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Internationalization of Norwegian petroleum service companies to Brazil: the challenge of the “local content”

The case of Aker Solutions



Master's thesis in Globalization – Global Politics and Culture

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Chapter 1: Introduction

The modern times are defined by an overarching trend of *globalization* that has penetrated all spheres of human activity. Globalization has been described as a time-space compression; an accelerating interdependence; a shrinking world; a global integration and the intensification of interregional interconnectedness (Held and McGrew, 2007). In general, this process could be described as a “transformation in the spatial organization of social relations and transactions – assessed in terms of their extensity, intensity, velocity and impact – generating transcontinental or interregional flows and networks of activity, interaction, and the exercise of power” (Held et al., 1999: 16).

Some of the most drastic transformations have been occurring in the sphere of economy. Michael Bordo argues that a crucial characteristic of globalization is an “increasingly close international integration of markets for goods, services and factors of production, labor and capital” (Bordo, 2011: 1). One of the most visible implications of the economic globalization is a growing number of multilocal firms that have operations in more than one country. *Internationalization* of a firm refers to a process in which it “goes abroad” by gradually increasing international involvement and expanding R&D, production, selling, and other business activities into international markets (Johanson and Vahlne, 1977: 23; Hollensen, 2004: 30).

The process of internationalization opens up new opportunities for the firm. Access to new markets provides it with a chance to achieve a continuous business growth. At the same time, “going abroad” includes the need to deal with an environmental heterogeneity that is naturally embedded in different national contexts. This implies that the firm is bound to encounter many aspects which it has little control over. In this way, the firm faces new risks and challenges that could potentially hamper a success of its international operations.

The present thesis is focused on the issue of *the local content requirements* (further referred to as “LCRs”) that exist as a part of a regulatory framework which governs business activities within the hydrocarbon industry of many petroleum-rich states. The presence of such requirements in the host-country’s economic environment could be seen as a constraint that the internationalizing firms face in the process of making their strategic business decisions.

The age of easy oil is over (Gray, 2009). Internationally, the petroleum industry exists under a growing pressure to work with the reserves that are increasingly difficult to extract, both technically and politically. Under these circumstances, the prospects of growth for a company in

this industry are often linked to operating in challenging markets with strict regulations where the access to the resources is offered in exchange for contributions to the country's economy (Dicken, 2011: 225-226). The petroleum-holding states are seeking to use the resource riches in order to maximize the overall benefit for their economy and society, and the LCRs are utilized as one of the main instruments to achieve this goal. In this way, the LCRs could be seen as one of the key factors that determine a success or a failure of the firm that operates in the foreign market where these requirements exist. Therefore, taking this matter into account and developing a congruent approach to dealing with it has become a critical issue for the firm that is involved in international activities in certain countries.

With the aforementioned in mind, it becomes possible to narrow down the focus of this research to the investigation of the LCRs in Brazil's petroleum sector and the implications they have on the business activities of the Norwegian companies that operate in this market.

Internationalization is one of the main tendencies that define the Norwegian oil and gas industry nowadays. During the last 40 years, Norway has developed a high technology petroleum industry that is among the best in the world. However, Norwegian continental shelf is about to reach its maturity. Most likely, Norway reached its peak production in 2004, and during the next 20-30 years the production is expected to fall substantially (Fjose et al., 2010: 14). To maintain sales and employment, as well as to further develop the knowledge-based petroleum cluster in the country, the activity of the Norwegian petroleum sector companies, therefore, has to be turned towards foreign markets.

With this in mind, the internationalization of the Norwegian oil and gas industry has been a high priority during the last ten years. The goal has been to use the technology and expertise, which were developed on the Norwegian continental shelf, internationally and in this way to strengthen the long term basis for growth and development of the petroleum cluster in the country. International expansion has been faster and more successful than anyone had anticipated. Advanced products and systems created in Norway now successfully compete in the global market. More and more companies are achieving international success. Hundreds of Norwegian companies of all sizes have expanded from the domestic market into the global one. In the last ten years the industry has more than tripled its international turnover, and this growth continues (KonKraft-rapport, 2008).

Export of oil and gas to global customers is no longer the only source of revenue. Export of petroleum-related goods and services is also making major contributions. Norwegian companies are now market leaders in subsea and drilling equipment, floating production, and supply services (KonKraft-rapport, 2008).

Despite the financial instability of the last two years, Norwegian companies have strengthened their international market position. By comparing the domestic market for petroleum industry to the international one, it is possible to see that the international sales have been increasing sharply, with an annual growth rate since 2000 of 16% (compared to 10% in the domestic market). This means that the proportion of international revenues in the same period has risen from 29% to 42% (Rystad Energy's Report, 2012: 5). The international turnover for the Norwegian supply and service industry increased to NOK 152 billion in 2011, compared to NOK 95 billion in 2007, thereby directly contributing towards value creation in Norway (Rystad Energy's Report, 2012: 18; see Figures 1.1 and 1.2). Thus, the Norwegian continental shelf can continue to serve as a breeding ground for new technology and new operational solutions that could then be taken out into the world.

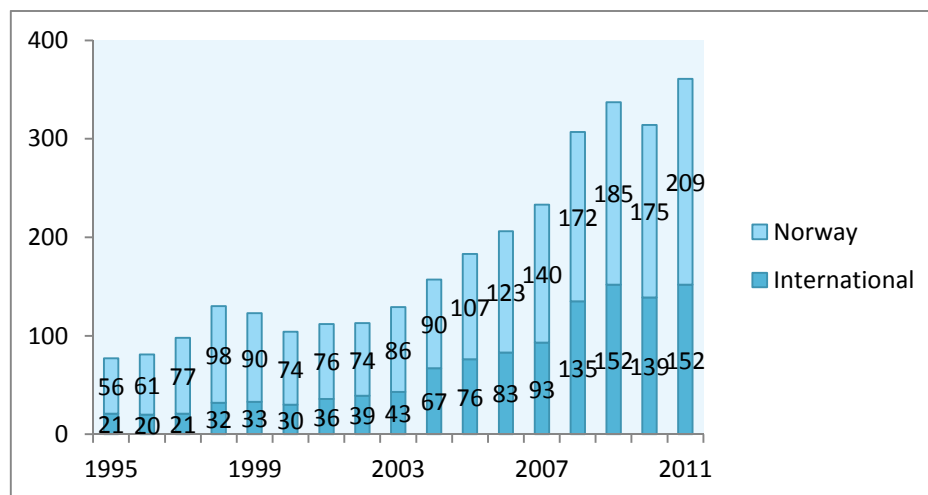


Figure 1.1. Total revenue (NOK billion) of the Norwegian petroleum service companies, Norway vs. International (Source: Rystad Energy's Report, 2012: 18).

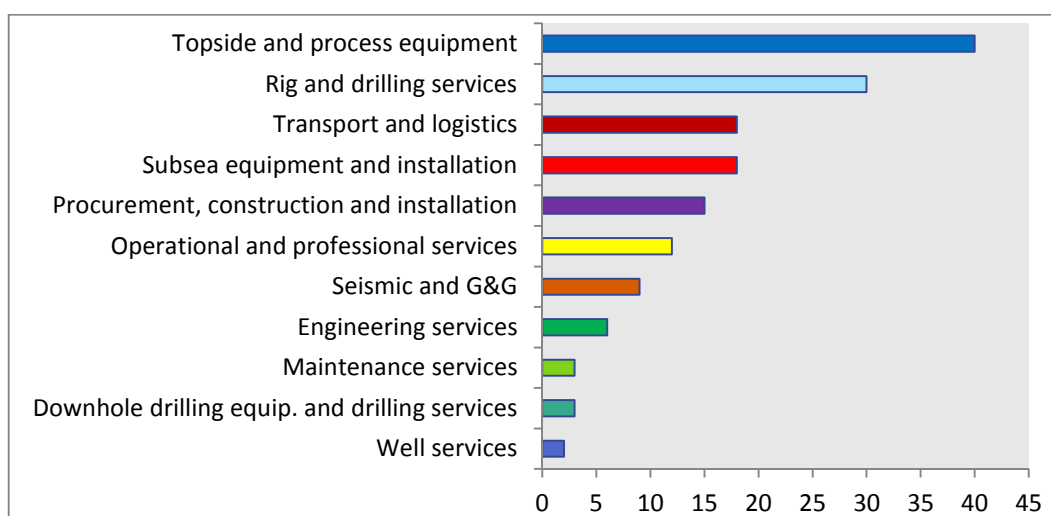


Figure 1.2. Total international turnover (NOK billion) in 2011 by segment (Source: Rystad Energy's Report, 2012: 23).

Brazil currently represents one of the key markets for the internationalization of the Norwegian petroleum industry. The hydrocarbon sector is one of major drivers of the Brazilian economy nowadays. Brazil has been an oil producer since the 1930s. An exploration of the offshore reserves, which currently account for the major part of the petroleum production in the country, started in 1977.

In 2006, vast “pre-salt” oil reserves, located off the coast of South-East Brazil, were discovered. The reserves received their name from the fact that the oil is found beneath approximately 2000 meters of salt, topped by 1000 meters of rock and 2000-3000 meters of water. The reservoirs span an area of approximately 149,000 square km in a region that extends about 800 km along the coast of Brazil, from the State of Espírito Santo to the State of Santa Catarina. The total size of the “pre-salt” reserves are estimated to range from 20 to 300 billion barrels making it one of the most significant oil discoveries in the past 20 years (Barroso and Macedo, 2010: 64; Oxford Analytica, 2010: 4; *see Figure 1.3*).

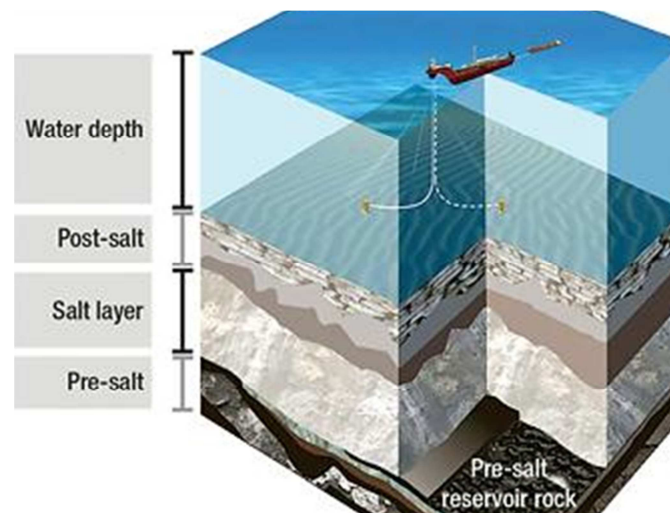


Figure 1.3. The schematic view of the “pre-salt” oil reserves in Brazil (Source: Formigli et al., 2010).

Due to the hard accessibility of the “pre-salt” reserves, the recovery of oil there is connected with significant technological difficulties. In this light, an enormous potential of this area together with Brazil’s lack of relevant competence and capabilities are the two major key drivers of the current escalation of the international interest in the Brazilian oil and gas market.

The Brazilian market offers exceptional opportunities for the Norwegian companies, which are well-qualified to provide relevant technological solutions and know-how. However, there is one major issue that presents a significant challenge for the foreign companies operating in Brazil – the requirements regarding the local content.

With the aforementioned in mind, the research objective of this thesis is to provide a better understanding of the challenges that Norwegian organizations face in connection with the

LCRs in the Brazilian petroleum sector, as well as of their strategies to cope with these challenges. This will be done by analyzing the experience of the Norwegian petroleum service companies that have operations in Brazil. The research is mainly focused on one large transnational company, *Aker Solutions*. However, in order to provide a contrasting perspective, a limited examination of experiences of a number of smaller Norwegian service companies and research entities, which operate in the petroleum sector, will also be provided.

Taking into account that the issue of the LCRs in the petroleum industry, as seen from the point of view of the foreign companies and not the resource-holding state, has been rather neglected in the academic research, the present thesis aims to contribute to filling the gap in the current literature on the topic.

1.1. The reasons behind choosing the topic for the thesis

In addition to the concerns regarding a growing interest in the issue of the LCRs in the petroleum sector both among the theorists and the practitioners, the choice of the topic for this thesis was dictated by my personal concerns and experience.

My interest in the matters surrounding the internationalization process of the Norwegian companies stem from the internship I conducted as a part of the degree *MSc in Globalization: Global Politics and Culture* in the autumn semester 2012. My task there was to produce a project report on the internationalization of the Norwegian petroleum service companies located in Mid-Norway to Brazil and the USA. More specifically, my research was focused on the cultural aspect of this process, namely what challenges do Norwegian companies meet in Brazil and the USA with regard to cultural differences and what strategies do they apply to cope with these challenges.

Initially, the plan for the present research was to continue working on the same topic. However, I have made a decision to shift my focus and investigate the issue of the LCRs instead. Moreover, the research was narrowed to one foreign market only – Brazil, which is a very interesting market due to its rapid growth, particularly in the petroleum sector.

1.2. Thesis outline

The present thesis is organized as follows. The introductory chapter presented the relevant background for the study, as well as the objectives and ambitions of this thesis. In addition, the reasoning behind the choice of the topic was given.

The second chapter will introduce the theoretical foundation of this research, namely the Global Production Network approach. Furthermore, the chapter will present the concept of the “local content” and outline the regulatory framework for this issue in Brazil. Finally, a number of possible challenges that Norwegian companies might face in connection with the Brazilian LCRs will be given. Concluding the chapter, the research questions of the present thesis will be formulated.

The purpose of the third chapter is to present the methodological basis employed in the research. Moreover, a short presentation of *Aker Solutions*, the company that is in the focus of the research, will be provided. The chapter will be concluded with the reflections on the challenges faced during the research process.

The fourth chapter will focus on the presentation and analysis of the findings obtained from the research on *Aker Solutions*. In addition, a short summary of findings from a number of smaller Norwegian service companies and research entities which operate in the petroleum sector will be provided.

The fifth, and the last chapter, contains the main conclusions of the study and recommendations for further research.

Chapter 2: Theoretical and Empirical Background of the Research and Literature Review

As mentioned in the introductory chapter, internationalizing firms are becoming increasingly exposed to the various policies of foreign countries they operate in. Without a doubt, this situation is defined by new challenges that could potentially increase the chance of a firm's failure in a foreign market. With this in mind, four major risks of being involved in an international business could be identified: a commercial risk, a currency (financial) risk, a cross-cultural risk, and a country (political) risk (Cavusgil et al., 2008: 11; *see Figure 2.1*). It is the latter one that incorporates the local content policies imposed by the host-states and that, therefore, is of relevance to the present research.



Figure 2.1. Risks in international business (Source: Cavusgil et al., 2008).

The *country (political) risk* is defined as an exposure to a potential loss or adverse effects on firm's operations and profitability caused by developments in a country's political and/or legal environments (Cavusgil et al., 2008: 160). In this context, various regulations, such as the LCRs, could present a significant challenge for the company's performance in the foreign market.

With this in mind, the main objective of the second chapter is to provide the foundation for the empirical part of the present thesis by formulating the understanding of the local content

issue with regard to the hydrocarbon sector in general and to the Brazilian petroleum industry in particular. Due to the current lack of the academic research on the topic in question, namely the implications that the LCRs in the petroleum sector of foreign states have on operations and strategies of the multilocal firms, this chapter could be virtually divided into two parts. The first one will introduce the theoretical framework chosen for this study, namely the Global Production Network approach. In addition, the concept of the local content in the petroleum industry will be presented. The second part will provide a general outlook on the regulatory framework for the local content issue in the Brazilian petroleum sector and outline a number of potential challenges that Norwegian companies might face in connection with the LCRs in Brazil. Finally, the research questions of the present thesis will be formulated.

2.1. Definition of the “local content”

Acknowledging that the local content is a focus concept in this thesis, it is necessary to give a proper definition to this term.

The classical interpretation was given by Grossman (1981). According to him, the local content is a condition that “requires a given percentage of domestic value added or domestic components be embodied in a specified final product” (Grossman, 1981). Based on this definition, the local content in the *broad* sense can be interpreted as *the composite value contributed to the host economy that is derived from the purchase of goods and services locally* (Warner, 2011: 8; Cavusgil et al., 2008: 199). It includes a direct impact on the development of the local workforce and the local supplier base. This development could be achieved through the employment and training of local people, as well as through the procurement of supplies and services in the domestic market (IPIECA, 2011: 1). Moreover, this understanding of the local content also includes spillover effects on other sectors of the economy and on the society as a whole (Accenture, 2008).

In the practice of the oil and gas industry, the LCRs constitute a part of contractual commitments that are embedded in concession contracts. According to these, firms have to procure a certain percentage of goods and services locally (Barroso and Macedo, 2010: 65). Therefore, the local content in a more *narrow* sense is defined as *a proportion of contract value spent on goods and services of domestic origin* (Warner, 2011: 42). In case of the Brazilian regulations for the oil and gas industry, the local content could be presented in a simplified way through the following formula:

$$\text{Local Content} = \frac{\text{Value of Goods and Services provided in Brazil}}{\text{Total Value of Goods and Services Used}}$$

This research looks at the local content from a perspective of a foreign firm that is forced to comply with the LCRs in a host-state. Taking this into account, the second, more narrow, definition is adopted as an overarching in the present thesis.

