to more extended contracts with the oil companies, which has been a positive trend lately. Informant 2, on the other hand, describes that they have a type of collaboration with all the major oil companies. Thus, they will have the opportunity to gain access to work and more contracts. However, it depends on whether the company is interested in having a dialogue with them on the various contracts. There is not always a high focus on the service they provide. For that reason, several of the subcontractors have found themselves forced to find work elsewhere. Informant 3 mention that they are already well established in the US and are on a rising curve in both Asia and Africa.

The informants were further asked whether one can look at integrated contracts as a tool to include SMEs in the Norwegian oil and gas industry. The vast majority of informants agreed that was not correct, and that integrated contracts almost had the opposite effect (see Table 3). Informant 6 from one of the large service companies highlights that the SMEs must possess an excellent product or technology to be included in such a contract. Therefore, it is presented that it is more difficult for SMEs to gain access to projects now than it was before. Informant 2 points out that the large service companies' interest is to promote their own services. Therefore, it can be an advantage for the SMEs to have a good relationship with the large oil service companies, in order to better facilitate inclusion.

However, informant 8 also mentions that if the SMEs are to be included, it must be adapted from the start when designing the contract. In addition, mechanisms should be specifically aimed at technology development that the small companies often specialize in. Informant 8 elaborates that this is one aspect that had to be adjusted in the contract type in retrospect as it was experienced that the contractors avoided introducing new technology. Furthermore, the informant underlines that they first wanted to have more control and dictate that this new technology should be introduced. Adjustments were made on who would take the risk if this right of management was exercised. The reason for this was that the contractor should have the advantage of thinking together with the operating company, using new technology and at the same time that the suppliers should not bear a great risk by incorporating new technology. Further, informant 8 mentions that here, as an operating company, they had to change the contract after entering into to adapt to the need.

It is not a strategy to include, it is more that you must have a strategy for how to include the rest of the suppliers when creating integrated contracts. - Informant 8

Moreover, informant 7 has a different view on the claim and believes that one can look at integrated contracts as a tool to include SMEs. The informant describes that it concerns which requirements the operator demands from the SMEs and what requirements consist of the operating country. She further elaborates that it is more widely seen as a local measurement and exemplifies that if her company operates in the North of Norway, they sometimes have to include a certain percentage of local business.

Informant 3 says that the large service companies in Norway ask the small companies for a price on their services, even though they are not originally planning to include them. Yet, they ask the SMEs in order to have their services available if they at one point are needed. If the contract between the large service companies and the operator consists of payment per meter they carry, and the contractor does not get anything extra paid by including the SMEs, they could end up losing money. Informant 3 also points out that it is a long way for small niche companies like them to enter into integrated contracts. In addition, informant 3 describes that other integrated contracts have additions, then it is easier for small niche companies to enter. Thus, it is a little different to how the contracts are structured.

Do you think that one can look at integrated contracts as a tool to include SMEs in the industry, possibly how?	
Informant 1 Subcontractor	<i>All experience so far indicates that it counteracts it.</i>
Informant 2 Subcontractor	<i>No, I don't quite think it is a tool. I would say that it is almost a bit of an opposite effect in a way.</i>
Informant 3 Subcontractor	<i>That has probably not been the case until now, no.</i>
Informant 4 Contractor	<i>No, I do not think so.</i>

Informant 5 Contractor	<i>Both yes and no, it is very difficult to answer, balanced. I do not believe that there is a tool in an integrated contract to achieve a greater degree of inclusion.</i>
Informant 6 Contractor	<i>You have to sell a very good product then.</i>
Informant 7 Operator	<i>Yes, you can.</i>
Informant 8 Operator	<i>Then you have to make sure to have it with you from the very beginning when designing the contract. Also, one may have put in place mechanisms specifically aimed at technology development.</i>

Table 3 - Integrated contract as a tool to include SMEs.

Moreover, both the informants from the small companies and the large service companies describe that it is more difficult for SMEs to gain access to assignments related to larger offshore assignments.

Yes, I think we are being blocked by the big oil service companies, because they want to do what is best for them. We will not have the opportunity to compete on an equal line then. - Informant 1

Yes, I think so. - Informant 2

Yes, you are not qualified to submit a bid because they want to have one supplier for everything, and that is their wish. We can not match the large service companies that have everything from drilling to mud, so we are only involved in a bit of the drilling. - Informant 3

Yes, I see it. That makes it a little more challenging for them. - Informant 4

Informant 5 thinks that the diversity within SMEs will disappear over time. Furthermore, the informant highlights that it is more challenging to compete in that area. There are several

players and people that SMEs must deal with. The contractor also describes that those who manage it and survive will be able to experience less competitiveness on their product margins.

The operator company does not see any challenges in including SMEs in an integrated contract. Informant 7 describes that in theory, for them as an operating company, there is no problem. The companies that are best at delivering services should be included in the contract. Informant 8 describes an example where they experienced a challenge with SMEs, which concerned a niche supplier that provided vibration damping in connection with drilling on a complex subsoil. The niche company provided tools to dampen vibrations. The operating company requested that the niche supplier should be included in the service and included in the price if there is a need for this equipment. Informant 8 experienced that none of the contractors included this in the price. The reason for this is that the service was not listed as a necessity for the project. Therefore, the niche company had to look for other options and ended up sending much of its equipment to the United States, as there was a market that saw the value of it and was willing to pay for the service.

Furthermore, informant 8 believes that there are two sides to the above challenge. The first is whether the operating company had an overview of whether there was a need for this equipment when they reported it as a necessity. The other challenge was whether the contractor saw the equipment as beneficial, and that it would provide value for them. Had the contractor seen value in using the equipment, they could probably have included the niche supplier and provided the service. Informant 8 states that the positive aspect about this is that their contractor will be much more careful about what they incorporate in the contract. The provider will not include a service from others unless it provides added value. Thus, the operator gets assured that there is an actual value creation in the innovation before it is used.

The contractors mention that the advantage of being SMEs in such a contact composition is that what they deliver may disappear in the large total delivery. This means that the products and services provided by SMEs are perhaps less competitive. It also means that their product and service margins are often higher than what the large service companies can achieve as a total supplier. Moreover, informants 4 and 5 mention some challenges that SMEs face, such as what access they have to the market. They also highlight that SMEs do not have access to the market and the end customer in the first place in an integrated contract. They thus become a

gap between the operator and the large service companies as a customer base. So instead of being a customer, there are three different customers, and therefore, it becomes more complicated for SMEs.