2.2. The Global Production Network perspective

The issue of the local content could be explored from a variety of angles. In the academic literature, different theoretical perspectives have been employed to discuss this problem. This thesis will adopt the Global Production Network (GPN) approach in order to form the basis of the present research. There are two major advantages of this framework. One of the most important relationships, that play a crucial role in the process of internationalization, is the relationship between a foreign firm and a resource-holding state. Therefore, the first advantage of the GPN approach stems from the fact that it allows the researcher to recognize that, in addition to firms, there is a wide range of *non-firm* actors which play a crucial role in the economic processes. Furthermore, an international petroleum industry is characterized by a complex net of interrelations between various actors involved in a sequence of stages of the oil and gas production circuit: from exploration through development, extraction, processing and distribution to consumption. Thus, the second advantage is connected to the ability of this perspective to expose the complex interdependencies existing between firm and non-firm actors which have deep implications on the overall outcome of a value-creating process in a production system.

The GPN approach is a framework of analysis that “attempts to explain how global industries are organized and governed, and how, in turn, those relationships affect the development and upgrading opportunities of the various regions and firms involved” (Coe et al., 2008: 267). This framework was initially developed by a number of researchers from Manchester and their collaborators (Henderson et al., 2002; Dicken and Henderson, 2003; Coe et al., 2004). The GPN approach is built upon the insights from the global commodity chain framework (see, for example, Gereffi and Korzeniewicz, 1994; Gereffi, 1995, 1999), as well as from the global value chain framework (Gereffi and Kaplinsky, 2001; Gereffi et al., 2005), with some ideas derived from the actor-network theory. Due to the fact that the GPN approach is a very extensive explanation framework that encompasses the complexity of the multi-actor and multi-scalar characteristics of transnational production systems, I have chosen to narrow my focus to a selected number of aspects that are relevant for the topic of the present thesis.

The GPN, as defined by the authors, is “the globally organized nexus of interconnected functions and operations by *firms* and *non-firm institutions* through which goods and services are

produced and distributed” (emphasis added, Henderson et al., 2002: 445). Therefore, this framework pays specific attention to the relations between firms and states and recognizes the significance of institutions (particularly government agencies) in their influence on the firm’s strategy in the particular locations in the production chain.

What are the reasons for such influence? Over the past decades, a central argument of the “hyper-globalists” has been that globalization has made states irrelevant, and the economic power has been shifted out of the control of nation-states to the market (Dicken, 2011: 170). However, Dicken argues that this notion is highly misleading: the state has always played, and is still playing, a fundamental role in the economic processes (Dicken, 2011: 171). The very nature of any firm’s activity is embedded in the concrete socio-political contexts. These contexts are essentially territorially specific. They are grounded in specific locations, primarily at the level of a nation state (Henderson et al., 2002: 446-447). The nation-state is often presented as a “container” of distinctive structures, practices, and institutions – in the case of the topic in question, it is possible to speak about the Brazilian regulatory system for the oil and gas industry, namely the local content regulations that have been adapted for the realities of the country (Agnew and Corbridge, 1995; Taylor, 1994; Dicken, 2011). Despite the forces of globalization, nation-states are still very much influencing and shaping the patterns of economic activity within their boundaries. Therefore, focal firms inevitably have to enter into relations with nation-states they operate in.

The GPN framework is built upon a number of conceptual categories that are useful in examining this complex interconnection between focal firms and resource-holding states. The first concept is a *territorial embeddedness*. As mentioned above, elements in the GPNs are grounded in specific locations. This has implications both for the focal firms and for the nation-states they locate in. Thus on one hand, the territorial embeddedness of focal firms creates the possibilities for value creation for the state and, therefore, is a crucial factor of regional economic growth and social development (Harrison, 1992; Amin and Thrift, 1994). On the other hand, focal firms also get affected by being embedded in a particular location which is characterized by specific economic, political and social dynamics. A variety of elements, such as state’s policies and legal frameworks, infrastructure, nature of education and labor systems, as well as business and cultural environment, influences focal firms’ strategies and actions in the host-states (Henderson et al., 2002: 451-452).

The significance that a particular state has on the focal firm’s strategy is intensified even more in the extractive industries in general and in the petroleum industry in particular. One of the most significant differences of the extractive production networks (compared to the other industries) has to do with the “landed” nature of assets in the extractive sector (Bridge, 2008:

412). The so-called “territoriality” of oil and gas represents the way in which these resources are a very location-specific commodity, especially compared with other ones, for example those of the manufacturing sector. Petroleum is embedded in the geographic structures of a particular nation-state and is considered the property of this state (Bridge, 2008: 413).

Another conceptual category that is useful for the analysis of the firm-state interrelations is *power*. This notion defines the issues of control and governance within global production networks (Coe et al., 2008: 275). The GPN approach acknowledges that the actors in the network (in our case, focal firms and resource-holding states) have different priorities and, thus, pursue their own interests (Henderson et al. 2002: 450). While the focal firm seeks an access to the market and the resources on advantageous terms, the state is focused on protecting domestic industry and influence focal firms in order to ensure economic development and societal welfare. These conditions make firms and states be continuously engaged in the intricate process of negotiation and bargaining, in which each actor is able to exercise a certain amount of power. Their relative power depends on the extent to which each of the actors possesses and controls the assets sought by the other party (Dicken, 2011: 226). The scarcer the asset the greater the bargaining power it conveys and vice versa (Coe et al., 2008: 276). Thus, on one hand, in the petroleum production network, the state holds the rights to access to the resource in focus (oil or gas). On the other hand, if a focal firm possesses unique technologies and know-how, it gains the upper hand in the negotiation process with the state.

In any case, the GPN approach acknowledges the centrality of state power in the petroleum industry (Bridge, 2008). In most jurisdictions, oil and gas are the nationalized assets. Moreover, states play an important role in the petroleum production circuit, as they are major operators in this industry: of the top 50 oil and gas companies by volume of production, over half are majority state owned (UNCTAD, 2007: 115). This naturally means that states are able to exert significant regulatory functions over the petroleum business activities that happen within their own boundaries.

In particular, states can determine the following factor which is of fundamental importance to the focal firms: the rules of operation with which foreign firms must comply when operating within a specific national territory (Dicken, 2011: 224). National governments have at their disposal a wide range of policies and regulatory tools for protecting domestic industries. Most of these policies are restrictive in nature and affect both imports and the foreign direct investment. These policies can be divided into two distinct categories:

1. *tariffs* (taxes levied on the value of imports that increase the price to the domestic consumer and make imported goods less competitive in price terms than otherwise they would be (Dicken, 2011: 182) and

2. *non-tariff barriers* (could be quantitative or technical, in comparison to the tariffs which are based on the value of imported products). One of the most widespread forms of non-tariff barriers is a direct quantitative restriction. It can take many forms, one of which is the LCRs (Vousden, 1990: 38) – the central issue in the present research.

The appearance of the local content topic in the academic literature is usually attributed to the work of Grossman (1981), in which he investigates the effect of the content protection on the resource reallocation. Following his paper, a number of subsequent studies have appeared throughout the years (see e.g., Davidson et al. 1985; Hollander 1987; Vousden 1987; Krishna and Itoh 1988; Vousden 1990; Richardson 1991, 1993; Lopez-de-Silanes et al. 1996; Lahiri and Ono 1998, 2003). These contributions usually incorporate the local content issue into the economic models that describe resource reallocations associated with performance standards in the context of various market structures such as perfect, monopolistic or oligopolistic competition, for example. For this reason, it has to be noted that a substantial part of the existing academic literature on the local content is of limited relevance for the present study.

1.3. Local content requirements in the petroleum industry

In terms of its application to the petroleum industry, the issue of the local content is considered to be a rather new concept in the academic literature. Therefore, a number of relevant works is currently limited. The overwhelming majority of studies on the local content in the petroleum industry are focused on the implications that this policy has on the economic growth and development of the resource-holding state. One example is the work of Kazzazi and Nouri (2012). In their paper, the authors developed a general conceptual model for local content development in petroleum industry that could be used by state governments to consider all aspects that affect local content development.

The oil and gas industry is a well-established industry in the global perspective. At the same time, different resource-holding states exist at different stages of industrial development and possess varying levels of experience with respect to this sector. The world is increasingly polarized between developed countries with superior technologies but saturated markets (like Norway) and developing countries with backward technologies but relatively unexplored markets (like Brazil). According to one research, developing countries will supply about 90% of new hydrocarbon production in the next 20 years (Wise and Shtylla, 2007). At the same time, these economies often lack the necessary competence and capabilities to develop their petroleum

resources without the help of the foreign firms that possess a relevant experience in the field. In this situation, the LCRs have been widely used as a government policy in developing countries to regulate foreign direct investment (Qui and Tao, 2001).

Two main reasons could be identified for a petroleum-rich developing country to introduce the LCRs into its regulatory framework. The first one has to do with the fact that local governments want to make oil and gas resources spawn the development of domestic petroleum industries and promote economic growth in the country. The governments of the resource-holding states usually have domestic agendas to employ these riches to the benefit of the country. In this sense, the LCRs could be a useful tool to create jobs for the local people, as well as to develop the skilled and competitive local supplier base. Moreover, keeping in mind that the accumulation of knowledge and innovation is in the heart of the development, the LCRs are employed to trigger the transfer of technological and management expertise from the foreign firms to their domestic counterparts.

The second reason for the LCRs in the petroleum industry is connected to the necessity to avoid the so-called “Dutch Disease”, a form of resource-induced de-industrialization. It got its name from the country of Holland which was an exemplar case in experiencing the situation when petroleum finds was a trigger of massive outside investment and currency exchange escalation. This led to the country’s economy becoming dependent on petroleum and, therefore, disrupted the other industrial sectors in the country, making them less competitive internationally (Barroso and Macedo, 2010: 65).

The last few years have seen the appearance of various works that concentrated on the concept and the economic implications of the local content policies in the petroleum industry in specific countries.

Heum (2008) produced a working paper that documents the experience of Norway in developing domestic industrial competence in connection with upstream oil and gas activities. He argues that Norway could serve as a role-model for other petroleum-holding states with regards to the use of the local content policies.

Klueh et al. (2007) looked into the promotion of the local content in the petroleum industries of West Africa and Central Asia. His work demonstrated that many resource-holding states had taken a proactive approach toward the local content development.

In their work, Mwakali and Byaruhanga (2012) describe the effects of the local content policy on Uganda and present a number of practices that should help to promote the local content there.

There is a growing literature on the implications of the local content policy in petroleum industry in Nigeria. Heum et al. (2003) has been assessing the local content policies in

connection with their ability to create an enabling environment for private sector development in the Nigerian upstream petroleum industry. Valaand et al. (2012) investigate the ways in which local content can be enhanced in the petroleum industry of a developing country like Nigeria. Bakare (2011) focused on the consequences of the local content policy in oil sector upon the capacity utilization in Nigerian manufacturing industry. His study confirms the effectiveness of local content policies in Nigeria. In contrast, Omenikolo and Amadi (2010) claimed the ineffectiveness of implementation of the Nigerian content policy and developed a framework that addresses the factors needed to ensure industrial growth.

The abovementioned studies show that to date the academic focus of the current research on the local content in petroleum industry has been on the implications that the local content policies have on the development of the domestic economy and social welfare of the resource-holding state.

However, in my opinion, it is equally important to explore the issue from the point of view of the foreign companies that enter the market with their own commercial interests at stake. To them, the LCRs present a potential risk and, therefore, have a direct impact on a range of core business functions, such as business development, procurement and operations (IPIECA, 2011: 3). Keeping in mind that certain problems experienced by the states themselves naturally trickle down to affect the foreign companies operating there, academic studies examining the local content challenge from the perspective of the states could present a limited amount of relevant insights into the issue in question of the present thesis. However, as to date, the academic literature has looked at the local content policies from the point of view of the focal firms. During the past few years, a number of guides for the companies prepared by a number of consulting organizations have been produced on how to do business in specific petroleum-holding states (see e.g. IPIECA, 2011; PASCHOALIN, 2010; KMPG, 2011). These guides have addressed the issue of the local content to various extents. However, the academic research has largely ignored the experience of the focal companies which operate in the petroleum-holding states in terms of complying with the LCRs there.

After presenting the issue of the local content in the petroleum industry with an overview of the relevant theoretical background, this chapter will further focus specifically on the LCRs in the Brazilian petroleum industry by providing the general outlook on the regulatory framework for this matter, as well as by outlining a number of potential challenges that Norwegian companies might face in connection with the LCRs in Brazil.

1.4. Local content requirements in the Brazilian petroleum industry

“Everything that can be done in Brazil, shall be done in Brazil.”

- Former Brazilian President Lula

Like many other petroleum-producing nations, Brazil is seeking to propel its economic development by enforcing the local content policy. According to PROMINP (the Brazilian Oil and Gas Mobilization Program), the main objective of the Brazilian local content policy is to “maximize goods and services national industry content, within competitive and sustainable basis, in the implementation of oil and gas projects in Brazil and abroad” (Scottish Enterprise, 2012: 35). The LCRs in Brazil are currently regulated by the Resolution ANP 36/07 issued by the Ministry of Mines and Energy in November 2007 (ANP, 2007).

There is a current lack of academic literature on the LCRs in the Brazilian petroleum industry with a relevance to the foreign-firm perspective. The major bulk of relevant information on this issue could be found in various guides for internationalizing companies that cover different aspects of doing business in Brazil (see e.g. PASCHOALIN, 2010; KMPG, 2011; International Business Brazil Report, 2013). Another source encompasses publications in the petroleum-theme magazines (see e.g. Barroso and Macedo, 2010). Finally, a number of works focus on the policy dynamics in the petroleum sphere in Brazil (see e.g. Landau, 2008; Rodriguez and Suslik, 2009; Guan, 2010).

With an understanding that there is currently a very limited number of academic works on the subject of this thesis, the task of elucidating the possible challenges that foreign firms could face in Brazil requires first of all an understanding of the general framework of the LCRs in this country.

Prompted by the boom of the oil industry around the world, Brazil started its petroleum activity in the 1930s. The first oil deposit was discovered in Lobato (Bahia) in 1939, while the first commercial oil pool – the Candeias Field, a part of Recôncavo Baiano Basin – was discovered in 1941. Up until 1997, *Petroleos Brasileiros S.A. (Petrobras)*, a state-owned company, had a legal monopoly in petroleum exploration and production. However, the government was increasingly recognizing the necessity to further develop the domestic petroleum industry and, therefore, to create an attractive setting for foreign investment. The result of such considerations was a Petroleum Law of 1997 (Law 9,478/97) that ended a 42-year monopoly of *Petrobras* and opened the industry for foreign participation.

Since that time, access to exploration and development of the Brazilian petroleum reserves has been granted through concession contracts. A *concession* is a defined license area

granted to a company for the exploration of oil and/or gas under specified terms and conditions and for a fixed period of time (Oil and Gas Field Dictionary Online). It has to be noted, however, that the “pre-salt” discovery prompted the Brazilian government to revise the existing regulatory model. Based on a change in the Petroleum Law made in 2010, the exploration, development, and production of oil and gas shall be carried out through concession agreements (pursuant to the regime established by the Petroleum Law) *or* through the production share regime that will apply to the “pre-salt” and other strategic areas (KMPG, 2011). Under the latter regime, successful bidders will enter into a production share contracts with *Petrobras*, which will act as the sole operator with a minimum 30% equity interest (Tysoe and Camargo, 2013). However, these changes will affect only the next bidding round for granting exploration and production rights in the pre-salt area that will be carried out in October 2013 (Chequer et al., 2013). Therefore, the general regulatory policy in the Brazilian petroleum sphere, which will be discussed in this thesis, will not consider these modifications.

The institutional framework that governs the Brazilian hydrocarbon industry is substantially elaborate. However, the key institution that represents a particular interest with respect to the local content regulatory policy is the *National Petroleum, Natural Gas and Biofuels Agency (Agencia Nacional do Petroleo – ANP)*. It is an entity that is responsible for the execution of the national policy for oil, gas and biofuels industries, as well as for the regulation of their activities. As a public organ with administrative autonomy, linked to the Ministry of Mines and Energy, ANP has to conduct the bidding rounds for granting exploration and production rights for the Brazilian petroleum reserves.

To date, there have been eleven rounds that resulted in the awarding of approximately 730 concessions of oil and gas exploration and production blocks, both onshore and offshore (Tysoe and Camargo, 2013). The first round, marked as Round 0, was in 1998. Up until 2008, the bidding rounds occurred every year. However, after the 10th round in December 2008, there has been a long four-year break. The main reason for this break was an ongoing debate in Brazil concerning the way in which the tax income from oil and gas should be distributed (International Business Brazil Report, 2013: 28). In February 2013, the Brazilian government released drafts of the bid document and the concession agreement for the long awaited 11th bidding round. The bids occurred in Rio de Janeiro on 14-15 May 2013.

The adopted model of competitive sealed bid auctions (Rodriguez and Suslik, 2009: 6) regards the local content commitment as one of the criteria applied in the evaluation of the bidder’s offers during the bidding procedure. Presenting their offers, bidders state a specific level of the local content, which is then turned into a number of points used to rank bidders’ offers along with a number of other parameters (Barroso and Macedo, 2010: 65).

Furthermore, companies or consortia awarded exploration block are required by contract to achieve certain level of the local content in equipment and services. The local content percentages could vary upon the winning bid. Moreover, the LCRs have evolved over time, so different bidding rounds contained different level of local content (*see Figure 2.2*).