However, informant 5 believes that there may be a higher risk of including SMEs in the contract. If any error occurs, the other services they provide will also be affected. Therefore, the large service company depends on robust, reliable, and good subcontractors to avoid errors that affect the total supplier. In addition, informant 5 mentions that SMEs often do not have the financial backbone to carry the same burden as a large oil service company. Informant 4, on the other hand, debates back and forth whether there is a higher risk of including SMEs in an integrated contract. The informant describes that they deliver what they can deliver themselves. Suppose there are SMEs with good and sensible solutions, at the same time as they have a reasonable price for the service. In that case, there is not necessarily a greater risk for the large service company to include the subcontractor. This is up to the contractor, and it is within their control. Informant 6 explains that it is more difficult for SMEs to be included in integrated contracts unless they have an excellent product that the larger companies see as value for them. The informant also mentions the risk of including SMEs in the contract as they are under them. So, if downtime occurs, it will compromise the large service company.

The small oil service companies mention that if the contract means that the large service companies are not paid to include the small oil service companies, there may be a risk for the large oil service companies. They may get lower margins, and it is not one hundred percent sure that they get an upside. Informants 1 and 3 highlights that they do not see any significant risk for the end-user, i.e., the operator, because they have transferred the risk to the large oil service companies, which is also their goal with the integrated contracts. In addition, informant 3 mentions that the risk to the operator is that it does not necessarily get the best products. This can lead to a higher price for them, as they pay for the rigs and production.

Informant 2 does not want there to be a risk for the large service companies to include them. If they want to use the small company's service, the small risk they take by using the service will give them such a large saving, for example, in terms of time or environment. Today, the environmental aspect is important, that it resets itself or goes into balance. Informant 2 highlights that their small company can help with this. In addition, the informant describes that

several integrated contracts have performance bonuses. This means that if they finish a project ahead of time or manage to complete more wells, they will receive a bonus. If the large oil service companies take a small risk by using the SMEs service, it will often save them ten days on a well, which can result in a potential bonus.

5.3 New Digital Platforms in Integrated Contracts

Digitalization is described as a breath of fresh air amongst the informants. Having the ability to simplify processes like data sharing and analyzing amongst others has done wonders for the industry. The ongoing pandemic Covid-19 has also seemed to make an impact on these businesses' everyday work. An increasing amount of operations has now undergone digitalization, whereas most of them are streamlined and made more manageable than before. For example, all meeting activity has been transferred to digital platforms such as Microsoft Teams and Skype. More importantly, new digital platforms concerning the operations offshore have become digital as well. One of the contractors introduces a platform called Open Earth Community that is used for digital well solutions that seamlessly connect underground data to frequency data.

It is maybe the least talked about and often the most crucial aspect. When one exchange's data and information concerning digital well planning, one needs data ranging from underground data to the detailed planning tool and calculations. In a way, it is the most important digital tool and most important platform. -Informant 5

Furthermore, the informants mention everything from Microsoft, Google, various cloud-based platforms, artificial intelligence, and robots. It becomes clear that digital tools are a vital part of making the machinery function.

The concept of sharing data seems to be of different importance for the various groups. Both operators and contractors put great emphasis on exchanging data with each other. Again, Informant 5 mentions that they have solutions to work closely with subcontractors and the end customer. Informant 4 could tell us that the operator owns all the data related to well constructions, and therefore the contractor has to share it with them. However, they only share the necessary data with the subcontractors. Moreover, the last group, subcontractors, have different views on digital platforms and data sharing within the group. Informant 3, for

example, appears to come from a business that uses the bare minimum of data platforms and only mentions Microsoft Excel and Microsoft PowerPoint. Whereas informant 1 and 2 go on and on about how they use various platforms in their daily work.

We have many interfaces now, and I do not remember the name of all these platforms. We use many sensors in our equipment that controls heat, temperature, sand particles, dust, etc. We take care of some ourselves, but what is relevant to the customer, we move over to them. We also communicate on e-invoices and sign documents electronically, which helps to streamline some processes. When we move on to sharing more critical data, professionally sensitive data, and such, it has in a way been a demanding job. But once you have it in place, you can see that the collaboration blooms because everyone greatly appreciates having the data available. - Informant 1

One of the operators also mentions a crucial aspect of why sharing data with everyone is essential. Their business has tried to post some of the operational data on various platforms. This was done as a measurement and an industry initiative to encourage innovation across the entire industry. However, informant 7 could disclaim that it has not given many results, and there has been little collaboration and unified ways of thinking afterward.

Moreover, new digital platforms play an essential role, according to informant 5. They greatly enable streamlining of the workflow, which today is time-consuming and resource intensive. The informant further mentions that using these platforms can allocate the resources early in the process by detailed planning and optimization of the processes. With such management of the resources, they have the opportunity to draw in more resources, at the same time as they spend less time on each resource. A better plan is achieved by doing this, which gives a better end product at a lower cost. Informant 5 points out that this has added value for both parties.

Informant 6 emphasizes how important new digital platforms are for the company. There has been a significant transformation in the last year, and travel has been cut down due to Covid 19. The last year has shown that the digital platforms have replaced many processes and that communication, meetings, sharing of presentations and similar activities takes place on Microsoft Teams. Informant 6 mentions that the company had ideas that digital platforms could

replace processes but did not take advantage of the opportunities the digital platforms provide. After a year with Covid 19, digital platforms have proven to give very good results.

According to informant 3, Microsoft Teams has replaced the travel business in the last year and negotiations and meetings are taking place over Teams. This digital platform has proven to be very effective. Informant 3 claims that his experience with the platform also has its limitations. Informant 3 has known that being introduced to new people is not as personal as before. In addition, informant 3 experiences that it can be more challenging to get in touch with the right people to build relationships.

New digital platforms play an important role for the operating company in that these, among other things, open up new opportunities and streamlining. Informant 7 highlights that the operating company has established a marketplace, which is a digital platform where the company sets requirements and automates interactions with several customers simultaneously. The platform has been developed to place tenders or purchase services through a standard contract and a standard relationship. This is an untraditional way to buy services. Furthermore, informant 7 mentions that the company has simplified processes by establishing an app with an overview of qualified suppliers and submitting tenders. Informant 7 points out that this means simplification and improvement for the operating company that results in reduced costs.

As far back as 2013, according to informant 1, the company has taken care of all data belonging to all operations they have carried out. At the same time, the company has been proactive in facilitating the automation of processes and setting up a remote control. Informant 1 believes that this has given them a competitive advantage.

According to informant 2, digital platforms have made everyday life much easier and have been necessary during the pandemic. Previously the company used Skype for Business, and this platform has now been replaced with Microsoft Teams which informant 2 describes as a fantastic tool. The informant emphasizes how easy it is to have interactive conversations, share presentations and share a screen on Microsoft Teams, and mentions that the platform has streamlined the company. Informant 2 also points out that Microsoft Teams do not provide the same room for social interactions as, for example, the good conversations at the coffee station.