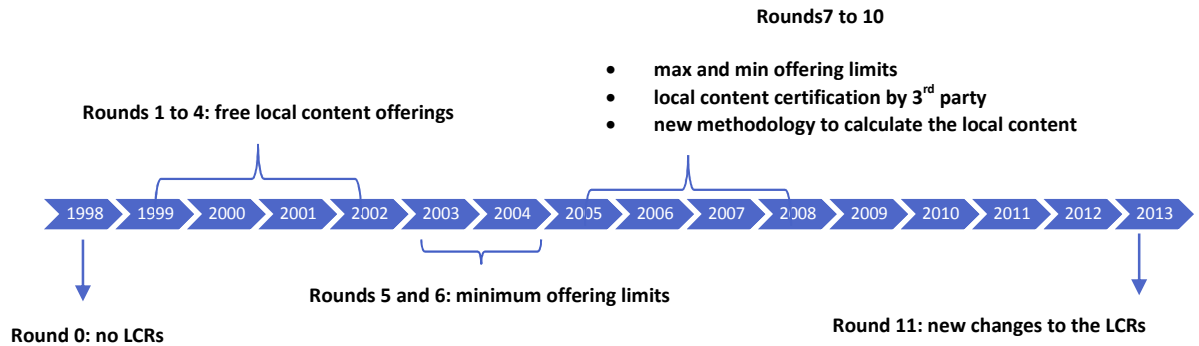


Figure 2.2. Changes in the local content regulations throughout the bidding rounds.

Consistently, any obligation that is imposed on the concessionaire will subsequently be passed down the production chain to the suppliers and sub-suppliers (Barroso and Macedo, 2010: 65; *see Figure 2.3*).

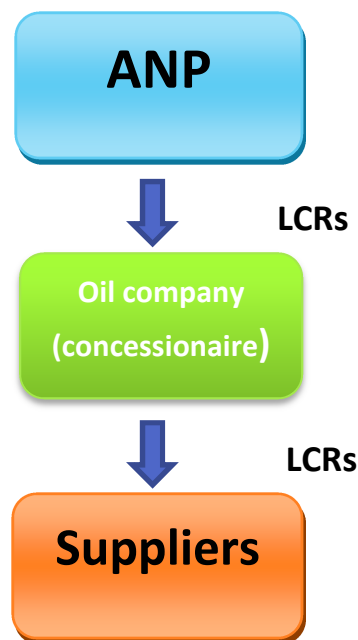


Figure 2.3. The LCRs trickle down the production chain.

In practice, keeping in mind that overall quota must be met, the concessionaries can require varying levels of local content from its suppliers depending on the type of products and services they provide. Normally, high-tech activities correspond with a lower local content percentage compared to low-tech activities. This is connected to the fact that Brazil is still

lacking a capacity for technology-intensive work in the offshore industry (Barroso and Macedo, 2010: 65). For some firms with unique products it could be possible to do business directly from abroad and surpass the LCRs, at least in the first stages of market entry. However, for the majority of the companies it is necessary to provide and comply with the LCRs (How to Do Business in Brazil, 2011).

From the 7th bidding round, a verification of the local content investments has been required. It has its legal base in the Resolution No. 36/07 from ANP (ANP, 2007). According to this document, the companies must certify the acquisition of goods and services in Brazil. The local content certification process is realized by a number of private firms which have been accredited by ANP to conduct local content audits (see Figure 2.4). The non-compliance with the local content level stated in the contract gives cause to a penalty established in the agreement.

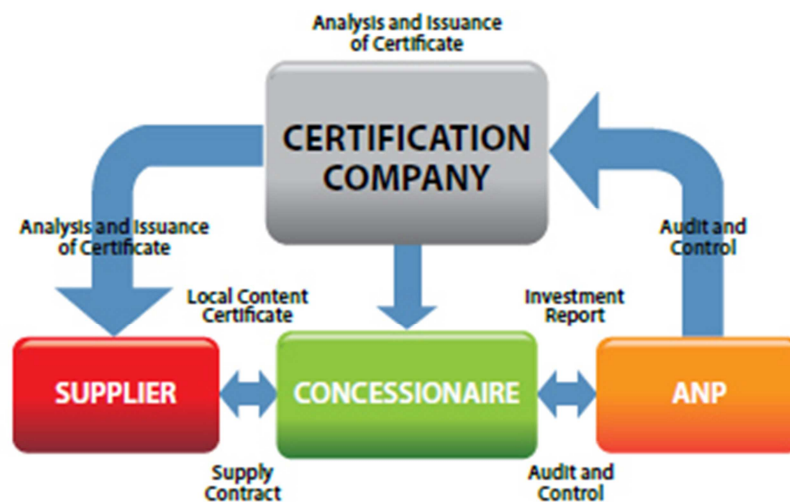


Figure 2.4. The local content certification process in the Brazilian petroleum industry (Source: ABS Consulting).

1.5. Brazilian local content requirements as a challenge for foreign companies

“Brazil is not for beginners!”

- Popular saying

The local content policies bring with them certain consequences, both for the resource-holding country itself and for the foreign firms that operate there. As stated earlier, the academic research has been focusing on the challenges the local content could present for the governments of the resource-rich states in their quest for pursuing the economic growth and development in their

countries. At the same time, the investigation of the consequences that the LCRs have on the foreign firms has, at large, been ignored.

Acknowledging the clear scarcity of relevant academic research on this issue, the following arguments will mostly be based on the information elucidated from various guides and reports, as well as internet articles that could shed a light on what the potential challenges regarding the LCRs that foreign firms could experience in Brazil. In addition, as mentioned earlier, some academic studies that examine the local content challenge from the state perspective could also present some relevant insights, as certain problems experienced by the states themselves naturally trickle down to affect the foreign companies operating within their boundaries. With this in mind, a number of possible local content challenges that foreign firms could meet in Brazil will be presented further on.

In spite of the vast opportunities in the petroleum business offered by Brazil, this country is a very complex and challenging market to operate in. The World Bank annually publishes its global “Doing Business” report where it ranks countries according to the ease with which business activities could be conducted there. In 2013, this report ranked Brazil as 130th out of 183 participating countries. The slight drop from 2010, when Brazil’s rank was 120, indicates an increasing difficulty of having business operations there (World Bank, 2010 and 2013). This makes Brazil one of the most difficult places in the world in terms of doing business. This is echoed by a growing chorus of voices that express concern about the policies that govern the Brazilian petroleum sector (Phillips, 2012).

Brazil is currently faced with a number of challenges which undermine the success of its local content development. Consequently, this situation has implications for the foreign companies that operate in the Brazilian market. Certain requirements connected to the local content may be fairly easy to meet, such as, for example, a reporting requirement, while others could bear significantly more substantial implications for the company’s strategy, as they affect investment decisions and project delivery (Warner, 2011: 38).

The overarching problem in Brazil is the current **lack of capacity and competence** in the Brazilian domestic petroleum service industry (International Business Brazil Report, 2013). According to Jon Vague, president and CEO of NLV International, “the current challenge in Brazil is that so much is being asked of local industry so fast in order to achieve very aggressive production targets...local industry may not be able to deliver so much on time and at worldwide competitive prices...local content is under pressure for that reason” (Addison, 2012). Obviously, this represents a big problem for the foreign companies struggling to comply with the LCRs. According to the OFS Capital report, most of the foreign companies are dissatisfied with the

existing policies and the measurement criteria for local content in Brazil and see it as an additional burden (Manechy and Row, 2012: 1).

This problem is closely tied with another one – the **lack of competitiveness** of the local petroleum service industry. The World Economic Forum recently published a report on global competitiveness where the countries were classified according to three stages of development: factor driven, efficiency driven, and innovation driven. Brazil is making some significant progress in many components of competitiveness. However, the country is currently still in the efficiency driven stage of development, while some other petroleum-holding countries, like Norway and the United Kingdom, are already in the innovation driven stage (Oxford Analytica, 2010: 33). This, naturally, affects the petroleum industry in Brazil as well. Echoing this, Hege Lund, the president of Statoil, stated in his interview to the *Veja* magazine that the worst barrier to the Brazilian petroleum activity is its inefficiency (Veja, 2013).

According to Munson and Rosenblatt (1997), foreign companies bound by the LCRs in the host state are often confronted by an inability of the local supply network to provide necessary components. Moreover, local parts may be prohibitively expensive. When dealing with the LCRs, there is a growing need to be strategic in the procurement planning for any particular project, operation or investment. Michael Warner describes procurement as a process that seeks to secure equipment, materials, and services at the *right* place, at the *right* time, to the *right* quality, in the *right* quantity and from the *right* place (Warner, 2011: 61). The need to meet the LCRs has an impact on all these five “rights”. At the same time, “place” is a key word here. International major contractors often have long term global sourcing arrangements with equipment and material suppliers enabling them to drive down costs and achieve competitive edge (Warner, 2011: 62). However, often the only “right” place with regard to the local content is the local market. Therefore, purchasing goods and services at the right place often has to be carried out at the expense of other factors.

In this light, the Brazilian domestic oil and gas supplier industry is currently faced with a challenge of being not competitive enough. Naturally, this affects both the price level and the performance capacity of Brazilian suppliers of goods and services for the petroleum sector.

Commenting on the *performance capacity*, OFS Capital report states that one of the main reasons why foreign firms find it difficult to meet the LCRs in Brazil is a lack of availability of suitable equipment (Manechy and Row, 2012).

High prices of domestic production constitute another major problem. Warner states that the LCRs could result in a potential cost escalation in the domestic market when compared with international markets (Warner, 2011: 37). His argument is confirmed by a survey conducted by the International Quality and Productivity Center in April 2012 which showed that 34% of

respondents said the main barrier to meeting the Brazilian LCRs is the price of domestic products (Phillips, 2012). The high prices problem originates in the lack of capacity and competitiveness. Prices tend to increase greatly when demand exceeds supply. Moreover, due to the lack of capacity, the majority of the Brazilian companies cannot compete internationally. According to IBRE (Institution Brasileiro de Economia – Brazilian Institute of Economics), only 25% of Brazilian companies in the petroleum market are engaged in exporting activities today. Moreover, they export less than 10% of their production (Manechy and Row, 2012: 10). In this situation, prompted by the promotion of the LCRs, the costs in the Brazilian market are incredibly high.

The cost differential for the local manufacture and assembly is significant when compared to similar good imported with the international pricing (Manechy and Row, 2012: 1). OFS Capital report provides an example of cost difference for a seawater lift pump comparing the Brazilian prices with those in the US. In just about every factor – including raw material, inputs and components, labor, capital costs, and margin – the price was much higher in Brazil. In general, the extra costs are usually from around 10% up to 40% higher (depending on the business segments) compared to the international level (Manechy and Row, 2012: 8).

The general lack of capacity in Brazil is also coming out through the **lack of qualified labor** and, consequently, **high costs for skilled employees**. Brazilian petroleum market is attracting companies from all over the world, and there are simply not enough trained and experienced professionals, as the demand exceeds the supply. Moreover, rules regarding the local content contribute to the rise of the labor costs and make it more difficult to find skilled employees (International Business Brazil Report, 2013).

According to the “International Business Brazil” Report (2013), a common misconception among the Norwegian companies is that a level of employee costs is relatively low in Brazil. However, it is not the case (International Business Brazil Report, 2013: 50). The exceedingly growing demand for highly qualified labor results in an upward shift in salaries. Moreover in Brazil, employers have to consider several additional costs related to their Brazilian employees in addition to their wage (*see Figure 2.5*). One of such extra costs is that of educating the employees. Due to the shortage of qualified labor, many companies prefer to take the matter into their own hands. Naturally, educating the employees is associated with costs in terms of wages to instructors, facilities etc., even though it is often necessary in order to reach sufficient standards in terms of competence. A related problem here is the costs related to mandatory benefits that companies have to pay. It is often said that the cost of an employee in the Brazilian petroleum sector is in the area of 180%-200% of his or her salary (International Business Brazil Report, 2013: 50).

One more hurdle that the foreign companies could experience when they are struggling to comply with the Brazilian LCRs is a rather **frequent change of rules and regulations** regarding this matter. In order to be able to plan the future strategically, companies have to have a good grip on the regulations they have (and will have) to comply with. However, the local content policy is relatively new in Brazil and has suffered several modifications in the last years. Keeping up with all the modifications in the local content regulations could present a considerable challenge for foreign companies.

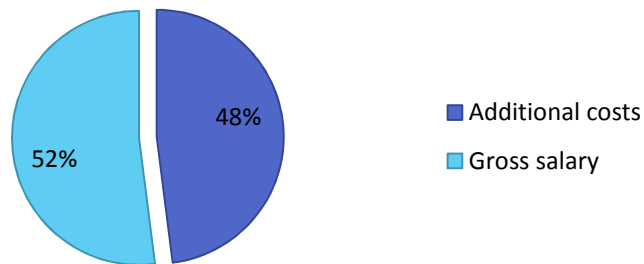


Figure 2.5. Total costs of an employee in Brazil (Source: *International Business Brazil Report, 2013: 50*).

Furthermore, the LCRs in the Brazilian petroleum sector have often been criticized as being unclear (Tysoe and Camargo, 2013). According to a survey conducted by the International Quality and Productivity Centre, 25% of the respondents stated that the lack of clarity about the rules and regulations is one of the main barriers to meeting the LCRs in Brazil (Addison, 2012).

In addition to the changes in regulation and procedures, the required local content level was not constant as well. The local content was a requirement in all bidding rounds (*see Figure 2.2 and 2.6*), with exemption of round 0. However, bidding rounds 1 to 4 had no minimum requirement for the local content commitment and accepted free offerings. In rounds 5 and 6 the Local Content Clause has received new elements and more detailed definitions. Minimum commitment percentages were introduced. Moreover, there were other significant modifications such as, for example, sea blocks were classified according to their water layers (shallow waters and deep waters) (PASCHOALIN, 2010). From these rounds on, the local content started to gain more weight in evaluating bidders' offers and percentages started to increase. From round 7 held in 2005, ANP introduced a new set of rules and requirements and a new methodology to calculate local content. The main change was the establishment of limits on the local content offerings to the percentage placed between minimum and maximum values (PASCHOALIN, 2010).

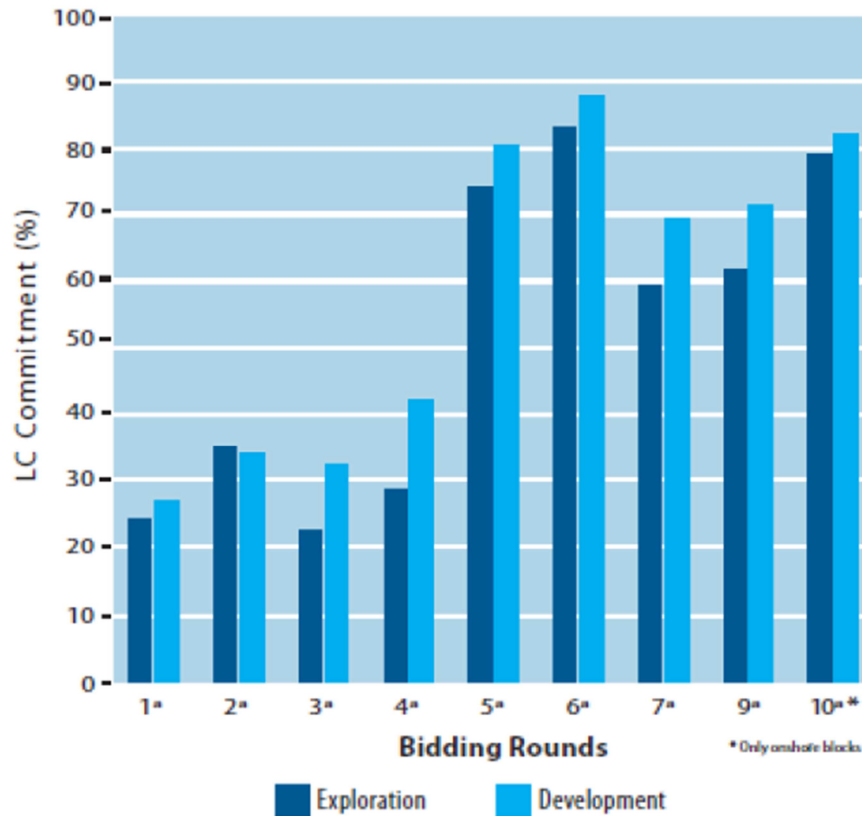


Figure 2.6. The average local content commitments in bidding rounds (Source: OSEC, 2011).

The rules have been in force until the new 11th bidding round that occurred in May 2013 when they have been modified once again. The changes claim to fix all the confusion that was getting the critique before (Tysoe and Camargo, 2013-03-11). However, it is too early to judge if they managed to do it or not.

Frequent introduction of the changes in the rules, together with them not always being clear enough, could present a significant challenge for foreign companies, as it increases uncertainty and hampers the processes of planning and making decisions. Moreover, it could possibly increase the overall costs of running operations in Brazil connected with extra expenses on hiring consultants.

Finally, one more potential problem that foreign companies could face in Brazil with a regard to the LCRs is **corruption**. In an economy in which a single resource generates a large proportion of fiscal revenues, corruption could become widespread (Oxford Analytica, 2010: 33). Moreover, if a minimum level of the local content required is beyond the actual capacity of the local industry, it could lead to delays in projects. This situation could easily prepare a ground for increased corruption as a means to avoid such delays. Transparency and predictability in enforcing the local content regulations is critical for the success of the local content policy (Heum, 2011: 10).

The Transparency International's Corruption Perceptions Index ranks countries and territories based on the perceived level of corruption there. A country could score on a scale from 0 to 100, with 0 meaning a country is perceived as highly corrupt and 100 – as very clean. A country's rank indicates its position relative to the other countries and territories included in the index. Brazil's current ranking is 69 among 174 countries. In comparison, Norwegian rank for 2012 is 7 (Transparency International, 2012). According to a survey carried out by FIESP (Federation of Industries of the State of Sao Paulo) in 2008, corruption accounts for at least 2% of Brazil's GDP every year (equal to a loss of USD 49.6 billion to corruption in 2011) (International Business Brazil Report, 2013: 66).

Even though Brazil is a signatory to the Organization for Economic Cooperation and Development (OECD) Anti-Bribery Convention and has laws, regulations and penalties to combat corruption, their effectiveness is inconsistent. The difficulties of fighting corruption in Brazil are compounded by the high degree of decentralization, which leads to the local authorities having wide discretionary powers. Moreover, oversight mechanisms at these levels are usually characterized by questionable efficiency, which could provide a fertile ground for corrupt practices (International Business Brazil, 2013: 66).

In order to meet their contractual obligations, as well as for their bottom line and reputation, foreign companies need local suppliers to be competitive on price, delivery, quality control, and to avoid unethical behavior. Moreover, the regulations regarding the local content have to be as clear as possible. However, the reality in Brazil nowadays may not reflect this to the full extent. According to the report by Booz & Co., Brazil is in the challenging position with higher costs than emerging countries and lower productivity than developed countries (Business Guyana, 2012). All the possible challenges discussed above are closely connected and enforce one another. This results in project delays and hefty fines for non-compliance with a required local content level which present additional risk factor and lead to the costs of doing business in Brazil rising up to a very high level.

1.6. Research questions

Based on the theory reviewed above as well as on the current gap in the literature, it becomes possible to formulate the research questions of the present thesis. The theory made it clear that the LCRs present a challenge not only for that states themselves but for the focal companies as well. Aiming to create a contribution to this topic, the present thesis is concerned with investigating the experience of one Norwegian service company from the petroleum industry, namely *Aker Solutions*, regarding the LCRs in the Brazilian market.

Therefore, the first research question can be formulated as follows:

Research Question 1: What challenges has Aker Solutions faced in Brazil regarding the LCRs in the Brazilian petroleum market?

Solutions that companies seek to solve the arising challenged are of great interest and could create a valuable insight into the topic. Therefore, the second research question is formulated as follows:

Research Question 2: Which strategies has Aker Solutions applied in order to adjust to the LCRs in the Brazilian petroleum market?

Chapter 3: Research Methods and Methodological Reflections

The following chapter presents and discusses methods of data collection that have been employed in this thesis, as well as methodological reflections on the field work.

3.1. Research strategy and design

The present study is embedded into the *qualitative research* framework. The rationale for this strategy is based in the research questions and objectives which require an insight into *Aker Solutions'* attitudes, perceptions, and experiences regarding the LCRs in Brazil.

Qualitative research strategy is usually associated with an inductive approach to the relationship between theory and research (Bryman, 2012: 36). However, a deductive approach is equally important as it provides a good initial basis for elucidating the issues and topics to be discussed with the respondents. Thus, the present study contains elements of both deduction and induction.

A research design is a framework for the collection and analysis of data (Bryman, 2012: 46). In the most basic sense, it is a logical sequence that connects the empirical data to a study's research questions and conclusions (Yin, 2003: 20).

The present research uses a *case study* research design. This choice is justified by the research questions that are posed. In general, the case study approach is preferred "when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within a real-life context" (Yin, 2003: 1). The essence of the case study research design is that it seeks to illuminate a set of decisions: why they were taken, how they were implemented, and what the result was (Schramm, 1971 in Yin, 2003: 12). As this study focuses on one company and its experiences regarding the Brazilian LCRs, the research design can be further specified as a single-case study research design.

3.2. Challenges and the change of the research design

My initial research strategy was to do a comparative multiple-case study that would focus on a number of Norwegian companies and research entities that provide services to the petroleum industry and that have been working towards the Brazilian market. The research was supposed to focus on their experiences with the LCRs established by the Brazilian government: what are the challenges they face regarding this issue and what solutions do they seek. In order to conduct

such a research, I managed to get in contact with several SMEs (small and medium enterprises) and research entities located in the Trondheim region. However, after conducting my interviews, I felt the need to change my research strategy – the interviews showed that, due to the nature of their entry and type of products and services they provide, none of these companies have experienced any problems with the LCRs. The local content is a very complex topic, and requirements for different firms can differ substantially, depending on various factors. Therefore, after consulting with some of my research sponsors, I realized that focusing on the one larger company via a single case study format would, probably, be the most beneficial way to approach the topic of the local content. Doing so provides the researcher with an opportunity to have a more narrowed focus and to make better sense out of such a complex topic as the LCRs in Brazil. With this in mind, I have decided to change my research design from a multiple- to a single case study and, with the help of some of my research sponsors I have managed to establish contact with *Aker Solutions*, which agreed to participate in my research. At the same time, I have still decided to use some of the information obtained from the initial interviews as an addition to this study in order to provide a contrasting perspective on the experience of *Aker Solutions*.

3.3. Introduction of the company for the case study

As mentioned above, the present research is centered on investigating the experiences of *Aker Solutions*, a Norwegian transnational company that is a leading supplier of oilfield products, systems, and services for customers in the petroleum industry world-wide. In 2012, *Aker Solutions* had aggregated annual revenues of approximately NOK 45 billion. The company is listed on the Oslo Stock Exchange. The head office is located at Fornebu outside Oslo, Norway.

Aker Solutions ASA is the parent company in the group, which consists of a number of separate legal entities covering nine business areas (see Figure 3.1). “*Aker Solutions*” is used as a common brand and a trademark for most of these entities.

In a global perspective, *Aker Solutions*’ main markets are subsea production systems, floating and fixed production units, and drilling units (Annual Report, 2012). The company employs approximately 28 000 people in more than 30 countries and approximately 80 locations (Oil, Offshore & Shipping Conference presentation, March 2013). Brazil is one of the main foreign markets for *Aker Solutions*. The company has a long history of presence in the Brazilian market where it has been established since 1978. It has to be noted that it was *Kværner*, a company that used to be part of *Aker Solutions*, which started activities in Brazil by establishing a pulp-and-paper business there. However, the company gradually changed from being multi-industrial to focusing just on oil and gas.

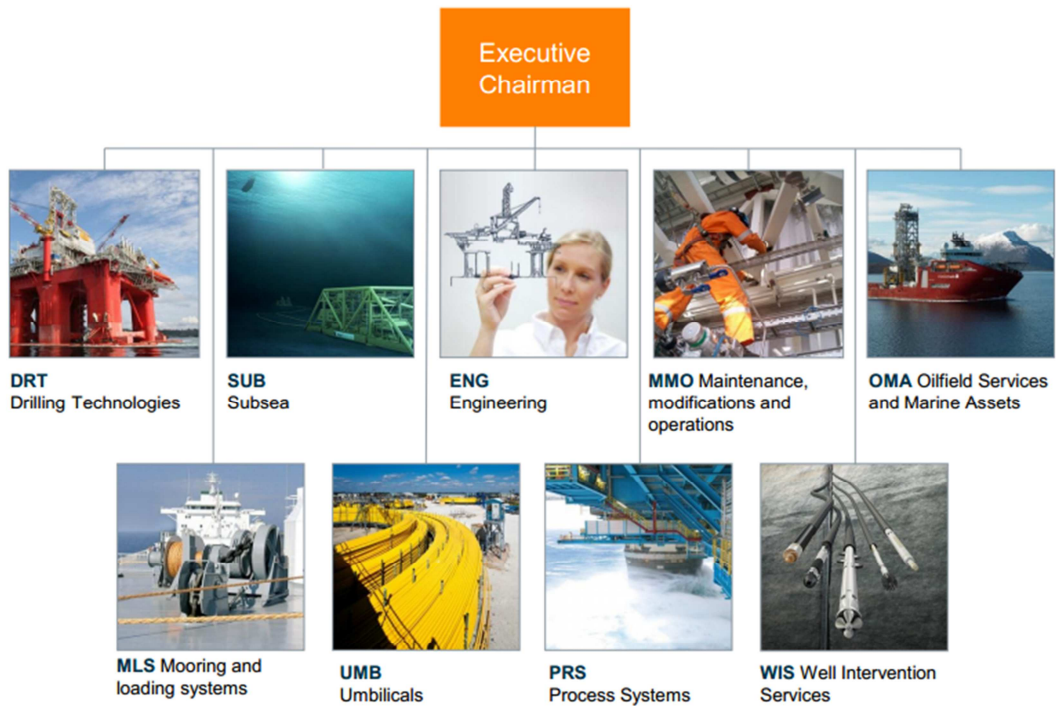


Figure 3.1. Corporate structure of Aker Solutions (Source: Aker Solutions presentation for the SEB Enskilda Nordic Seminar, 10 January 2012).

Today, *Aker Solutions* enjoys a strong local presence in Brazil (Annual Report, 2012). The Brazilian market provides 5% share of the overall employees of the company and 7% share of the total revenues (Corporate Responsibility Report, 2012). *Aker Solutions* employs approximately 1400 people there in three main locations: Curitiba, Rio das Ostras, and Rio de Janeiro (see Figure 3.2).

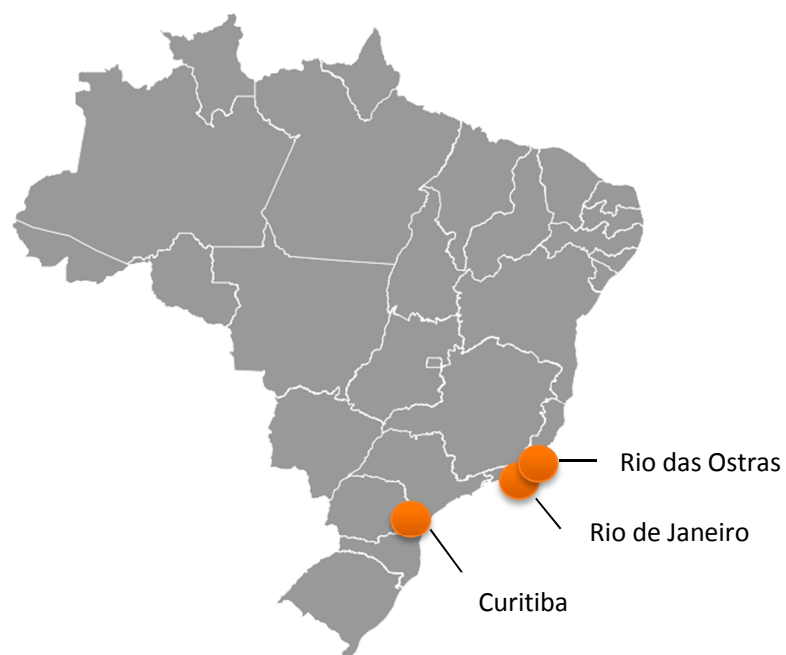


Figure 3.2. Aker Solutions' locations in Brazil.

Five business areas of the company are currently presented in the Brazilian market (*see Figure 3.3*).

| Business area | Abbreviation | Year of establishment in Brazil | Locations in Brazil |
|-------------------------------------|---------------------|--------------------------------------------------------------|----------------------------------------------|
| Drilling Technologies | DRT | 1997 | Rio de Janeiro Rio das Ostras |
| Subsea Systems | SUB | Product activities – 1995 Service activities – 1997 | Rio de Janeiro Rio das Ostras Curitiba |
| Process Systems | PRS | 2001 | Rio de Janeiro |
| Mooring and Loading Systems | MLS | 2009 | Rio das Ostras |
| Oilfield Services and Marine Assets | OMA | 2007 | Rio de Janeiro |

Figure 3.3. Business areas of Aker Solutions that are currently presented in the Brazilian market.

Conducting my research, I had a chance to interview informants from four out of five business areas of *Aker Solutions* presented in Brazil, namely DTS, SUB, PRS and MLS.

Aker Solutions has expressed a long term commitment to this market (link). In order to comply better with the LCRs, the company is building up a local capacity by establishing several production facilities in Brazil. Currently, there are a subsea manufacturing plant in Curitiba, and a subsea service base and a drilling riser production in Rio das Ostras. In addition, in 2012, *Aker*

Solutions started building a new multi-purpose service site for its drilling equipment business in Macaé, 180 km Northeast of Rio de Janeiro. This facility is expected to open in 2014. Moreover on 22 May 2013, *Aker Solutions* laid the foundation stone of a new plant in São José dos Pinhais in the Paraná state, which is expected to be operational in 2015. It will replace the current subsea manufacturing in Curitiba and double the company's production capacity in the country (*Aker Solutions* website).

3.4. Research sponsors and gatekeepers

Finding a relevant site for conducting a social research and gaining access to it is often problematic. With this in mind, the role of research sponsors and gatekeepers has to be emphasized.

According to Saunders (2006), personal contacts of the researcher could act as research sponsors by vouching for a researcher and the value of her research in order to help her gain access to relevant organizations and respondents. Research sponsors have been of great value to me in the process of working on this thesis. In the process of conducting a research for my internship during the autumn semester of 2012, which have been mentioned in the introduction to this thesis, I established a number of important contacts through my internship supervisor at the company, Gunn Kari Hygen. Among others, she introduced me to my informants at the Brazilian-Norwegian Chamber of Commerce (BNCC), INTSOK, and Innovation Norway. These people have provided me with very valuable insights regarding the issues covered in my present research. Moreover, the informant from BNCC, Terje Staalstrøm, was the one who suggested that *Aker Solutions* could be an interesting case to study. In addition, he acted as my research sponsor by providing me with a contact person at the company and vouching for my research. In this way, I was introduced to my gatekeeper at *Aker Solutions*.

It has to be noted that research sponsors have also played an important role in following the multiple-case study strategy that was initially chosen for the present research. In this case, a person who acted as my research sponsor was Oddvar Aam from Marintek. I was introduced to Mr. Aam by Gunn Kari Hygen while conducting my internship research last autumn. He was very kind in helping me to find and obtain access to relevant companies and informants for my research.

Gatekeeping is a common phenomenon in social research and refers to the process of mediating an access to organizations and informants. A gatekeeper, therefore, is a person at the organization who controls the access (Saunders, 2006; Bryman, 2012). Organizations that become exposed to the social research are naturally concerned about issues of confidentiality and

the ways in which they are going to be represented in the published work. Consequently, gaining access is usually a matter of negotiation between a researcher and a gatekeeper (Bryman, 2012: 151). My gatekeeper at *Aker Solutions* introduced me to a number of relevant informants within the company. At the same time, as the topic of my research could touch upon certain confidential information, he requested to check my writings and to make sure whether my findings could be made public. In addition, I was requested to avoid using in the text any direct citations from my interviews with the respondents at *Aker Solutions*. I accepted these requirements, therefore, the “research bargain” was made and I gained access to my company of interest.

Conclusively, gaining access to organizations and informants is often considered to be a process that contains a certain degree of challenge (Mander, 1992; Saunders, 2006; Bryman, 2012). However, in my experience, utilizing the help of the research sponsors and gatekeepers resulted in a successful attaining of admittance to relevant organizations and informants and, consequently, in a fruitful collection of the data for my research.

3.5. Methods of the data collection

Conducting interviews is the most widely employed data collection method in qualitative research (Sandelowski, 2002; Nunkoosing, 2005). This holds true with regard to case studies as well, as (qualitative) interviewing is one of the typical ways of following this research design (Bryman, 2008: 76).

Semi-structured interviews were the prime method to produce data for the present research. The main reason for this was the need of flexibility. An interview guide with a list of fairly specific topics to be covered during the interviews was prepared. However, the chosen style of the interviewing allowed necessary changes in the questions to be made depending on the course that a particular discussion took. This opened up the possibility to discover some issues that were not immediately visible. Moreover, semi-structured interviews allow better for discussions and reflections with the interviewees than structured interviews where one cannot abandon the strict, pre-defined structure of the questions.

I have conducted five semi-structured interviews with five managers at *Aker Solutions*. All interviews were conducted in a period of one month in the spring of 2013. Two of the interviews were held face-to-face in the *Aker Solutions* office in Oslo. The rest were done via Skype or telephone due to the geographical location of the informants.

Recording of the information was done with a help of a sound-recording devise and/or a special program for recording the sound during the Skype conversations. All data was transcribed after the interviews. The language of the interviews was English.

As mentioned earlier, addition to the interviews with the managers at *Aker Solutions*, which form the core of the present study, I conducted three interviews with the representatives of the Brazilian-Norwegian Chamber of Commerce (BNCC), INTSOK, and Innovation Norway. In order to have interviews with the respondents from BNCC and INTSOK, I made a one-day trip to Oslo. The interview with the respondent from Innovation Norway was done in the organization's office in Trondheim.

The Brazilian-Norwegian Chamber of Commerce is promoting the development of commercial relationships between Brazil and Norway. The Chamber organizes a variety of networking events, conferences and seminars, company visits and bridging potential business partners, all in order to give the members updated information about the political, economic or sector business issues, as well as to raise the general knowledge in Norway about the business environment in Brazil (BNCC website).

INTSOK – Norwegian Oil and Gas Partners is a network-based organization established by the Norwegian oil and gas industry and the Norwegian Government. Its objective is to work with companies in the Norwegian petroleum industry to expand their business activities in the international oil and gas markets. The organization encourages active dialogue between oil companies, technology suppliers, service companies and governments (INTSOK website).

Innovation Norway is the Norwegian government's official trade representative abroad. It aims to assist Norwegian businesses in growing and finding new markets. The organization provides competence, advisory services, promotional services and network services (Innovation Norway website).