Informant 2 also describes that sharing data using SharePoint has made everyday life much easier and more efficient.

Informant 4 points out that the new digital platforms play an essential role in the company's operations. Digital platforms have changed the way the company works. The informant emphasizes that the platforms have made it possible to streamline personnel resources and have reduced costs for the company. Furthermore, informant 4 points out that the digital platforms help the company make the right decisions by giving the company the opportunity to extract real-time data.

To summarize, it turns out that integrated contracts have led to better relations between the contractors and the operators. However, it seems as though that has been at the expense of the inclusion of SMEs in such large offshore projects. SMEs now experience that it is more time-consuming and challenging to gain access to such large contracts. Most informants also point out that it is the form of the contracts that are damaging for the smaller businesses, as there is a very overwhelming amount of work covered in these contracts, which only some Norwegian oil companies can undertake such a responsibility. If SMEs were then given the opportunity to contribute, it would entail a high risk that could also be difficult for them to take on. Furthermore, new digital platforms have led to more efficient work processes that have previously been time-consuming for companies. The platforms have provided the ability to share data in real-time more efficiently and accurately. Which then has led to better cooperation between the companies in large projects and the opportunity to make the right choices. However, new digital platforms have also led to weakened relations between the companies as it has been more challenging to get in touch with each other and new partners. Moreover, digital platforms such as the digital marketplace are created to allow both buyer and provider to be seen and heard. In this way, we can see that there are both positive and negative aspects with integrated contracts, which we will look at in more detail in the next chapter.

6. Discussion of the Findings

The purpose of this study was to assess whether integrated contracts contribute to inclusion of small and medium-sized oil service enterprises. The findings presented in Chapter 5 are discussed toward relevant literature and previous research in this chapter. Using the chosen theoretical perspectives, we will interpret and analyze the results from the in-depth interviews and draw useful insights in order to be able to answer the research questions intended for this study.

Integrated contracts include several different companies that work together to achieve a goal and complete a product. All parties are dependent on each other, and to succeed, all parties must find effective and smart solutions to succeed in the mission. Because if one of the links should have problems, it will hurt the rest of the participants. These are companies that were previously only competitors and wanted the best for themselves. By using integrated contracts, one has erased the line that separates the competitors to a certain degree. Something that Bengtsson and Kock (2000) would explain with the phenomenon of cooptation, where companies must both compete and collaborate in order to be left with the best result for themselves and the others.

6.1 Does the Use of Integrated Contracts Affect the Opportunities and Market Development for SMEs in Large Offshore Projects in the Oil and Gas Industry?

The study shows that the operator's desire to introduce integrated contracts has been successful. The operator companies wanted to achieve one-team thinking and greater integration to work with the contractor to achieve the best for the project. There have been some challenges and frictions related to integrated contracts as the companies had different cultures and had difficulty adapting to each other. Trust is also an essential factor in a team and a partnership, as well as for an integrated contract to work. Therefore, it is vital to build trust between the parties because the stronger the companies' trust has managed to create between themselves, the stronger is the culture (Fukuyama, 1995). To build collaboration on trust there are two preconditions that must be present. Firstly, a strong community culture has to be developed within the organization. Second, the employees should have acquired virtues such as loyalty, honesty and trustworthiness (Fukuyama, 1995; Zucker, 1986). In order to achieve one-team

thinking between all the players, it is important that the above prerequisites are in place. These are critical success factors for an integrated contract to work optimally.

According to Chen (2021) can SMEs be described as independent oil and gas companies as the findings from the study show that SMEs often focus on only one segment in the oil industry. Integrated contracts have been used more widely in recent years by operating companies and large service companies. Moreover, the results also show that it is essential for SMEs to have a good relationship and dialogue with the contractor, who is managing the integrated contract. The large oil service companies and operators point out that they are experiencing closer cooperation amongst themselves, which in fact can lead to the SMEs not being included as much as before. The SMEs describe that proactivity and contact with both parties are essential for an integrated contract to work and get the information out. It is therefore vital for the SMEs to be agile and adapt to the environment, and the giants who have paved the way before them. Thus, SMEs should do something about their activities as there have been changes in contract types, and integrated contracts have been used more (Serrador & Pinto, 2005). However, SMEs find it challenging to adapt to the technical environment and feel as though they are not free to readjust as wished. The study shows that SMEs must take other actors into account because it turns out that they are dependent on resources that, for example, the large service companies have control over. According to Jacobsen and Thorsvik (2013), companies must pay more attention to the external actors they depend on. That is, small companies are affected by interdependence.

As the subcontractors' mention, they are unsure whether their information makes it to the target customer or not. Therefore, they simply have to trust that the contractor forwards positive aspects and information concerning their products and services to the operator. Suppose, however, the contractor decides to withhold vital information. In that case, this can lead to the project owner being unaware of the effort put in by the SMEs and damaging the SMEs future cooperation's, and at the same time, the contractors promote themselves in an immoral way. Moreover, this can also lead to information imbalance between the actors. Further, to handle this, a certain level of communication must be achieved. When there is a balance between the need for information and the mutual dissemination of necessary information, the administrative costs are the lowest. Therefore, investment in communication should be up to this level (Müller & Turner, 2005). The SMEs have experienced through integrated contracts where they do not

directly interact with the operator that the contractor takes credit for their work and change the stamp and logo. A previous study involving several industries, conducted by Alvarez and Barney (2001), points to a similar situation where they researched alliances between large companies and SMEs. Their results highlighted that as many as 80% of SMEs felt exploited by the larger companies. To avoid such situations, the SMEs mention that they have tried to differentiate and find opportunities. They have now implemented measures such as increased communication between them and the end customer to ensure that they themselves receive credit for the work they have performed. By doing this, they aim to accelerate future partnerships by demonstrating the value of who they are and what they are capable of performing.

The results from the interviews show that SMEs often have other needs when designing contracts. SMEs often have a limited ability to manage financial risk and may thus be dependent on sharing the risk with the contractors (Nilsen, 2008). The SMEs experience that the large service companies want to share the risk with them. The problem is that SMEs often do not have a large enough financial backbone to take on as much risk as the large service companies (Quale & Ruud, 2006). The SMEs interviewed are fighting to avoid the risk the large service companies are trying to pass on to them, as they fear worst-case scenarios where they could, for example, go bankrupt if the work should result in a lot of downtime or other problems arise. Due to the SMEs capital is often not sufficient enough to be able to carry the weight of errors caused by other companies. Moreover, according to several of our informants they agree that the operators and contractors should include multiple parties in order to create coordination of value creation. In such a type of contract, critical subcontractors should be allowed to participate in operational planning and contract meetings to increase value creation between the companies (Müller & Turner, 2005). SMEs could be an essential source of value creation for larger companies, as they can be flexible and readjust according to the needs in the contract (Barabel et al., 2014).

Collaboration

After integrated contracts were introduced, the operating company and the contractors underlines that work operations have become more advanced yet also more simplified on certain aspects. They experience a greater degree of agreement on common goals and better cooperation at the management level. Abrahamsen (2013) emphasizes that collaboration across

the supply chain can work both ways. Some parties experience abuse of power and conflict, while others are fortunate enough to focus on mutual development. The latter seems to be the case for the operators and contractors, while the subcontractors struggle to make their relationship function in a positive manner. Since, results for the interviews show that one of the subcontractors' experiences is that the relations and collaborations are in a forced form and not optimal in integrated contracts. In specific associations, they feel like "an evil" forced to participate, while in others, the contractor sees the value in their work, and the relationships are strong. Even if only some of the collaborations are not functioning, this can be very destructive for the company trying to sell its services. Therefore, the contractors should consider the above as SMEs have several positive benefits such as groundbreaking ideas or solutions for further development and collaboration (Quale & Ruud, 2006).

On the other hand, one of the subcontractors is experiencing positive aspects of the cooperation that has arisen after integrated contracts were applied. Companies have different motives and goals for entering into a network (Hinterhuber & Hirsch, 1998). The findings show that some of the SMEs have been given the opportunity to build a better network with several large oil companies that enable their company name to be known among large oil service companies. In addition, they have settled down with the fact that integrated contracts hamper them in specific processes while they can positively affect other operations. Further, SMEs sell their goods in a market with strong competition and are little affected by institutional environments. As a result of this, they must be concerned with how they can solve their task to minimize costs and increase profitability (Jacobsen & Thorsvik, 2013). The results from the interviews show that SMEs should be perceived as attractive companies to collaborate with within projects as they often offer unique resources and capabilities after specializing in one segment (Wernerfelt, 1984). Therefore, they should voice their expertise to make themselves attractive for various projects. This can give them opportunities to be included in large integrated contracts according to Barney (1991).

Once the SMEs are included, results show that it varies slightly how the large oil service companies negotiate terms and conditions with SMEs in an integrated contract. Most often, separate terms are negotiated with SMEs. This is because the small oil service companies can not enter into a back-to-back contract as easily as medium-sized companies with significant finances. This is also an aspect that could make it more difficult for the contractor to include

SMEs when they have different opinions on how the terms of the contracts should be. This can result in misunderstandings and mistrust between the parties (Müller & Turner, 2005). Therefore, the large service companies generally want to renegotiate the contract terms they have with their customer to the subcontractors. Furthermore, the results from the interviews show that the large oil service companies are aware that the small oil service companies which only provide a single service for part of a total project must have adjustments in their contract. The result also shows that if the service is complex and directly impacts progress and cost, it is more important for the large service companies that the other companies included take on the same type of risk as them. According to the literature, the problem is that small suppliers usually have a lack of financing and do not have the opportunity to take on high risk. To avoid this risk, the contractor has been strict in renegotiating contracts and demands to come up with prices before the contract is designed. This is because the large oil service companies and operators sometimes see SMEs as essential to include in projects. In contrast, it is much easier for operators to take on a higher risk, as the financial aspect is completely different for them. It is also important that they remember that it is ultimately their project, and that the majority of the risk should therefore perhaps not be shifted downwards (Quale & Ruud, 2006).

However, some SMEs do enter into a back-to-back contract with some of the major service companies on specific contracts that relate to specific oil fields. Based on the results from the interviews, it is highlighted that the contractor wishes to enter into a back-to-back contract with the subcontractor because the total delivery may have fines and deadlines related to deviations. If the contractor does not have a back-to-back contract with its subcontractors, the contractor is left with the risk and danger of receiving fines if they fail to meet the deadline, even if it is the subcontractor's fault. Therefore, they want to enter into such contracts so that the party who makes a mistake is the one who must also make up for it with the end customer (Offshore, 2013).

Moreover, if the contractor is a large oil service company, the SMEs have little influence if the terms have already been negotiated in the contract with the operator. If the SMEs are to be included in such a contract, they must follow the same terms and conditions as the supplier has with the operator. Based on the results, it is often better for SMEs to have direct contact with the operator, as they get the opportunity to negotiate their terms. This is a great advantage for them and allows the small companies to explain what they think and feel about the contract

terms. Nevertheless, it is exactly direct contracts that the operators had hoped to avoid by using integrated contracts. So even though it is more convenient for the SMEs, it brings with it a larger workload for operators who now get higher administrative costs and a higher workload related to managing the contracts (Bartstra et al., 1993). The operators themselves state that in some cases they agree to have direct contracts with some of the SMEs as they consider their services as necessary for certain projects.

The literature shows that it can be beneficial to include SMEs, as several large service companies seek to achieve distinctive competitive advantages in innovation and renewal of key skills (Barabel et al., 2014). SMEs are often newer companies that are experts in their field and have modern tools to carry out the task. So, although there will be an additional charge to include them, it could end up paying off if they can cut down on the time spent and maybe even deliver prior agreement and be left with a bonus. In addition, SMEs usually operate more cost-effectively (Olje- og energidepartementet, 2010). For large service companies, this can help to create an even more significant competitive advantage. A report presented by Olje- og energidepartementet (1999) states that efficiency and value creation increased by integrating services. Radical improvements and major savings from operating in this way were also reported. Additionally, it is also positive for the SMEs as they get a network and good relations with large oil service companies. According to Wheelen and Hunger (2012), relations and networks are a large part of everyday operations. Therefore, strategic cooperation is an essential factor for future collaborations and the opportunity to innovate and develop further.

Researching the topic of integrated contracts, it becomes pretty apparent that the usage of integrated contracts has resulted in splitting up the industry where you have operators and contractors on one side and subcontractors on the other. From the results of the interviews, it emerges that integrated contracts have developed to consist of a total delivery with incentives and are used by several companies today. One contractor is responsible for delivering most or all of the service and equipment (Osmundsen, 2009). In an integrated contract, there is not always a need for several supplier companies. Therefore, it may be easier for the contractor to implement incentives, as the contractors can offer more services and therefore have much more control over the projects' progress (Osmundsen et al., 2010). The results show that SMEs have experienced that their services and products have not been strongly included in an integrated contract. However, from the operators' point of view there have been certain changes in the

contracts that should be sufficient enough to include SMEs more. SMEs also get the opportunity to show their product and services and are more included in contract negotiations now. However, the subcontractors are split on whether they see this as a good enough measure to form a more united industry. Some are quite satisfied with the changes in the contracts, others feel as though it does not imply them.