All three of these organizations could be considered as organizations that facilitate internationalization of Norwegian companies. The interviews, I have conducted with the respondents from these organizations, were a valuable source of background information on the topic of my thesis, as they provided a panoramic perspective on the issues being researched. Moreover, these informants were very helpful by suggesting me further sources of information and referencing me to other people who could be relevant for my research.

Finally, as mentioned above, I conducted six interviews with four Norwegian SMEs and two research entities which have operations within the petroleum sector and which have established themselves in the Brazilian market. Due to the change of the research design from multiple- to single-case study, the information derived from these interviews will be discussed briefly in the findings section to provide a comparison to the *Aker Solutions'* experiences. The names of the companies and the respondents will be undisclosed. It has to be also noted that having these interviews contributed to my deeper understanding of the internationalization

process of the Norwegian companies from the petroleum sector. Moreover, it helped me to understand better the inherent complexity of the Brazilian local content issue.

In addition to the interviews, a number of power point presentations, as well as relevant articles and reports on the topic, provided by my respondents have been a good source of the background knowledge. This information was very helpful due to the lack of the academic literature on the studied issue.

3.6. Reflections on the collection of the data

As mentioned in the introductory chapter, my interest in the issues revolving around the internationalization of the Norwegian petroleum sector companies to Brazil stem from the internship I have conducted in the autumn semester of 2012. The interviews that were carried out for my internship research, although being focused on the cross-cultural difficulties between Norwegians and Brazilians, at the same time touched upon other challenges that the Norwegian companies might meet while doing business in Brazil, such as, for example, the LCRs that became the center issue of the present research. These interviews provided me with an introduction and initial insight into the business environment in the Brazilian petroleum market, as well as into some experiences of the Norwegian companies on operating in this country.

As argued in the previous chapter, there is a definite lack of academic research on the topic of the LCRs in the petroleum industry, especially studied from the perspective of the foreign companies that have to comply with these regulations. This was a significant obstacle in formulating the questions to be discussed during the interviews with my respondents for the present research. With this in mind, the information I was able to elucidate from my internship research helped me to outline certain potential problems that the companies might face with regard to the LCRs in Brazil. Moreover, the informants from such internationalization-facilitating organizations as BNCC, INTSOK, and Innovation Norway that I have met during my internship, were a source of valuable information that also contributed to the formulation of the interview questions for the present research.

Time constraints were another major obstacle to conducting this research. In addition to a limited timeframe of one semester, the change of the research strategy contributed to the challenge of collecting the good and interesting data. I have spent a considerable amount of time interviewing companies for my initial multiple-case study research design. Therefore, when the decision was made to focus on one company only, I found myself to be constrained in time I had for conducting a new research for the *Aker Solutions* case. Although it was a rather risky decision, I do not regret it, as, in my opinion, this single case study better highlights the

complexity of the topic. Moreover, by conducting the initial interviews I was able to collect some interesting insights into the problem in focus which helped me in preparing interview questions for *Aker Solutions*.

A number of minor technical difficulties were experienced in connection with the collection of the interview data. The interviews conducted via Skype and telephone were prone to some lack of quality in the connection which, at times, made it challenging to understand what the respondent was saying. I have tried to clarify the information with the follow up questions whenever possible. Moreover, as the interviews were recorded with the digital voice recorder, at times the clarity of what people have been saying were not the best, especially if the interview was conducted via phone or Skype.

It has to be also mentioned that, when conducting a research, a researcher should pay increased attention to his/her role in the research process in order to be as much “neutral” as possible and to avoid misinterpretation of the information. However, it is often a challenge because he/she is a human being, with certain perceptions, outlook on life, and experience. Moreover, my personal background as a Russian person studying Norwegian companies in Brazil might also have been an obstacle to asking better questions that might have surfaced richer information from the respondents. Although I have spent almost one year researching various aspects of Norwegian and Brazilian business environments with regard to the petroleum industry, certain understanding of the local contexts might have been missed. This could have led to a situation when certain aspects of business peculiarities, both of Norway and of Brazil, might not have been taken into account. In addition, a language barrier might have had an effect on the interpretation of information by both my respondents and me. The language of the interviews was English, which is a mother language for neither me, nor my informants. Even though all of my respondents and I could be considered as fluent users of English, from that point of view, certain linguistic misinterpretation might have aroused both in interpreting my questions by my respondents and for me in interpreting their answers.

Finally, one of the research questions deals with the strategies to cope with the LCRs. This topic can be considered as connected with certain information that is confidential. The sensitivity of this issue to the company might have resulted in the answers from some of the respondents being less detailed. For example, when asked about concrete strategies, one of the respondents from *Aker Solutions* answered that he cannot elaborate on this further. With this in mind, the necessity to make my research public resulted in focusing only on the general strategies of *Aker Solutions* instead of going deeper into the more detailed “step-by-step” strategies.

Chapter 4: Analysis of the Findings

The present chapter is one of the most fundamental in this thesis as it provides the reader with a presentation of the findings of the research. The dominant part of the analysis will attend to *Aker Solutions*, the main company in focus of the present study, and to its experiences regarding the LCRs in the Brazilian oil and gas industry. In addition, the chapter will present a number of significant conclusions that have been elucidated from the supplementary interviews with four Norwegian SMEs and two research entities, which are also present in the petroleum market in Brazil. This will be done in order to create a beneficial complement to the research by providing a contrasting perspective to the experience of *Aker Solutions*.

The presentation and analysis of the findings will be organized in line with the research questions of this thesis, which have been outlined in *Chapter 2*. With this in mind, the body of the present chapter could be virtually divided into three main parts. The first one will handle the challenges that *Aker Solutions* has met in Brazil in relation to the LCRs in the local petroleum market. The strategies the company has applied in order to adjust to these challenges will be the focus of the second part of this chapter. Finally, the concluding part will address the findings from the supplementary interviews by providing a short analysis of the experiences that smaller organizations, with an operating focus different from that of *Aker Solutions*, have concerning the same issue of the LCRs in Brazil.

4.1. Remark on the internal structure of Aker Solutions in Brazil

In order to provide a reader with a better understanding of the findings presented further, it is necessary to make an additional comment regarding the internal structure of *Aker Solutions* as a company.

As mentioned in the previous chapter, *Aker Solutions* is the common brand and the trademark for a number of separate legal entities that cover nine different business areas within the organization. At the moment, only five of them are represented in the Brazilian market, namely *Drilling Technologies (DRT)*, *Subsea Systems (SUB)*, *Process Systems (PRS)*, *Mooring and Loading Systems (MLS)*, and *Oilfield Services and Marine Assets (OMA)*. This study incorporates the information provided by the respondents from four out of five business areas, with the exception of *OMA*.

Due to the different nature of their products and services, the abovementioned entities could be considered as fairly independent units in terms of their operations. Although the

fundamental portion of the experiences regarding the Brazilian LCRs is common for all of the business groups interviewed, it has to be noted that different entities could vary on certain aspects to some extent. Nevertheless, keeping in mind that this research looks at *Aker Solutions* as a single company, the present discussion will treat the experiences of separate entities together. At the same time, certain differences will still be mentioned in the analysis when necessary.

4.2. Local content requirements: a challenge for Aker Solutions?

The first research question of the present thesis asks what kind of difficulties *Aker Solutions* has faced in Brazil regarding the LCRs in the local petroleum market. With this in mind, first of all it is necessary to identify whether or not the company by any means perceives these requirements as challenging.

In line with the GPN approach presented earlier in this study, by establishing a subsidiary and production facilities in Brazil, *Aker Solutions* has become embedded in the specific territorial location and, therefore, is affected by the policies enforced by the Brazilian government. Furthermore, according to this theoretical framework, the state exercises a substantial degree of power over the type of industry *Aker Solutions* is involved in. With this in mind, the requirements regarding the local content posed by the Brazilian government could be considered as having profound implications for the local operations of such foreign company, deeply-embedded in the Brazilian market, as *Aker Solutions*.

Taking the aforementioned into consideration, one of the first questions that I posed to my respondents at the focus company was whether they considered the LCRs in the Brazilian petroleum sector a challenge or not. Supporting the theory, all of them were very clear that the local content had caused a number of problems and that it indeed presented a significant challenge for *Aker Solutions*.

It has to be noted though that the LCRs, despite certain challenges associated with them, are at the same time seen by *Aker Solutions* as an opportunity as they, if managed correctly, lead to a stronger development of the company's position in such a prominent foreign market as Brazil. Moreover, the respondents expressed an understanding of the reasons behind the existence of the LCRs in Brazil. This is inherently logical taking into account that *Aker Solutions* is a company that originates from Norway, a country which has often been quoted as a model example of successful management of its hydrocarbon resources by means of an intelligent application of the local content policy. In addition, the respondents recognized the existence of certain historical reasons for introducing the LCRs in the oil and gas industry in Brazil. With

regard to this, one of the managers noted that doing as much as possible locally is a very “Brazilian” way of operating. Indeed, up until 1984 Brazil has been either a military controlled state or under a strong influence of the military. Even after the change of the regime, the country remained considerably closed until the late 1990s. This means that for a long time Brazil has been relying substantially on the domestic production. Therefore, when it came to developing the petroleum reserves, it was only natural for the Brazilian government to emphasize the need for doing as much as possible internally in the country. One of the respondents commented that, in his opinion, there have never been any doubts in Brazil regarding the need to perform as much as possible locally, as the political understanding in the country in relation to this issue has been like this for decades.

While the motivation of the Brazilian government to establish the LCRs is clear, the way in which these requirements have been manifested in reality could be a subject of a dispute. Developing a regulatory framework to govern its oil and gas industry, Brazil has the possibility to learn from the experience of those petroleum-rich countries that have successfully managed a similar task in the past. With regard to this, it is often said that the Brazilian government is trying to imitate the Norwegian regulatory model, which is considered an example of the best practice in this matter. Discussing this issue, one of the respondents has argued that it is not the case. He stated that while the prime objective of having the LCRs in Brazil – an establishment of a competitive national industry – is similar to that of Norway, the implementation of the principle is very different. For example in Norway, domestic companies received a priority only when they were competitive on price, quality, and delivery time. Local Brazilian suppliers and subcontractors, in contrast, currently operate in the environment that could be considered highly protectionist.

Summing up, it is possible to conclude that for *Aker Solutions* the issue of the local content in Brazil is two-sided. On one hand, the company understands the underlying reasons and motives of the Brazilian government to establish the strict LCRs. Moreover, these requirements can be seen as an opportunity for firmer establishment and root-striking in the Brazilian market. At the same time, *Aker Solutions* has experienced some challenges connected with the LCRs. Therefore, to some extent, the company joins in the chorus of voices that express certain doubts regarding the way this idea was implemented into the reality. In line with the main research objective of the present thesis, the following analysis will focus specifically on discussing the reasons for why the Brazilian LCRs could be seen by *Aker Solutions* as associated with certain challenges.

4.3.1. Challenges connected to the local supplier market

As discussed in *Chapter 2*, one of the major problems of the Brazilian petroleum industry nowadays is the current lack of capacity of its domestic service industry. This notion was indeed confirmed in the interviews with the respondents from *Aker Solutions*. One of the possible explanations for such a gap has to do with the Brazilian petroleum industry not being competitive enough. According to one of the respondents, a fundamental problem is that domestic companies, in contrast to their foreign counterparts, are being put in a favored position. Therefore, there is a limited natural incentive for them to be competitive on the international level.

One has to remember that the prime reason for Brazil to open its petroleum sector to foreign investment in 1997 was to attract the foreign competence that was lacking among the local firms. Hosting international companies with relevant know-how in principle should help Brazil to make its own petroleum industry more knowledge- and innovation-driven. However, in practice, the current local content policies in the country are aimed more at creating a protective environment for the domestic companies, rather than at nurturing their competitiveness. Naturally, such situation hampers the development of the local petroleum industry, while simultaneously creating negative implications for the foreign companies that seek to establish operations in the Brazilian market.

Supporting this idea, one of the respondents acknowledged that, while the local Brazilian supply base has to be developed by the companies like *Aker Solutions* and its competitors, it is at the same time very difficult for foreign firms to get established in this industry in Brazil. By establishing local industries, foreign companies get the same protection as the existing local ones. However, it is not always easy for the newcomers to develop smooth-running operations, as not all of them succeed in navigating through the Brazilian bureaucracy and the complex tax system.

Without a doubt, the ability to successfully comply with the strict LCRs is crucial for the majority of the foreign companies, if they want to establish a long-term presence in the Brazilian oil and gas market. However, the lack of capacity and competitiveness discussed above represents a significant challenge for the companies as they often struggle to follow the local content regulations. First and foremost, it is reflected in the relationship between the foreign firms and the local suppliers and subcontractors. These relations are often negatively affected by a number of aspects which will be discussed further.

First of all, according to one of the respondents, when entering into the relations with local manufacturers, foreign companies struggle with their **poor competence in certain areas**.

On one hand, Brazilians are well-qualified in such services as welding, piping, steel work, etc. On the other hand, however, they often struggle when it comes to assembling complex systems, as well as to planning and coordinating. The abovementioned respondent further explained that a possible reason for such situation could be that the local subcontractors are used to work under an exceptionally strict control of *Petrobras*. Due to this, they are experiencing difficulties in adjusting to have a more flexible environment to work in which is usually provided by the foreign companies.

Another major problem that stems from the necessity of dealing with the local suppliers and subcontractors, confirmed by all of the respondents, is an **unreasonably high level of prices** in the Brazilian domestic supply chain. This supports an assumption made in *Chapter 2*. As mentioned earlier, *Aker Solutions* has established a number of production facilities in Brazil and, therefore, is able to perform a portion of required manufacturing locally on its own. However, due to the limited capacity of these facilities, the company often finds itself in the situation when it has to outsource some of the work to the domestic Brazilian companies.

For example, one of the business entities within *Aker Solutions* in Brazil is involved in a significant amount of subcontracting. Usually, when producing a module for the Brazilian market, the abovementioned entity performs the engineering part of the work itself. However, it has to find somebody who is able to fabricate and assemble the equipment that has been designed. Naturally, as *Aker Solutions* is required to present a certain level of local content in its operations, the preferred manufacturer should be a local Brazilian company. However, the entity often finds itself in a situation in which it is faced with a difficulty to obtain predictable prices and schedules when working with a local subcontractor.

It has proven very challenging to find local providers at sustainable prices when comparing to the international price level. According to one of the respondents, the prices of the Brazilian sub-suppliers are often two-three times higher, comparing with those in the international market. Actually, in certain circumstances it could be as much as twelve times the price offered worldwide. Discussing the reasons for such a high price level in the Brazilian supplier market for the petroleum industry, the respondents noted that the LCRs seem to have created unreasonable expectations among the local companies. It is possible that they believe that, in many instances, foreign companies do not have any other choice than to use local services, if they want to avoid penalties for not reaching the required local content level stated in the contract. Moreover, as suggested by one of the respondents, when establishing their prices, local suppliers have a tendency to put them close to the price level of imported goods. The import taxes in Brazil are very high, and one may end up paying 40-50% extra in taxes on top of

the cost of the product itself (the tax level could vary dependent on products and services, where some are at 10-20%, while the others are taxed close to 50%).

In addition to the poor competence in certain areas and the high prices, another problem with regard to using the local supplier chain is **delays** in the project schedule which make the project more expensive than originally planned in the budget. With this in mind, the necessity to meet the LCRs in Brazil by working with local companies is connected with additional risk of not meeting the deadline and getting fined by the client. One of the respondents commented that, compared to the international market, local Brazilian subcontractors often displays poor coordination and planning, as well as a different attitude towards time. All of this results in projects being delayed for no obvious reason. In such a situation utilizing the local content in terms of working with the local subcontractors exposes the company to a higher risk with the contract.

With the aforementioned in mind, certain business entities within *Aker Solutions* in Brazil sometimes find themselves in the situation when they are forced to compromise their value of the local content in order to meet the schedule. One of the respondents explained that when they set up a project, they are naturally trying to make sure the LCRs will be met. However, due to the high local prices, things are sometimes not materializing as expected. In the situations like this, the company is forced to move some work outside Brazil. This, however, reduces the overall value of the work done inside the country and, therefore, affects the compliance with the LCRs.

It has to be noted that the high level of local prices and the delays in the projects do not only compromise the operation and add to the expenses of the foreign companies similar to *Aker Solutions*; they also affect the productivity of the Brazilian petroleum sector itself, in this way creating a vicious circle. Indeed, as noted by one of the respondents, many projects started in Brazil in the last years have been delayed. He also pointed out that there is a big difference between the plans and the reality with regards to what *Petrobras* has planned to accomplish until 2013 and what has actually been done. *Aker Solutions* acknowledges that this is a big political issue, and it is something that it, as a company, has to relate to.

Finally, it has to be mentioned that one of the business entities within *Aker Solutions* has had a fairly negative experience with trying to do the local content in Brazil. This entity did not have any production facilities in the country and, therefore, was planning to find local subcontractors that would be able to manufacture the company's products locally. In order to do that, the entity hired a purchasing manager in Brazil and did an extensive investigation of the companies represented in the local market. However, as clarified by one of the respondents, the prices they received were not acceptable for the company: they were approximately three to six times higher than the prices this entity normally got from its existing international suppliers in

Singapore, Poland, and South Korea. The result was that this particular business entity within *Aker Solutions* was not able to find any suitable suppliers in Brazil. This, together with a very complex Brazilian regulations and tax system, made the entity to decide not to provide any kind of local content in Brazil for the time being. Therefore, the final decision was to offer their equipment to the Brazilian clients based only on the international production. However, in this case the entity would have to add the price of the fine for non-compliance with the LCRs in their offer, and that could potentially result in losing the contracts, due to the fact that the final price would end up being too high for a client. With this in mind, the entity's current strategy for Brazil is to survey the market and see if there will be any changes.