From the study, it appears that there are different opinions even within the operating company on how difficult it is for SMEs to be included in integrated contracts. One of the operators claims that integrated contracts can be used as a tool to include SMEs. At the same time, the study shows that this perception cannot generalize and if SMEs are to be included, this should be done early in the contract design. The result shows that one of the reasons for not including SMEs is because the large service companies are best suited to win and execute such contracts. The contracts are so extensive that only the largest oil service companies in Norway have the opportunity to take responsibility for such an integrated contract. This is because large, serious actors in the market have built up a strong position of power over time. Larger companies also have a better opportunity to convene experts for guidance and advice. This means that the larger companies can be more successful in negotiating contracts. SMEs are in a situation where they are dependent on being included, which results from SMEs having to use a lot of their total resources (Barabel et al., 2014). Integrated contracts can therefore be a disadvantage as it can lead to reduced competition, because few companies have the ability to deliver such a large scope (Osmundsen et al., 2010).

Findings show that better interaction is experienced between contractors and the operator. The contact can now go through two parties instead of including several parties in the contract negotiations. According to literature, communication is a valuable part of project performance, as it can make or break a project. However, the parties should avoid challenges such as asymmetric information; that the operator knows less about the, for example, the drilling operation itself and more about the reservoir than the contractor. If this is the situation, the relationship between the companies can be weakened. Increased sharing of information concerning the project between the parties is essential and provides updated information to both parties about what is happening. This creates a better collaboration between the operator and the service companies, leading to project success (Müller & Turner, 2005). On the other hand, this may go beyond SMEs as they may not have the opportunity to access new projects

due to the closer collaboration between the operator and the contractor. Which could lead to SMEs being forgotten if they do not have the significant technology needed in the project. Based on the interviews, the results show that SMEs become third parties in such an integrated contract. This can lead to them losing their voice and not being given the opportunity to interact with the operator directly, but only through the contractor. This also reduces SMEs the opportunity to be included in negotiations regarding the contracts, which may impose an excessive risk related to the service an SMEs provides to the contract.

Market Development

As stated, using contracts that integrate the projects will result in a large part of the competition that existed in the traditional individual contracts to disappear. However, that mainly applies to the SMEs. Contractors who can take on such large projects are still in fierce competition. SMEs that do not have the opportunity to provide such comprehensive services have neither the opportunity to bid nor win such contracts. Moreover, these are companies that do not strive for the opportunity to be able to offer such services. Several of the SMEs in the industry are niche companies that specialize in an area where they may even be the best in the market. Their wish is to continue to focus on just that specific service or product. When the norm in the industry was discrete contracts, they were given that possibility. If the operator needed their assistance in a project, they were included directly from the operator. Now that contractors have the last word in operating the contract, they want to complete most of the work themselves, making it difficult for SMEs to develop and strengthen their position in the market (Osmundsen et al., 2010).

As stated, our results show that there is an increase in communication, and information is flowing easier than before. According to Müller and Turner (2005), this is a vital aspect, as communication and collaboration are a success factor for high performance in projects. However, various informants disagree on whether increased communication has resulted in greater market access. This can be justified because some subcontractors still have their own agreements directly with the operator, including their services. For that reason, one can not look at integrated contracts as a measure to include SMEs, rather the opposite, as all the informants imply. As nicely put of one of the operators, the subcontractors need to possess a great product or a service to be included in the contract. As we then can understand, it is evident

that subcontractors carefully take time to differentiate their product, which Wernfelt (1984) describes as an explanation for a business's competitive advantage and performance.

Furthermore, it is in the interest of the entire industry to develop the market on a general basis. Introducing new technology and being able to adapt to a changing environment is accordingly essential. Nevertheless, that is what contractors are eliminating when not welcoming subcontractors in the contracts. Operators present their wishes and how the end product should be but give much of the responsibility to the contractors when it comes to execution. So even though there are subcontractors who could perform specific processes with more modern technology and newer equipment, they opt out of this as it becomes more expensive for the contractors than just doing it themselves. Nonetheless, this was discovered in hindsight, and according to the informant, a change was made to more naturally include businesses that offer new technology by the operators sharing the risk with the SMEs. However, our results have shown that the contracts have not been arranged well enough for SMEs. In fact, it is the contractors who are responsible for the bill if the subcontractor is unable to deliver the goods or services by agreement. Therefore, the contractor could end up losing money if they include SMEs. Trust will then play a significant role if these parties are to develop into a team. If the parties can trust each other and build a strong community culture, developing loyalty and committing the outcome could be of very high value (Gardiner, 2005).

The barriers of entering in large integrated projects are, therefore, high for SMEs. However, as we can see in the Ernst and Young report, once they are in, they are very lucrative. The report from 2019 shows that SMEs have finally reversed the negative trend in declining profit margins as well as improved 5.9% on the EBITDA margin (Ernst & Young, 2020). Moreover, all companies that are or will be included in an integrated contract should find a solution that leads all companies to maximize their goals, which will further lead to a positive-sum game. All companies benefit positively from participating in the project. However, at zero-sum, only one of the parties succeeds. All zero-sum situations will be harmful and challenging to achieve the goals the parties want. Therefore, goals should be harmonized so that all parties benefit from them. Zero-sum can arise in the contract design of an integrated contract. The party who is not included in the contract does not achieve a positive sum, while the other who manages to advance its position and enters the contract achieves a positive sum. In the event of a positive-

sum, the companies achieve an excellent incentive structure in integrated contracts. They are given the opportunity to take control of situations that occur in the contract.

In order to carry out a project in a satisfactory way, it is essential to reward the right processes. According to Osmundsen et al. (2010), contracts should reward efficient operations for attracting the most productive companies. The operators have had to study and change the format to bring out the best in those who perform the contracts. Therefore, bonuses are planned where the contractor and subcontractor have performed extra well and can deliver beyond the agreement. The compensation format itself has been changed so that if one is going to drill, one no longer gets paid for every hour you drill but for every meter. In this way, they boost efficiency and create a win-win situation for all parties, instead of awarding procrastinators who want to get paid more by working slowly.

Incentive contracting has incentives that meet the interests of both parties. All incentives given must be able to have some freedom. For example, if the contract consists of a fixed price, it does not yet have incentives to reduce, only incentives to increase, as it has to pay the price set regardless (Gardiner, 2005). With a fixed-price contract, the contractor only has incentives to do it as economically as possible, with the lowest quality because they do not get more or less regardless. Moreover, in an integrated contract, room for maneuver is needed, which often lies in the incentives. Therefore, the incentives should open up room for maneuver that makes it better for both parties. Further, in an integrated contract there are combinations of different contracts, and this helps to manage it. Here, various incentives are part of the coupling of complex contracts that are rational for creating an integrated contract because integrated contracts must utilize the room for maneuver. Furthermore, if integrated contracts have no connection to financial benefits to including multiple parties, it will not be interesting for the actors as there will only be an internalization of the transaction costs. This means that they save the transactions because there will be cheaper transactions within the group.

Furthermore, it turns out that the informants also support this way of thinking, as they believe that transaction costs will be reduced by using integrated contracts. However, there may be a requirement within the integrated contracts where there is flexibility, and that someone can get more or less even after they have joined the contract. In this situation, it is essential to try to avoid a zero-sum game, i.e., where companies compete for the same good. Companies might

also have to compete in the zero-sum game. In situations like this, one of the parties must accept a loss. This means, for example, that if someone gets a more significant part of a project which they should not have received, they can deliberately slow down the delivery. As a result, it can be at the expense of the other companies in an integrated contract, and lead to additional costs. In this situation the other parties have to accept this. Moreover, looking at Burgess and Burgess (1997) game theory expression, including SMEs and successfully concluding a project of which both parties are satisfied with the outcome will represent a positive-sum. In fact, some of the subcontractors express such great dissatisfaction with the process of selection for the projects that they feel forced to find work in international markets instead. In the long run, this can be detrimental to the Norwegian oil and gas industry, as modern technology and cutting-edge expertise from SMEs disappear from the market. Which could result in outdated methods, increased cost and equipment that can weaken efficiency and flexibility.

6.2 Can Digital Platforms Contribute to Better Collaboration and Relationships?

Digitalization has shown itself to be a vital part of the industry. Both concerning communication and with sharing data real-time and analyzing. The findings show that platforms and various tools are today used to simplify processes that used to be much more complex. The Covid-19 pandemic has had a major impact on how everyday work has developed. Now one can, to a much greater extent, keep in touch with just a few keystrokes where one before used to travel. Processes such as meetings, presentation sharing, and communication have now been made digital, where Microsoft Teams and Skype have been significant contributors to streamlining day-to-day operation. According to the theory, new development of data technology will lead to new forms of interaction that result in increased efficiency and value (KonKraft, 2018). In 2020, KPMG conducted a survey of various obstacles to the digitization of business processes, which was based on their own survey conducted in 2014. This survey included 11 different industry groups, of which Industry, Energy and Recovery was one of them. The results of the survey indicate that the industry is aware of the importance that digitalization brings. Proceeds are highlighted such as increased data quality and a better basis for decision-making as a result of an increased degree of digitization. It also turns out that the use of new technology is considered an important driver for streamlining work processes, increased value creation and competitiveness (KPMG, 2020). However, our results show that this has nevertheless also had its downside, as one is not introduced to new people and does not get to know each other in the same way as before.

Therefore, SMEs have experienced more challenges to get in touch with the right people and build relationships with them.

Moreover, one has also seen a development in the actual work tasks and the offshore operations, which have become even more digital. It is now easier to carry out faster and more informed decision-making. This is very advantageous in an industry as such, considering there are often colleagues spread over large areas. Previously, it was expressed that data sharing was weakened and that buyers and suppliers had problems establishing contact and cooperation, something that digitalization aims to change (Achilles, 2021). An example of such a platform is the OpenEarth Community, where the entire industry can collaborate to create more innovation and streamline the adaptation of new technology. Here they can operate together as global problem solvers without being competitors (OpenEarth Community, 2019).

Furthermore, a digital marketplace has also been created as an application, an entirely new way of buying and selling goods. With such a platform, one can create opportunities for more companies and customers to interact (Srnicsek, 2017). Perspective report from Næringslivet describes that providers and customers are connected directly through digital platforms. This makes the digital platforms attractive, and at the same time, they have helped reduce transaction costs. Developing digital platforms can make it easier for start-ups, as well as provide opportunities for new business models in established companies. Increased productivity in the companies and in the business, community contributes to higher customer and user satisfaction to the platforms. With achieving this, one can, among other things, simplify access to information and the dialogue between seller and buyer. This creates new business opportunities and increases access to services and products (Næringslivets Hovedorganisasjon, 2018, s. 133). This is a very clever way to both market the companies and discover new interested customer groups, contributing to an increase in connection and better relationships. Also, it is a massive opportunity for SMEs that otherwise would struggle to promote their technology. Wæraas et al. (2011) describe reputation management as a very important part of an organization's strategy, in order to influence and establish itself in a market. By focusing on getting the word out to the customers that you hold a service that can bring value to them, can ultimately result in a higher willingness to pay for the item or service. In addition, if the service lives up to expectations, it can result in a growing customer group with loyal customers who would keep the business in mind next time around.

Still, digitalization seems to be of varying importance to the different groups. The subcontractors' usage is very different and ranges from only using Microsoft Office to more complex platforms in field sharing. It is admittedly a demanding process to get such platforms in place, but the collaboration can unfold itself as soon as they are incorporated, as everyone appreciates having the data available. Nevertheless, some, especially subcontractors, want to keep their data to themselves, considering they have designs that constitute great value for the company. It is emphasized that some of the data related to the projects are owned by the operators and must therefore be shared. The results from the interviews show that attempts have also been made for sharing operational data as an industry initiative on various platforms to encourage innovation throughout the industry. However, it turns out that this has not yielded the desired results, such as better collaboration and a shared mindset across the entire industry.

The study shows that new digital platforms play an imperative role for all oil companies. Digital development can create more efficient work processes, replace manual work, provide better analysis, and contribute to better decisions and creating greater competitiveness for the companies (Arbeids- og sosialdepartementet, 2018). Results from the interviews show that digital platforms have created opportunities to allocate resources early through detailed planning and optimization of the processes. The companies can then be more resource-efficient, which contributes to a better plan, creates a better end product at a lower price, and generates added value for both parties.

According to Konkraft (2018), the oil and gas industry has not been able to realize efficiency and productivity effects through digitization, data sharing, and interaction between actors and data flow. This emerges from the interviews that the companies knew that the new digital platforms could replace processes, nevertheless, they did not take advantage of the opportunities the new digital platforms could provide them. During the pandemic, companies have been forced to use new digital platforms to a greater extent, which shows that digitalization has led to valid results for the companies.