Summing up, the interviews confirmed an assumption presented in *Chapter 2* that poor capacity and low competitiveness of the Brazilian petroleum sector results in the lack of competence, high prices, and delays, all of which is associated with a certain amount of challenge for *Aker Solutions* in terms of complying with the LCRs. The dimension of a problem is especially significant, when the company is well established in the location and has developed strong ties of dependency to the local market, like it is in the case of *Aker Solutions*.

4.3.2. Challenges connected to the local labor market

As discussed in *Chapter 2*, another significant challenge for the foreign companies in Brazil spurred by the lack of competence is connected with the difficult situation in the local Brazilian labor market. A common understanding is that the situation in the Brazilian petroleum sector is heated, as there is a general lack of skilled employees. According to one of the respondents, the government's demand of the local content is putting a lot of pressure on the resources in the petroleum sector, not only material but human as well. There is a lot of activity in the oil and gas market and, in order to get the work done, a significant number of skilled professionals is required. However, as discussed in the second chapter, there is a current lack of qualified workforce in the Brazilian market, and the companies end up "stealing" good employees from each other.

It has to be mentioned that, as pointed out by one of the respondents, the situations between the blue-collar workers and the white-collar workers are different. Qualified blue-collar workers are not very difficult to find, and the price level in this labor segment is on a competitive level. At the same time, Brazil has a big shortage of people with relevant engineering and managerial skills and industry experience. According to one of the respondents, *Aker Solutions* is able to hire blue-collar workers at a reasonable price and train them in a reasonable time schedule, so they can perform a good job. He also mentioned that the company has not

experienced any problems with finding employees to perform support functions, such as HR and finance, for example. At the same time, the company sees a challenge in finding specialist engineers and project people.

The possible reason for this, as identified by one of the respondents, could be that during the last ten years Brazil has experienced an exceptional growth in many areas such as telecommunications, automotive industry, energy and mining sector, etc. Therefore, there is a lack of skilled managers across different sectors throughout the country. In the petroleum industry, it is becoming even more prominent due to the general underdevelopment of this industry in Brazil.

Naturally, this shortage of skilled workers has an implication on the salary levels. According to one of the respondents, management positions in Brazil are paid relatively more compared to Norway, for example. Moreover, a difference between an average blue-collar salary and an average vice president salary could be two to three times higher than it is in Norway. One of the respondents noted that a possible reason contributing to the high prices for the skilled white-collar workers in Brazil have to do with the fact that there has been generated a high demand, at least by foreign companies.

Another problem is connected with the fact that an employee turnover is very high in the Brazilian petroleum market. People tend to shift jobs quite often: Brazilian employees can easily leave a company, if they get better offer somewhere else. This presents a challenge for the foreign companies in terms of strategic considerations, as they could lose critical employees at very inconvenient times. One of the respondents commented that the employees' attitudes are very much driven by money, and the loyalty in the oil and gas labor sector is very low, at least it is not on the same level as experienced in *Aker Solutions* in Norway. Moreover, as the notice period for employees who plan to leave is just one month (in reality, people usually leave before this period is over), the company finds itself in the situation when it could lose key people fast. This is, of course, a difficult situation to deal with in a heated market.

Keeping in mind the difficulties of finding a good local engineer or manager, a natural question appears: *Why not inviting expats that possess relevant skills and experience to work in Brazil?* Indeed, as noted by one of the respondents, in legal terms, one does not have to be a Brazilian or have a Brazilian passport in order to be considered as a "local content" – the rules in Brazil are not so strict on this matter. The requirement is that he/she has to be registered as an employee in Brazil and work and receive his/her salary there. However, when discussing this issue, one of the respondents said that bringing in a big numbers of expats would not be viable. There are a number of reasons for that.

First of all, hiring expats would be too costly. These employees would be on the expat contracts that require a significant additional financing connected with uplift in the salary, the need to provide housing, schooling for the children etc. All these expenses would present too heavy of a burden on the company's budget. Therefore, *Aker Solutions* does not see the financial viability of having a big number of expats working in its Brazilian subsidiaries.

Furthermore, there are certain bureaucratic issues connected to bringing the expats to Brazil. In this country, obtaining visas and work permits is a long and rather complicated process. One of the respondents mentioned that when he worked in the US, it took him two weeks to get a work permit there; in Brazil, on the contrary it could take as long as six months.

Finally, according to another respondent, there is a limit on the number of expats a single company is allowed to have in Brazil. This is yet another measure undertaken by the Brazilian government in order to promote and develop the local Brazilian workforce.

With the aforementioned in mind, another possibility to solve the labor scarcity problem could be to have engineers working with the Brazilian market distantly from another country. One of *Aker Solutions'* business entities in Brazil has tried to execute this strategy in one project. However, according to one of the respondents, it did not work so well. He mentioned that it would be very difficult, due to the different ways Norwegians and Brazilians interpret things and deal with them. This stems from the cultural differences manifested in the way people work in these the two countries.

Summing up, the respondents from *Aker Solutions* confirmed the idea expressed in *Chapter 2* regarding the fact that the difficulty in finding skilled professional together with high level of salaries could present a challenge for the company in terms of complying with the LCRs in Brazil. Adding to this problem, *Aker Solutions* is not able to solve this issue by substituting a local Brazilian workforce with a big number of Norwegians or other foreign employees due to high costs and bureaucratic difficulties associated with having expats working in Brazil.

4.3.3. Challenge connected to the lack of clarity

As discussed in *Chapter 2*, companies need to have a good understanding of the regulations that they have to comply with, in order to be able to execute a successful strategic planning for the future. With this in mind, another potential difficulty connected with the Brazilian LCRs, which has been outlined earlier, is a certain lack of clarity regarding these regulations.

The interviews at *Aker Solutions* showed that this issue indeed presents a challenge for the company. For *Aker Solutions*, the problem is manifested in two main ways. The first is the lack of clarity that stems from the fact that regulations governing the local content are not yet

well-developed and exist in a state of flux. As mentioned in *Chapter 2*, the LCRs are a fairly new concept in the Brazilian petroleum industry. Therefore, the local government has to continuously adapt them in order to fix problematic areas. Naturally, this situation creates significant problems for the foreign companies: as often it is difficult to plan in advance. Consequently, this increases the risk for the company's operations in Brazil.

Discussing this issue, respondents agreed that part of the challenge lies in the fact that Brazil has created a highly complicated and intricate regulatory framework. One of the respondents commented that there is a lack of clarity in the way local content is calculated, as often experts on the field cannot provide precise answers on this matter. Moreover, according to this respondent, certain things in the calculations are not logical: for example, *Aker Solutions* is investing a considerable amount of money in building a new facility in Brazil, however, this could not be considered as a part of the company's "local content package". The respondent expressed a feeling that such situations do not make sense, especially if one takes into account that the objective of the Brazilian government is to develop a competitive industry in the country. Naturally, this adds to confusion and could potentially lead to some poor planning caused by misunderstandings on the side of a foreign company.

In addition, a rather frequent change of the LCRs represents another part of the problem for *Aker Solutions*. According to one of the respondent, this is something that requires constant monitoring. In line with this, another informant explained that the LCRs are currently subject to one more revision, and nobody knows what the outcome will be. Moreover, the publication of the final version of the revised LCRs is being delayed. Naturally, this situation is highly inconvenient for any foreign company that is required to comply with the LCRs in Brazil. Acknowledging this, *Aker Solutions* at the same time recognizes that this is a difficult political issue and the company has to respect the way the Brazilian government wants to run its country.

The second way in which the lack of clarity in the LCRs manifests itself is connected with the question whether the company actually has to present the local content in a particular contract or not. For example, *Petrobras* provides a certain engineering, procurement and construction (EPC) contractor with a contract to build a platform. *Aker Solutions*, being further down in the supply chain, has to deliver a small component for this platform, alongside with other supplier firms who deliver other parts for the same project. The local content requirement for the whole platform could be, for example, 60%. Since 40% of the project could be procured from the international market, the EPC contractor has certain flexibility and, in order to lower the overall cost of the project, is able to decide which parts will require the local content and which will not. For *Aker Solutions* delivering a small part of the whole platform, it is often unclear until the contract is signed, whether its part of the work will include the LCRs or not. One of the

respondents commented that this lack of clarity is a serious challenge in terms of a strategic planning. It has to be noted, however, that the abovementioned example does not apply to all of the business groups within *Aker Solutions* in Brazil. The respondent, who provided the example, noted that the other entities might not experience this challenge due to the different nature of their products and services.

Finally, one of the respondents made a remark that the way in which the Brazilian government values the local content could be even more beneficial for the development of the Brazilian industry than it is at the moment. He mentioned two goals that Brazilian government should strive for through the local content regulations. The first one is to get local people employed, and that would mean to encourage manufacturing in the country. The second one, which is also more difficult to achieve, is to get local people educated in the engineering design process. However, at the moment the cost of fabrication is much higher than of the engineering part. So, in order to fulfill the LCRs, it is enough for a company to do the engineering abroad and just perform manufacturing locally. In the opinion of the aforementioned respondent, in order to develop Brazil has to value the “thinking” part higher, rather than just supporting the mere employment of the local people. In this way a country would benefit more, as it would develop the necessary competence and knowledge.

To give a short summing up, the interviews with the employees at *Aker Solutions* confirmed the idea expressed in *Chapter 2* that the lack of clarity in the LCRs presents a challenge for the company’s operations in Brazil.

4.3.4. Rise in the overall costs of operations

In addition to the expenses connected with the high prices introduced by the local suppliers and the high salary level of skilled workers, as well as extra costs due to delays in the projects, another aspect that raises the overall costs of complying with the LCRs in Brazil is taxes. Strictly speaking, taxes are not part of the local content regulations. However, this issue is very tightly connected with the challenge of meeting the required level of the local content and, therefore, is important to discuss.

Tax system in Brazil is very complicated. For example, different states within the country could have different tax regimes. Moreover, the tax level is rather high. The respondents recognized that it presents a challenge for *Aker Solutions*. One of the managers provided a following example. Once, his business entity decided to make a pilot casting at a local Brazilian company to check, if it could be a possible supplier for *Aker Solutions*. The production went well, and the entity made a decision to keep the casting in Brazil until it receives an order for it

from somebody. However, the costs of moving the casting between regions and storage prices were enormously high and added up to approximately the same amount that was spent on making the casting itself. Therefore, the entity had to move the casting to Norway. The respondent concluded that all these additional costs are often difficult to consider in advance and, therefore, they present an additional risk to the company's operations in Brazil.

Moreover, the levels of the import taxes are very high in Brazil as well. A tax on a foreign good or service imported to the country could add up to 40-50% on top of the cost of the good or service itself. However, *Aker Solutions* often manages to avoid certain expenses on taxation due to the fact that a lot of their products and services are going to be used on the continental shelf which has a separate taxation regime. In this way, the amount of taxes is reduced.

Another cost adding factor associated with the LCRs is all the internal and external legal services related to it. One of the respondents commented that utilizing the help and advice of qualified professionals, who are able to make sense out of the intricate local regulation system, is connected with enormous expenses in Brazil.

Finally, the last serious risk is a possibility to get a penalty for noncompliance with the LCRs. A company has to pay a penalty, if it does not meet the local content percentage set in the contract. For example, if the local content level is 60% and a company only delivers 50%, it is allowed to do so in a sense that it is not illegal. However, in this case the company would be fined: that means that it would lose money, and the overall contract value would be reduced. The respondents verified that the fine is a significant amount of money, usually comprising around 10% of the overall value of the contract.

Summing up, the interviews showed that the need to comply with the LCRs in Brazil is connected with a number of significant additional cost rising aspects such as high taxes, use of legal services, and a risk of getting fined for non-compliance.

4.3.5. Challenges connected to corruption

As outlined in *Chapter 2*, one more potential problem that companies could meet in Brazil is corruption. This matter is not considered as being a part of the LCRs per se. However, in an economy in which a single resource generates a large proportion of fiscal revenues, corruption could become widespread (Oxford Analytica: 33). Therefore, this issue is directly linked to the challenges the companies meet regarding the compliance with the LCRs, as this problem could create an unfavorable context for companies' operations in the country.

One of the respondents explained that *Aker Solutions* has strong policies regarding ethical compliance, and is using many tools (such as training, control functions, etc.) to ensure that the business is executed in a good manner. However, there are areas, such as a supply chain management, where it is logical for *Aker Solutions* to be particularly on alert. There have been cases of unacceptable behavior in this area, when the company has had to take firm actions to restore compliant practice. However, this respondent noted that, in his opinion, this problem does not stem from the existence of the LCRs, but is much more linked to the general culture in Brazil.

Nevertheless, in general, *Aker Solutions* has not met any serious problems with corruption in terms of complying with the LCRs in Brazil. The main reason is that the company is extremely clear on its zero tolerance of corruption policy. However, the respondents agreed that due to the lack of clarity in the regulations governing the local content, this field could be seen as significantly exposed to corruption issues. One of the respondents noted that the local content regime in Brazil leaves a great degree of subjectivity in the hands of the certificatory. That means that the same product with the same proportion of local ingredients may be measured to have a different local content percentage, depending on, for instance, the contractual set up and the certificatory body. Inherent problem to such regime is that it opens for corruption, as well as provides random competitive advantages to players in the market that cannot be linked to the purpose of incentivizing local production or developing a competitive national industry. Another respondent added that corruption is an area where one could never be certain – even with the most stringent compliance policies and practices, incidents might not be discovered.

The analysis above discussed the reasons that explain why compliance with the Brazilian LCRs could be seen by *Aker Solutions* as connected with a certain degree of challenge. The following part of the chapter will deal with the strategies the company applies in order to adjust to the LCRs in the Brazilian market and to mitigate the difficulties outlined above.

4.4. Aker Solutions' strategies to manage the Brazilian local content requirements

As shown above, the need to comply with the LCRs in the Brazilian petroleum sector is associated with a number of considerable challenges. These challenges have a direct impact on such core business issues of any company as business development, procurement, employment, and operations. In order to be successful in the Brazilian market, a foreign firm has to develop and follow a strategy aimed at meeting the LCRs, while simultaneously protecting and enhancing its own commercial interests and contributing to host-country's economic growth and sustainable development.

With this in mind, the second research question of this thesis deals with the strategies that *Aker Solutions* applies in order to adjust to the local content regime in the Brazilian petroleum sector and to mitigate the challenges that are posed by it. Taking into consideration a confidential nature of certain elements of the company's business strategy, my respondents were not able to share a detailed "step-by-step" description of actions they undertake with regards to this matter. However, it was possible for them to outline a number of general strategic considerations connected to handling the local content issue.

4.4.1. Contributing to the development of the local petroleum industry

All of the respondents acknowledged that the Brazilian supplier market for the petroleum sector displays a clear mismatch between the demand and the supply. At the same time, *Aker Solutions* sees an advantage of operating in the well-developed market defined by a high level of capacity and competence. As mentioned earlier, there is an understanding in the company that the supplier industry in Brazil has to be developed by the foreign companies with relevant knowledge and experience. One of the managers noted that *Aker Solutions* is working extremely hard to develop local suppliers.

Another respondent elaborated on this further saying that *Aker Solutions* has a profound experience and competence regarding oil and gas industry and is willing to share these with the Brazilian companies that are willing to learn. He added that *Aker Solutions* is trying to partner up with those local companies which might not necessarily be the biggest players in the industry, but which show a desire to develop.

Furthermore, the interviews showed that *Aker Solutions* displays awareness that it, as a foreign company, is closely interdependent with the local supplier industry. "If they succeed, we succeed", mentioned one of the respondents. He further commented that the company's strategy is to be strong in Brazil and to have a bigger responsibility in the local market. Moreover, the

presence and operations of *Aker Solutions* in Brazil are consequently generating business for other companies. At the same time, the company is dependent on its local suppliers in delivering its work. The respondent noted that *Aker Solutions* is not trying to do everything on its own; on the contrary, the company always focuses on what it is best in and leaves the rest for the others to do.

The aforementioned shows an understanding in *Aker Solutions* that the root of all the major challenges with local content compliance lies in the insufficient level of development of the local industry. At the same time, when a foreign company enters a new market, it becomes embedded there and establishes dependency ties with the local firms. With this in mind, if the company has a long term commitment to stay in the market, like it is in the case of *Aker Solutions* in Brazil, it is in its own interests to support the local development and to contribute to creating a better and easier environment for its own operations. In accordance with a company's vision (Communication on Progress, 2011), *Aker Solutions* is strongly committed to building on local capabilities in the markets it enters. A company shares a belief that it benefits from drawing on the local resources to create jobs, customize product strategies, and work with local governments.

4.4.2. Being established as a local company in Brazil

The common saying goes that if one wants to succeed in Brazil, he/she has to be there. According to one of the respondents, the goal of *Aker Solutions* in Brazil is to have a local organization there and utilize it whenever possible. Interacting with a client from abroad is seen as a difficult and unfavorable solution. One has to understand the local market and the local way of doing business in order to deal with the contracts successfully. Executing business in Brazil and in Norway could be very different, and patterns of business behavior are, at times, difficult to match. Therefore, it is very important to deal with Brazil as close to the market as possible.