7. Conclusion

The purpose of the study is to examine whether integrated contracts contribute to more inclusion of small and medium-sized oil enterprises in the Norwegian oil and gas industry. To highlight the problem in the best possible way, eight in-depth interviews were conducted with representatives from six different oil companies. Furthermore, we studied the structure of integrated contracts. As it is one of the most used forms of contracts in the Norwegian oil and gas industry, to investigate whether this limits SMEs opportunities in the market. This chapter aims to summarize findings and to conclude on the basis of literature and obtained data.

In the examination of the main problem, the following sub-questions are addressed:

1. Does the use of integrated contracts affect the opportunities and market development for SMEs in large offshore projects in the oil and gas industry?
2. Can digital platforms contribute to better collaboration and relationships?

The findings from the study show that in an integrated contract, it will be more difficult for SMEs to be included as large oil service companies have the capacity to deliver a total delivery and therefore have very large market power. It turns out that these companies also are responsible for the selection process for who is included in the projects unless the operating company has defined something else with clauses in the contract. The reason for any clauses could be that SMEs have their own agreements with the operating company, as the operating company has discovered the usefulness of their cutting-edge expertise in the technology they deliver. This is something that weakens integrated contracts, as in this way it turns out that it is not designed and facilitated to pick up the necessary manpower that can help lift the end result to new heights. However, it is important for SMEs to build a strategic network to open up opportunities for inclusion in integrated contracts. Still, our results show that this is more the exception than the rule, as such clauses and direct individual contracts are rare.

According to the results, it turns out that SMEs are included if they have pioneering cutting-edge expertise in a technology that is necessary and important to include in the process to increase margins and streamline production. The competence must also be outside the contractor's portfolio or that they lack specific equipment that the SME possesses in order for them to be included. Furthermore, there may be complications between the major oil service companies and SMEs when entering into a contract because there may be disagreement of

terms and conditions. It is in the interest of the large oil service companies to continue a back-to-back contract, which means that SMEs get the same conditions as the supplier has with the operator. The small oil service companies prefer not to enter into a back-to-back contract as the results show that they have a little financial backbone and thus do not have the opportunity to take on the same amount of risk. They want only to carry the risk associated with their delivery.

The study highlights that it requires more time and effort for SMEs to be included in an integrated contract, as they now have to go through two stages where they have previously gone directly to the operator. In addition, it turns out that there is a lack of trust between SMEs and the contractor when it comes to disseminating information to the operator. This has led to a weakened collaboration where SMEs do not feel seen and heard and thus have taken their production to international markets instead. According to the Ernst and Young report (2020), this has led to SMEs positively developing margins as they become more valued in the international market. The problem lies not only with the large oil service companies. Part of the reason why this has arisen in the Norwegian oil and gas industry can be attributed to the operating companies. The general response from the operators is that they do not understand how complicated and demanding it is for SMEs to gain access to projects in such large integrated contracts. Based on this, we can conclude with a lack of research of the market and that the communication flow between the parties has not been sufficient. This may be since the operating company seems gullible, where they think that all companies have an equal chance of being included. The study shows that both the large oil service companies and SMEs have a common perception that integrated contracts are not a tool for including SMEs.

The study underlines that the development of the market is thus not entirely optimal but still has great potential. Including companies with cutting-edge expertise in modern technology encourages innovation and the development of new technology. This can intensify the competitive situation within the Norwegian market, which in the long run will contribute to a competitive advantage in the international market in the oil and gas industry. However, as of this point, we see that SMEs need support to compete for these lucrative contracts as they now have a lack of visibility to the major oil service companies and operators.

New digital platforms and increased digitization are believed to be a tool for contributing to increased interaction and development of relationships across a relatively closed industry. The general response around new digital platforms has been positive, as the companies highlight more advantages than disadvantages of using the tools. The Covid-19 pandemic has brought with it numerous digital solutions that have had a positive impression on the companies. Digital platforms have resulted in a better workflow by sharing real-time data in operations, which in turn has created a greater collaboration between the companies across the project. Furthermore, increased digitization has created a virtual marketplace that makes it easier for companies and potential customers to get in touch. In such a marketplace, SMEs can have the opportunity to market themselves and create new relationships. Nevertheless, the results show that SMEs do not make sufficient use of this opportunity, as some of the informants say that they only use elementary digital tools such as Microsoft Office. Using the Digital Marketplace will therefore be a valuable measure to create better relationships, collaboration with companies and in the long run will be able to include them in large integrated contracts.

Moreover, digital platforms make it easier and more efficient to collaborate across companies. The opportunity of increased interaction, data sharing, and closer follow-up has played an extensive role for companies and projects. Companies that were previously direct competitors have now had to work collectively on common goals towards completing a total delivery. Digital platforms have been a contributor to developing a one-team mentality that will help create value for all companies. Even if one gets increased interaction through digital platforms, the result points to some hurdles. One of the challenges is related to the loss of personal relationships. Communication now takes place on digital platforms such as Microsoft Teams instead of physical interaction. This also contributes to the fact that it is difficult to get in touch with new companies and customers. What will then happen to the Norwegian oil and gas industry when new generations enter? Acquaintances and networks are some of the most essential factors for being a strongly established company that is included in an integrated contract. The results from the interviews show that if the relationship between the companies is not sufficient enough, it will be difficult to trust each other, which in turn can compromise the production.

All in all, it can be underlined that there are significant variations within integrated contracts whether users appreciate the format or not. Based on our results, it seems that operators and

suppliers are mostly satisfied with how the contracts have developed. On the other hand, there is somewhat more dissatisfaction to be traced among SMEs, as today's format contributes to challenges with including SMEs, as previously discussed. At the same time, great pressure is being put on contractors who do not get much security, either in the form of financial support or other forms of including more companies. Thus, it will not be easy to satisfy all parties in an integrated contract. Nevertheless, we note that digitalization can help open up new avenues into an integrated contract for SMEs, as communication and awareness have intensified in recent years. Therefore, it is a change to be pursued in the future, where we will hopefully see better cooperation across the entire supply chain.

7.1 Limitations of the Study

As mentioned earlier, this is a study that researches a relatively new topic. Where, in our opinion, little research has been done in the past. This made the start-up of the task somewhat challenging. We started with a perception that more research had been done on integrated contracts and that the market had come further than it was. Furthermore, more statistics and registry information about transaction elements could have been supplemented in the thesis. If we had gained access to, for example, supplier accounts for oil companies and looked at how many customers they have for a project. Then we think that our findings would have been shown differently. Suppose we had obtained accounting data from oil companies that showed fewer market actors directly involved in the contract management of a similar oil field now than 20 years ago, as the number of market transactions decreases in favor of internal transactions. If we had had access to the contract data of all these oil companies, we could expect to have fewer contract actors. Moreover, with limited time and resources, it was necessary to relate to the actors we interviewed, which gives a limited selection. The generalization of the answers is not optimal as the number of actors is limited. With more time, deeper insights could have been provided through more in-depth research.