With regard to this, from the start *Aker Solutions'* strategy for this country has been to manufacture locally. One of the managers noted that, taking into account the Brazilian tax and local content regimes, the natural decision was to establish a number of production facilities in the country. These facilities cover a certain part of the company's product line. However, if delivering the contract requires more capacity than *Aker Solutions* have available locally in Brazil, the company has to outsource the work to sub-suppliers, both from the local market and abroad.

The necessity to have the local manufacturing facilities is partly dictated by the prospect of a rise in the required minimum local content levels. One of the respondents explained that his

entity in Brazil is responsible to deliver, among other equipment, subsea control systems, which the company is currently importing from the United Kingdom. However, the strategy is to develop *Aker Solutions*' own capability for controllers in Brazil, due to the fact that in two or three years the LCRs are expected to be lifted. Therefore, in order to meet them, the manufacturing would have to be done locally. With this in mind, *Aker Solutions* is currently building a new facility where the abovementioned subsea control systems (along with other equipment) could be manufactured.

In this way, the company is showing its willingness to invest in Brazil and to develop the industry in the country. As stated by one of the respondents, the LCRs are manageable as long as the foreign company has its manufacturing processes, its engineering processes, and its managerial capacity are established locally in Brazil. Without that, to run a successful operation in the country for a company like *Aker Solutions* would be very difficult.

4.4.3. Strategic considerations on where to produce

For a foreign company in Brazil, one of the central considerations with regard to meeting the LCRs has to do with making an important decision on what to manufacture or buy locally in the Brazilian market and what is possible to outsource abroad.

With regard to this, *Aker Solutions* is applying a strategic approach to balance the imports with the local production and procurement in order to achieve the required level of the local content at the best possible price-quality-time ratio and with the lowest risk. One of the respondents provided a following example. For instance, *Aker Solutions* needs to buy two items: less sophisticated item A and more sophisticated item B. If the company is able to find a good price on the item A locally, it will be possible to procure item B from the international market. By buying item A in Brazil, *Aker Solutions* is able to save some money and invest into item B, which is a more complicated equipment that is not easily available in the Brazilian market.

The abovementioned situation stems from the fact that, due to the limited capacity of the local Brazilian market, some materials, goods, or services are more difficult to procure locally than the others. For example, according to the respondents, some special steels are not available in Brazil, so the company has no choice but to import them from abroad. In the same way, the lack of certain required competences in the local market implies that some work has to be done outside Brazil. Alternatively, if certain mechanical components are widely produced locally and are sold at acceptable prices, *Aker Solutions* makes sure to buy them in the country. A good balance has to be found between what should be imported and what should be done locally in order to find the best commercial solution. Such considerations have to be taken into account

when trying to figure out an optimal way for meeting the level of local content required by the contract.

4.4.4. Establishing good relationships with clients and suppliers

The pressure to meet the LCRs creates a necessity for foreign companies to interact with the local supplier chain in Brazil. This is very often associated with such challenges discussed earlier as unreasonably high prices and delays, which consequently contribute to the rise of the overall costs of the projects. Furthermore, dealing with the clients could also be associated with some difficulties, the major of which being a certain lack of clarity regarding the necessity to provide the local content in a particular project. Naturally, many foreign companies like *Aker Solutions* are seeking the ways to deal with this issue.

With regard to the high level of local prices, one of the respondents commented that international companies cannot accept prices that are excessive compared to the international market, if one takes into account that the purpose of having a LCRs is the establishment of a sustainable and competitive national industry. However, he further noted that negotiating with the local suppliers and sub-suppliers on trying to get the prices down to the level acceptable for the company is often very challenging, and that the company has not always been successful in this regard. For *Aker Solutions*, as it is for any other company that wants to make a profit, this situation is still providing ground for polemic discussions.

The delays in project schedule are presenting another part of the challenge that is associated with the need to interact with the local supplier companies. When asked about the possibility to fine a sub-contractor in case it does not meet a predefined production schedule, one of the managers replied that it is possible but would not necessarily help, due to the fact that the subcontractors would claim they are not able to fund further work and would simply stop operating on the order. Moreover, he mentioned that the legal system in Brazil does not always function smoothly, therefore, appealing to it would likely not solve the problem but result in further losses for the company.

According to the respondents, one of the main strategies to cope with the situations like the ones described above is to work towards establishing trust and good relationships with both clients and suppliers. One of the respondents said that having good relations with the people who are in charge of making decisions will generally contribute to smooth-running operations.

Indeed, as discussed in my internship report on the cultural issues in the process of internationalization of Norwegian companies, the importance of personal relations in doing business is much stronger in Brazil than it is in Norway. As noted by Terje Staalstrøm, the

respondent from BNCC, sometimes establishing good personal relations before entering a negotiation could be critical to the overall outcome of this negotiation. Therefore, it is crucial to invest in long-term relationships with the Brazilians with whom one does business together. In line with this statement, *Aker Solutions* is seeking partners it could establish long-term working relations with. In this way, a combination of the company's own business resources and those of the trusted partners' could be seen as one of the important strategies that *Aker Solutions* follows in Brazil. With regard to this, one of the respondents noted that it is not the best idea to always look for the suppliers who can provide the solution that is the cheapest at the moment. The company has to find a way to establish long-term relations with certain partners in order to get access to their capacity and to be more predictive on the prices and the costs.

Adding to this, another respondent noted that establishing good connections enables the company to acquire valuable business intelligence information which otherwise would be difficult to obtain. Moreover, maintaining close relations with partners helps the company to develop a better understanding of their strategy, which is necessary in order to influence them for the benefit of both the company itself and the overall project.

It has to be noted that being able to speak Portuguese in Brazil could be a great asset in building trust and relationships with local companies. One of the respondents commented that knowing the language "opens doors". If a person can talk and understand Portuguese, he/she is provided with a significantly bigger amount of possibilities in Brazil. The respondent mentioned that one could survive in Brazil without speaking the local language; however, this knowledge becomes a great asset and makes a big difference in a long term perspective.

With the aforementioned in mind, it is possible to conclude that doing business with local clients and suppliers in Brazil is often associated with considerable challenges. However, it is important to manage this interaction in the best way possible. Establishing trust and good relationships with the key partners could be seen one of the essential elements in *Aker Solutions'* strategy for meeting the LCRs in Brazil.

4.4.5. Dealing with the local labor market

Employees constitute a core of any company. At the same time, as discussed earlier, foreign companies are faced with a very challenging situation in the Brazilian labor market in the petroleum sector. The lack of skilled engineers and managers with relevant industry knowledge and experience could be potentially solved by filling the positions in the Brazilian subsidiaries with competent expats or having engineers work with the Brazilian market from abroad.

However, the discussion in the first part of this chapter showed that, due to a number of reasons, this would not be a viable solution.

One of the main strategies *Aker Solutions* applies in Brazil with regard to this matter is having the local organization based on the local people who understand the local business environment. According to one of the respondents, this is a necessary prerequisite in order to develop a successful strategy on how to work on the local content issue. On one hand, in this way the company is contributing to the development of the local workforce in the country. On the other hand, opting for this approach presents a number of benefits for the organization itself. Another respondent commented that a foreign company in Brazil requires somebody who understands Brazil, the local business and culture, and the way things work there, otherwise it will be difficult to operate in this market. According to him, typically in Brazil a very important positioning is going on *long before* a final decision is made and the contract is signed. This could often be frustrating for the foreigners who are not very familiar with the Brazilian business culture. In such situation, utilizing local people is a good solution. “*In Brazil you need to be a Brazilian,*” concluded one of the respondents.

Furthermore, it is important to note that *Aker Solutions* is committed to developing the capabilities of the local workforce. In order to bridge the gap in relevant skills and experience required from its Brazilian employees, *Aker Solutions* provides a number of training programs. For example, the company takes local university graduates and puts them on a training program for a year before they can work with projects. As noted by one of the respondents, the university education, in general, is on a good level in Brazil. Moreover, education has a very high status in the Brazilian society, and local people are very willing to educate themselves. For example, it is not uncommon to find Brazilians with two or three degrees, even at the Master level. This respondent concluded that if a company has a good training program, it is easier to succeed in terms of complying with the LCRs in the country.

At the same time, having a limited number of expats is seen by *Aker Solutions* as a beneficial addition to its Brazilian subsidiaries, where the majority of the employees are local. There are two main reasons for this approach. The first is associated with the need to transfer the knowledge and experience. One of the managers said that the company has an exchange program, and whenever a certain expertise is needed, it is possible to bring people to Brazil for a limited amount of time. Moreover, it could go the other way around, when Brazilians are sent to Norway, the USA, or the United Kingdom. The second reason to bring in expat experts is to connect the way of working in Brazil to that of the main office in Norway. Therefore, the company sees as beneficial to have some expats in the Brazilian organization, or at least

Brazilians with a lot of international experience, who will be able to connect successfully between Brazil and Norway.

Creating a local organization that combines the majority of local employees with a limited number of expats, appears to be an effective approach for the Brazilian market. On one hand, the foreigners could assist with the training of the Brazilian employees, facilitate the transfer of relevant knowledge and experience, and maintain the overall corporate business culture in the Brazilian organization. On the other hand, having the majority of the employees being Brazilians is crucial from the cultural point of view. The locals are naturally familiar with the Brazilian culture and general environment of the Brazilian business, so they can orientate themselves in many business situations much faster and easier than foreigners. Therefore, local staff is of a great value to a foreign company that runs a business in Brazil, as it is an indispensable asset in building relations and networks.

4.4.6. Negotiating with clients and authorities

According to the GPN approach, by entering a foreign market, firms could become involved in the intricate process of negotiation and bargaining with the local state regarding an access to the local market and resources. In the case of Brazil, it is sometimes possible for foreign companies to negotiate with the local Brazilian authorities, for example ANP, on the local content levels. Due to the lack of certain competences and knowledge in the Brazilian oil and gas sector, some companies are able to bring down the required level of the local content for the particular project, if they are able to provide unique solutions. As exemplified by one of the respondents, if the equipment a company provides is new, the level of the local content would typically be fairly low. In fact, it could be as low as 20%, if the Brazilian local market is completely undeveloped in terms of a certain product. On the contrary, in case a company provides the equipment that is very well developed in Brazil, the local content level would be closer to 70%.

However, in case of *Aker Solutions*, the company normally is not able to reduce the local content requirement for the whole project. A possibility exists to negotiate with the clients on what part of the work on the project could be outsourced to the international market and what should be done locally. However, it is still done within fulfilling the overarching percentage of the local content set in the contract.

At the same time, *Aker Solutions* has been involved in meetings with *Petrobras* and some of the government agencies in order to influence them on certain aspects of the local content policy in Brazil. One such issue is increasing the value of the engineering work in the local content calculations. The problem could be exemplified with the following: if a foreign company

needs to deliver a separator, they could buy the know-how from abroad, fabricate it locally and, by doing so, reach the required level of local content; however, the knowledge is not being transferred to Brazil, it is still abroad. One of the respondents stated that, if Brazilian government wants to develop technology in the country, the “*thinking part*” has to be valued more comparing to fabrication with regard to the calculation of the local content. With this in mind, *Aker Solutions* has tried to influence the government to put more value on the fact that the company utilized engineering skills locally in Brazil. According to the abovementioned respondent, this type of negotiations is a very long process; however, he has heard that some parts of *Aker Solutions*’ proposals have already been implemented.

With this in mind, it is possible to conclude that, by providing their comments and suggestions, foreign companies are able to influence, at least in part, the formulation and revision of the local content policy in Brazil.

4.4.7. Dealing with corruption

As noted earlier, *Aker Solutions* has not met any significant problems with corruption in terms of complying with the LCRs in Brazil. This could be attributed to the fact that the company has a very clearly stated zero tolerance for corruption. *Aker Solutions*’ policy regarding this matter goes as follows:

“We build a culture that value honesty, integrity, and transparency and we encourage the same behavior among our partners [...] We believe that supporting a rule-based system with transparency, fair competition, and equal treatment is of benefit both to our company, to the sustainability of our industry, and to the society that surrounds us.”

(Communication on Progress, 2011).

With regard to this, all company’s business units and employees have a responsibility to oversee that their conduct and activities are aligned with *Aker Solutions*’ Business Ethics Policy and the Code of Conduct’s guidelines for bribery and corruption. Moreover, all the employees are provided with information and training on how to avoid being involved with corrupt practices. In addition, there are annual integrity risk assessments when all the business units within *Aker Solutions* are required to submit a self-assessment questionnaire on the issue.

Discussing the level of success of their ethical compliance policy in Brazil, one of the respondents commented that *Aker Solutions* provides regular trainings for the employees, as well as holds meetings with its suppliers, in order to remind about the company’s ethics. There are a

number of instruments that *Aker Solutions* employs with regard to suppressing unethical practices. For example, the company has a very active whistleblowing system. One of the respondents noted that unethical practices are being reported through this system; therefore, it is working. It needs to be noted that as all reports are investigated, and not all of them are related to compliance issues. It is possible to conclude, therefore, that *Aker Solutions'* methods to fight unethical behavior could be considered successful.

4.5. Final remarks on the Aker Solutions' experience with the Brazilian local content requirements

Summing up, the issue of the local content in Brazil for *Aker Solutions* is two-sided. On one hand, the respondents mentioned that such requirements could be seen as rather positive, as the company receives an opportunity for firmer establishment in the market. On the other hand, the LCRs at the same time present a risk factor that creates certain challenges and could potentially undermine the commercial success of operations in Brazil, if treated wrong. As noted by one of the respondents, meeting the LCRs in Brazil is not cheap.

Moreover, as mentioned by some of the respondents, the future in Brazil is unclear, and it is hard to predict what is going to happen. For *Aker Solutions*, as well as for many other foreign companies in the market, not knowing is a challenge. The respondents expressed the wish to see some changes for the better in Brazil, both regarding the local content regulations itself and the overall development of the local petroleum industry. One of the managers commented that there are big discussions going on in Brazil, as well as within *Aker Solutions*, and many companies are hoping for some relaxation of the regulations. The country has to get back on track with a number of big projects that have been delayed for years. In order to do so, Brazil is dependent on the help and assistance of the international companies. However, tough regulations on the local content could easily scare away good companies.

Another respondent added that the eagerness among many Norwegian companies to do business in Brazil has decreased, compared to the attitudes that prevailed a couple of years ago. After being in Brazil and seeing the difficult situation with prices, suppliers and requirements, some Norwegian companies decided to reduce their level of activity in this market. The respondent added that, if one tries to find good examples of Norwegian companies which have really achieved a great success and made money in Brazil on their business, one can find that there are very few of them. Nevertheless, *Aker Solutions* sees this country as a very interesting market with a big potential. Therefore, the company expresses strong commitment to Brazil and,

therefore, has developed a strategy for a long-term presence there which includes, among other aspects, the ways to manage the Brazilian LCRs.

4.6. Remarks on the additional organizations

As noted in the previous chapter, my original intention for this thesis was to do a multiple-case study in order to analyze experiences of several Norwegian organizations regarding the LCRs in the Brazilian oil and gas sector. The information has been obtained from six organizations currently represented on the Brazilian market. Four of them are SMEs which provide products and services to the petroleum industry. Another two are research entities, one of which is an independent organization, while the other one is a part of a bigger company. However, due to the revision of the research strategy, the main focus of the study was shifted to *Aker Solutions*. Nevertheless, it would be beneficial, in my opinion, to provide an element of comparison to this research by contrasting the experience of *Aker Solutions* with that of the other organizations. The following presents a short summary of some relevant findings which have been elucidated from these additional interviews.

First of all, the organizations' entry mode to the Brazilian market has to be mentioned. Due to the frequent lack of internal resources necessary for internationalization, SMEs often prefer to enter a new market gradually (Johanson and Vahlne, 1977), for example, by starting with an agent representing them. Out of the four respondent companies, two are currently operating in Brazil through the agents. It has to be noted, that one of them is planning to establish a wholly-owned subsidiary in the country later this year, while another one has decided to remain using its agent. A respondent, from the latter company explained the reasoning behind this decision in the following way:

"We have talked to some lawyers, and they explained that, due to the nature of the services we provide, there is no need for us to establish a subsidiary in Brazil. What we supply is mainly technology, software. It is little manpower intensive, so we don't really require any employees working for us in Brazil. In this case, being present in this market through an agent is enough for us."

The two remaining companies have their offices established in Brazil. The same applies to both of the research entities.

As the interviews have demonstrated, none of the respondent organizations consider the LCRs in Brazil as a challenge to their operations in this market. The finding goes in contrast with

that elucidated from the discussions with the respondents from *Aker Solutions*. Two possible aspects could contribute to this.

The first one has to do with the *mode of entrance* some of the companies have chosen for the Brazilian market. As mentioned above, two of the respondent companies are represented in Brazil by agents. This means that they are involved in primarily export activities towards the Brazilian market, without establishing a physical presence there. Keeping in mind that the LCRs imply doing local procurement of supplies and services, the two abovementioned companies do not have to deal with the requirements regarding the local content in Brazil.

The second reason and, in my opinion, the most important one stems from the *nature of the services* the respondent companies provide. All of them focus on high technology solutions for the petroleum sector, which are mainly provided in the form of software and instrumentation, as well as through human-based services such as risk inspection, consultancy, etc. This type of knowledge-intensive products and services are typically not provided by the local Brazilian suppliers. Indeed, one of the respondents said that his company entered the Brazilian market following the requests of its clients who had not able to find services with similar quality locally. With this in mind, foreign companies providing unique niche solutions are able, at least in the initial period, to maintain R&D and manufacturing operations in their home country. In this way, they are not involved with the local production and, thus, do not have to deal with the local Brazilian supplier market, which is the major source of problems with regard to the LCRs in Brazil. The respondent from the company which is going to open its office in Brazil later this year commented on the prospect of complying with the LCRs in the following way:

“The sensor we produce is made only in one place in Norway, it is a unique product. Around this sensor we have a number of different services. For example, we need people to use our sensors to monitor, so we provide services as well. When we will establish our own office in Brazil, we will be doing the local content for services, by using local people, not for the product itself, which is going to be manufactured in Norway and imported to Brazil.”

It has to be noted however, that one of the respondent companies is involved with some minor manufacturing in Brazil. At the same time, the company has not experienced any problems with the local suppliers with regard to this activity:

“Whenever we need to manufacture certain kind of steel structures in Brazil, we do it through the local subcontractors. We do not do this type of work a lot, and it is not very complex or sophisticated, so we haven’t experienced any problems with fabricating in Brazil so far.”

This goes well with an explanation given earlier by one of the managers from *Aker Solutions* regarding a high level of competence in the so-called “black service”, such as welding or steel work, among local Brazilian companies.

With the aforementioned in mind, it is possible to conclude that, in contrast with *Aker Solutions*, the requirement for local production in Brazil does not bear any significant implications for the other respondent companies. In this way, they do not have contractual commitments to procure a certain percentage of goods and services locally. Therefore, with regard to the definition of the local content in the broad sense that was outlined in the second chapter, they contribute to the local economy by employing local people.

Two of the respondents acknowledged that the situation in the labor market in the Brazilian petroleum sector is challenging: it is more dynamic, and people shift jobs more often. One of the respondents mentioned that the loyalty to the employer is not very high, and it could be a problem for the company to hold on to the employees. Another respondent from a different company expressed the same point of view by saying that a turnover in their Brazilian subsidiary is much higher comparing to Norway. Moreover, he commented on the high level of salaries of managers, as well as on the general challenge of finding good professionals with relevant experience and competence at an acceptable price. In addition, this respondent referred to the difficulty of acquiring good employees who can speak English. According to him, this problem is especially prominent among technicians, while engineers, in general, have better foreign language skills.

To sum up, the necessity to hire locals is associated with some difficulties for a number of respondent companies. In this regard, their experience is similar to that of *Aker Solutions*. However, this alone does not make them perceive the LCRs as a challenge.

Similar to the respondent companies, both of the research entities interviewed do not see the Brazilian LCRs as a problem either. Due to the nature of their activities, which is different from that of the service companies, research entities are not subjects to the LCRs regarding local production and procurement that affect the latter. At the same time, research entities have to comply with certain requirements, which are not the LCRs per se, but which originate from the same philosophy of doing as much as possible in Brazil. According to these, a major portion of research has to be conducted at accredited institutions in Brazil, mainly the universities or SINTEF, which, according to one of the respondents, is the only foreign institution that has received accreditation to do research in Brazil. In addition, a respondent from one of the organizations said there is a rule stating that the funds they receive from ANP have to be used in Brazil. This could present some challenges:

“We have very good researchers in Norway, and it would be super natural for us to utilize them. It is actually not forbidden, but there are rules for paying for it. You cannot send money out of Brazil. It makes it complicated immediately.”

Despite the fact that none of the respondent organizations perceive the LCRs in Brazil as a serious issue affecting their operation in the country, they expressed awareness that these requirements could present a challenge for other companies operating in Brazil. They acknowledge the general lack of capacity and competence on the Brazilian market and that it could present a major risk for foreign companies. According to some of the respondents, the lack of capacity makes it difficult to find good employees and drives the costs up. Moreover, one of the respondents from the research entity expressed a wish that Brazilian regulations in general should be more flexible. In this, the additional respondent organizations correspond to *Aker Solutions*.

Finally discussing the issue of corruption, the majority of the organizations interviewed did not experience any problems regarding this matter. However, it has to be noted that one company was actually exposed to the problem:

“Brazil is a very corrupt country. The oil companies are clean in this sense, but when it comes to the supplier industry it is still lagging behind. We got requirements from some sub-suppliers for some cash transfers. We said it is not how we do business, so they said its ok and agreed to do it the normal way. But there were also some who kept insisting, so we just walked away.”

This respondent added that this problem is usually connected with smaller enterprises, while big and mature companies are usually very strict on the matter of corruption.

With the aforementioned in mind, it is possible to conclude that the Brazilian LCRs do not affect the foreign organizations operating in the market in the same way. First of all, the entry mode matters. If a company operates through an agent and is not physically established in the country, it relies on the exports and is not required to comply with the LCRs for local procurement of goods and services. Due to the high import taxes, this raises the total cost of the product or service for the client in Brazil, but it does not affect the company once the client has agreed to the prices. In a similar way, the majority of the additional respondent companies rely primarily on export of their products from Norway, while being physically established in Brazil. It has to do with the high-tech nature of their products and services (for example, software). In this way, the only requirements connected to the local content they have to comply with are the

contribution to the local workforce development, i.e. hiring local employees. Furthermore, the research entities, due to the nature of their operations, do not have to comply with LCRs in the narrow sense at all. The requirements for such organizations stem from the same logic of doing as much as possible in Brazil; however, they cannot be seen as the same the LCRs the companies have to comply with. In this way, it is possible to conclude that, depending on the way they enter the Brazilian market and the nature of their operations, products and services, different companies possess different experiences regarding the LCRs in Brazil.

Chapter 5: Conclusion

The modern economic relations are characterized by the increasing internationalization of firms, and the petroleum industry is not an exception. The present thesis has explored one of the aspects of the internationalization process, namely the need for petroleum service companies to comply with the LCRs in the host-states. The study has dealt with the experiences of the Norwegian organizations with the issue of the LCRs in the Brazilian petroleum sector. The main focus has been on the Norwegian transnational company *Aker Solutions*, the experiences of which have formed the core of the present research. In addition, a brief insight into the experiences of four Norwegian petroleum service SMEs and two research entities has been explored to provide a contrasting perspective to *Aker Solutions*.

The theoretical foundation of the research has been based on the Global Production Network approach developed by a number of researchers from Manchester and their collaborators (e.g. see the works of Coe, Dicken, Henderson, Hess, Yeung). This theoretical framework emphasizes the importance of the relationship between a firm and a state in the modern-day international economic relations. As this approach is very extensive, the present thesis has chose to apply just a limited number of relevant aspects, namely the notions of territorial embeddedness and power. One of the main advantages of the GPN framework for this thesis is that it acknowledges the centrality of the state power, as well as the fact that the internationalizing firms need to adapt their business strategies to the rules and regulations imposed by the local governments in the host-states.

In terms of the research strategy, the present study has been based on the qualitative framework. The main body of data was collected by means of semi-structured interviews with the employees at *Aker Solutions*, as well as at the six additional organizations mentioned above.

One of the main benefits of this research is that it has investigated the issue of the LCRs from the point of view of focal firms, rather than from the perspective of the resource-holding state. This can be considered a valuable contribution to the academic literature on the topic, which has been lacking this type of angle on the problem.

5.1. Summary of the findings

As mentioned above, the core of the research was formed by the investigation of the experiences of *Aker Solutions* with the LCRs in the Brazilian oil and gas industry. The study made an attempt to answer two research questions:

1. *What challenges has Aker Solutions faced in Brazil regarding the LCRs in the Brazilian petroleum market?*
2. *Which strategies has Aker Solutions applied in order to adjust to the LCRs in the Brazilian petroleum market?*

The section of the thesis that was providing a background for the empirical part of the research has outlined six potential problems that foreign companies could meet when trying to comply with the Brazilian LCRs:

1. Lack of capacity and competence of the Brazilian petroleum sector
2. Lack of competitiveness of the Brazilian petroleum sector
3. High price level and limited performance capacity of the sector
4. High costs of qualified labor and lack of it
5. Frequent change of rules and regulations regarding the local content
6. Corruption

The interviews at *Aker Solutions* showed that the company experienced certain challenges of various degrees with regards to five aspects out of six. The only exception was the issue of corruption: *Aker Solutions* has a very strong ethical compliance policy and a zero tolerance for corrupt practices which help the company to manage successfully any problems in this regard.

Answering the first research question resulted in the first important finding of the present thesis: the root of all the challenges experienced by *Aker Solutions* with regards to the Brazilian LCRs lies in the overall underdevelopment of the petroleum sector in Brazil (*see Figure 5.1*). This is a big political issue in the country and, according to the GPN approach, the problem naturally trickles down to affect those foreign firms which are deeply embedded in the country's industry (like *Aker Solutions*). First and foremost, this underdevelopment is manifested in the poor capacity in certain areas within the industry, as well as in the general low level of competitiveness of the local Brazilian petroleum sector companies. These problems have negative implications for the Brazilian supply sector (manifested in the lack of competence in certain areas, the prices being higher than in the international market, and the high risk of delays) and for the Brazilian labor market (manifested in the high salaries and the lack of skilled professionals).

Furthermore, the overall underdevelopment of the oil and gas sector in Brazil is seen in the fact that the rules and regulations governing the local content issues are characterized by certain lack clarity: the way local content is calculated is not always logical, and the LCRs are subject to a rather frequent change. This naturally affects the strategic planning of the company that operates in such environment.

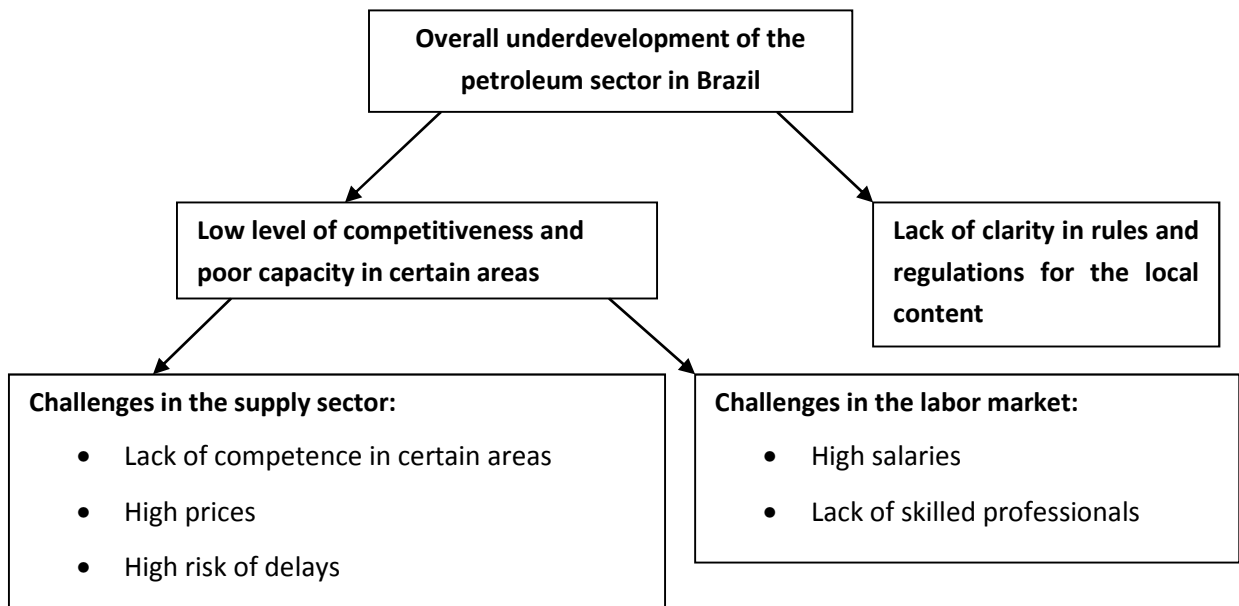


Figure 5.1. Challenges that Aker Solutions has met with regard to the LCRs in the Brazilian petroleum sector.

All the issues mentioned above create certain challenges for *Aker Solutions* in terms of its need to comply with the LCRs in the Brazilian petroleum sector. Moreover, these aspects are associated with the rise in the overall costs and the increased risk of doing business in this country. However, recognizing all the aforementioned problems, *Aker Solutions*, nevertheless, sees Brazil as a very interesting market with a big potential. Therefore, the company has developed a strategy for a long-term presence there which includes, among other aspects, the ways to manage the Brazilian LCRs.

The second important finding of the present thesis stems from the answer to the second research question and is related to the steps *Aker Solutions* takes in order to manage the LCRs in the best way possible and to mitigate the potential negative effects they can have on the Brazilian operations of the company. The company's strategy could be described as comprised of several levels.

First of all, the overall strategy is based on contributing to the development of the Brazilian petroleum industry by investing in building production facilities and by putting an emphasis on local people and building local competence. In addition, *Aker Solutions* is aiming at a continuous development of its entity in Brazil, and it is positioning itself as a Brazilian company. As mentioned by one of the respondents, when a company has the LCRs to comply with, it requires the local organization.

Second, the company has its supply-chain strategy where it pinpoints which supplier it wants to cooperate with and develop. In its operations in Brazil, *Aker Solutions* follows the company's procedures for subcontracting. For example, as mentioned by one of the respondents, a very good research has to be conducted before committing to obligations with any local

company. Furthermore, *Aker Solutions*' procurement procedures are focused on finding the balance between imports and local production and procurement. In addition, the company is committed to building good relationships both with its clients and its sub-suppliers in the Brazilian market.

Third, *Aker Solutions* sees negotiations as one of the means to adjust to the LCRs in Brazil. The company negotiates with local suppliers regarding getting their prices down closer to the international level. In addition, the company also attempts to discuss with *Petrobras* and the Brazilian authorities in order to influence them regarding various aspects of the local content policy.

Fourth, respondents mentioned that it is very important to constantly monitor the situation and exercise control over what is happening. Moreover, the company has a very competent team who works on finding the solutions to the arising challenges under the regulatory framework that exists in Brazil nowadays.

Finally it has to be mentioned, that all these is done with the overarching commitment to oversee the integrity in all the company's actions.

To sum up, in general, *Aker Solutions*' local content strategy can be characterized by having a significant degree of success. The respondents recognized that there is always a room for improvement, but the company has been maintaining the management of the local content issue on a good level. *Aker Solutions*' strategy is able to protect the commercial interests of the company itself, as well as to contribute to the economic and social benefits for Brazil.

The additional interviews with four Norwegian petroleum service SMEs and two research entities showed that their experiences differ significantly from those of *Aker Solutions*.

First of all, both of the research entities interviewed do not see the Brazilian LCRs as a problem. Due to the nature of their activities, which is different from that of the service companies, research entities are not subjects to the LCRs regarding local production and procurement that affect the latter. The requirements for such organizations stem from the same logic of doing as much as possible in Brazil; however, they cannot be seen as the same the LCRs the companies have to comply with.

Similar to the research entities, the interviews have demonstrated that none of the respondent SMEs consider the LCRs in Brazil as a challenge to their operations in this market either. The study found two possible reasons for this:

The first one has to do with the *mode of entrance* some of the companies have chosen for the Brazilian market. Two of the respondent companies are represented in Brazil by agents and, therefore, are involved primarily in export activities towards the Brazilian market, without establishing a physical presence there. Keeping in mind that the LCRs imply doing local

procurement of supplies and services, the two abovementioned companies do not have to deal with the requirements regarding the local content in Brazil.

The second reason stems from the *nature of the services* the respondent SMEs provide. All of them focus on high technology solutions for the petroleum sector, which are mainly provided in the form of software and instrumentation, as well as through human-based services such as risk inspection, consultancy, etc. This type of knowledge-intensive products and services are still very much underdeveloped in the local Brazilian market. Therefore, these companies are able, at least in the initial period, to maintain R&D and manufacturing operations in Norway. In this way, they can avoid being involved with the local production and, thus, do not have to deal with the local Brazilian supplier market, which is the major source of problems with regard to the LCRs in Brazil.

With the aforementioned in mind, the only requirements connected to the local content these companies have to comply with are the contribution to the local workforce development, i.e. hiring local employees. Being involved with the local labor market has resulted in a number of difficulties for some of the companies interviewed. In this case, the difficulties are very similar to those met by *Aker Solutions* and include the high level of salaries, the difficulty of finding skilled professionals, the high employee turnover, and the low level of loyalty to the employer.

With the aforementioned in mind, the third important finding of the thesis is related to the fact that, depending on the way they enter the Brazilian market and the nature of their operations, products and services, different companies are differently affected by the LCRs in the Brazilian petroleum sector. The more involved the company is with the local market, the deeper embedded it is in the local industry, the stronger will be the influence of the LCRs and the bigger the risk of meeting the challenges connected to complying with them.

5.2. Recommendations for further studies

As it was stressed several times throughout this work, the academic literature currently lacks the research on the LCRs in the petroleum industry that looks at the issue from the point of view of the focal companies and not the resource-holding states. This situation calls for more research on the experiences of the internationalizing companies with the LCRs in various petroleum-holding states.

With regard to the topic of this particular thesis, I could suggest to make an in-depth study that would focus specifically on the experiences of the Norwegian petroleum service SMEs with regard to the LCRs in Brazil.

In addition, it would be interesting to conduct a research on another transnational petroleum service company (maybe, from a different country of origin, than Norway) and compare its experience with the Brazilian LCRs with those of *Aker Solutions*.

Finally, one more suggestion would be to make a research on the same topic of LCRs in Brazil focusing on the operator companies, like Statoil, for example. The nature of their activities is different from that of the service companies and, therefore, the way they are affected by the LCRs would be potentially different.

To sum up, the current underdevelopment of the academic literature on the topic of the local content in petroleum industry with regard to the firm-perspective provides vast opportunities for further research that is necessary in order to escape the one-sided approach to the topic and to create a fuller and more objective picture of the local content issue in the oil and gas industry.

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