7.2 Further Research

The possibilities for further research can largely be based on the limitations of the thesis. It is advantageous to carry out the study with a longer time perspective and a larger demographic area. This is to give the study greater breadth and a better basis for generalization. It could also be interesting to carry out the same study in parallel in an international market, for comparison.

It is assumed that digital platforms in the Norwegian oil and gas industry are a relatively new research area. We experience that there is little research on digital platforms in this industry. This could be that different approaches are still being tested, and the phenomenon is at an early stage. Thus, it is possible to study several areas and aspects further.

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9. Appendix

9.1 Interview Guides

Interview Guide

Operator

- How long have you been working in this industry?
- What position/area of responsibility do you have?

Research Problems:

1. Does the use of integrated contracts affect the opportunities and market development for SMEs in large offshore projects in the oil and gas industry?
2. Can digital platforms contribute to better collaboration and relationships?

General Questions:

1. What do integrated contracts mean to you?
2. What are the biggest challenges when using integrated contracts?
3. What are the positive sides to using integrated contracts?
4. Are the contracts designed to best suit the largest companies?

Questions Related to Research Problem 1:

5. How have integrated contracts evolved?
6. How do integrated contracts affect the oil and gas industry on the Norwegian continental shelf?
7. What types of changes has the company experienced with the introduction of integrated contracts?
8. What types of changes are needed for an integrated contract to work?
9. What challenges does the company see in SMEs with such contracts?
 - Is there a higher risk of including small businesses in the contracts?
10. Can one look at integrated contracts as a tool to include SMEs in the industry, how?
11. How are the incentive schemes linked to the contract? Is there also a penalty if the contract is not maintained?

12. Is there any automaticity in who you collaborate with in a project? If a collaboration has gone very well in the past, do you pick up the thread with this company again, or do you put all assignments out to tender anyway?
13. What are the success criteria for achieving a good integrated contract?
14. Do these contracts create more competition in the market? How?
15. Do you think that integrated contracts strengthen companies, and how would you describe this?
16. Do integrated contracts lead to less complications and more streamlining of projects?

Questions Related to Research Problem 2:

17. What do you define as a new digital platform?
18. What type of digitalization and digital platforms does your company use?
19. Do you share data with the other companies in a contract? If you do not share data, why not?
20. Are there less complications now that you have used such digital tools?
21. What role do new digital platforms play for your company?
22. How has cooperation developed between operator and contractor after you have used integrated contracts in operations?

Interview Guide

Contractor

- How long have you been working in this industry?
- What position/area of responsibility do you have?

Research Problems:

1. Does the use of integrated contracts affect the opportunities and market development for SMEs in large offshore projects in the oil and gas industry?
2. Can digital platforms contribute to better collaboration and relationships?

General Questions:

1. What do integrated contracts mean to you?
2. What are the biggest challenges when using integrated contracts?
3. What are the positive sides to using integrated contracts?
4. Are the contracts designed to best suit the largest companies?

Questions Related to Research Problem 1:

5. How have integrated contracts evolved?
6. How do integrated contracts affect the oil and gas industry on the Norwegian shelf?
7. What types of changes has the company experienced with the introduction of integrated contracts?
8. What types of changes are needed for an integrated contract to work?
9. What challenges does the company see in SMEs with such contracts?
10. Is there a higher risk of including small businesses in the contracts?
11. Can one look at integrated contracts as a tool to include SMEs in the industry? How?
 - Do you think that integrated contracts make it more difficult for SMEs to gain access to assignments related to larger offshore assignments?
12. How are the incentive schemes linked to the contract? Is there also a penalty if the contract is not maintained?
13. When you enter into contracts with subcontractors, do you carry on the contract in its entirety as you entered into with the operator? Or do you negotiate your own terms with your suppliers?

14. Is there any automaticity in who you collaborate with in a project? If a collaboration has gone very well in the past, do you pick up the thread with this company again, or do you put all assignments out to tender processes anyway?
15. What are the success criteria for achieving good integrated contracts?
16. Do these contracts create more competition in the market? How?
17. Do you think that integrated contracts strengthen companies, and how would you describe this?
18. Do integrated contracts lead to less complications and more streamlining of projects?

Questions Related to Research Problem 2:

19. What do you define as a new digital platform?
20. What type of digitalization and digital platforms does your company use?
21. Do you share data with the other companies in a contract? If you do not share data, why not?
22. Are there less complications now that you have used such digital tools?
23. What role do new digital platforms play for your company?
24. How has cooperation developed between operator and contractor after you have used integrated contracts in operations?

Interview Guide

Subcontractor

- How long have you been working in this industry?
- What position/area of responsibility do you have?

Research Problems:

1. Does the use of integrated contracts affect the opportunities and market development for SMEs in large offshore projects in the oil and gas industry?
2. Can digital platforms contribute to better collaboration and relationships?

General Questions:

1. What do integrated contracts mean to you?
2. What are the biggest challenges when using integrated contracts?
3. What are the positive sides to using integrated contracts?
4. Are the contracts designed to best suit the largest companies?

Questions Related to Research Problem 1:

1. How have integrated contracts evolved?
2. How do integrated contracts affect your company?
3. Has the company had to change after the larger service / supplier companies started using integrated contracts? How?
4. What type of changes are needed for you if an integrated contract is to work?
5. Can one look at integrated contracts as a tool to include SMEs in the industry? How?
6. Do you think that integrated contracts make it more difficult for SMEs to gain access to assignments related to larger offshore assignments?
 - Do you think that there is a higher risk of including small companies in an integrated contract?
7. What form of contract do you use?
8. Do you negotiate your own terms with the supplier? How?
9. Is there any automaticity in who you collaborate with in a project? If a collaboration has gone very well in the past, do you pick up the thread with this company again, or do you put all assignments out to tender processes anyway?

10. How does your company experience market access through larger integrated contracts?
11. Do these contracts create more competition in the market? How?
12. Do you think that integrated contracts strengthen companies, and how would you describe this?
13. Do integrated contracts lead to less complications and more streamlining of projects?

Questions Related to Research Problem 2:

14. What do you want to define as new digital platforms?
15. What types of digitization and digital platforms do you use?
16. Do you share data with other companies in a contract? If you do not share data, why?
17. Are there less complications now that you have used such digital tools?
18. What role do new digital platforms play for your company?
19. How has the collaboration developed between the supplier and you as subcontractors (third parties) through the use of integrated contracts?