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Internationalisation of Trondheim Petroleum Service Companies into the United States

Master's Thesis in MSc Globalisation, Global Politics and
Culture

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Abstract

Globalisation has resulted in the intense interconnection of the global market. With the invention of high communication and transportation systems together with the numerous opportunities out there, firms are compelled to internationalise as competition gets tight both at domestic and international markets. This thesis examines the internationalisation pattern of Trondheim petroleum service companies. The strategies adopted by these companies are also examined. It further looks at the roles played by external facilitators in the internationalisation of firms. The study adopted a multiple case study approach where six companies were studied. The Uppsala internationalisation model and the born globals perspective forms the theoretical backbone of the study. The internationalisation process of service companies in the Trondheim petroleum industry is a complex process. Their internationalisation process bears some characteristics of both the Uppsala Internationalisation model and the born global perspective.

External facilitators play a significant role in the internationalisation of firms. They contribute by assisting companies in building competence, creating knowledge, financial support, accessing markets, competence promotion and establishing networks. Although Innovation Norway and INTSOK provide these services to Trondheim petroleum companies, the experiences are different for the companies.

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Chapter 1: Introduction

Today's world has often been explained by the term globalisation. The term was embraced from 1990s widely by the public and has since skyrocketed to terminological stardom (Osterhammel & Petersson, 2005). The globalisation of the world's economy and the intense competition, it creates serves as a stimulant for companies to seek ways to internationalise and contribute significantly to the economic development industries, productivity and nations (Korsakienė & Tvaronavičienė, 2012).

Globalization at a broad level is an increase in the impact of human activities that span across national borders. The integration and interconnectedness of the World economy has intensified with the advancement in communication and transportation technology. This technological advancement has resulted to an increase in interactions across national boundaries making the internationalisation of firms almost always possible. According to Dicken, a manifestation of this is a change in global economic trend where trade has grown faster than output whereas Foreign Direct Investment has grown faster than trade primarily because of the drastic increment of the activities of Transnational or Multinational Corporations (Dicken, 2011).

Foreign direct investment is “the acquisition of Shares by a firm in a foreign based enterprise that exceeds the threshold of 10 percent, implying managerial participation in the managerial participation in the foreign enterprise”(Goldin & Reinert, 2012 :81). This has been pursued mostly by Transnational Corporation in the form of Global production Networks as posited by Dicken (2011). He further on defines Transnational Corporation (TNC) as “firms that have the power to coordinate and control operations in more than one country, even if they do not own them”. This point has been emphasized by Johnson and Vahlne (1977) stating explicitly that one of the most visible characteristics of economic globalisation is the drastic increment in the number of multinational firms that has operations in more than a country.

Internationalisation process traditionally has been alienated to Large Scale Enterprises (LSEs) but in recent developments, attention has increased among academics and policy actors on the internationalisation of Small and Medium-Scale Enterprises (SMEs). Internationalisation can now be seen as a very important strategy for achieving the ability to compete in trade and among firms. The success of SMEs especially those in pursuance of a niche product or strategies in their home markets may depend on their capabilities and abilities to internationalise. The expansion of SMEs internationally often follows a different pattern than

the patterns described in traditional studies (Carlsson & Dale, 2011; Coviello & Munro, 1997; Korsakienė & Tvaronavičienė, 2012). Internationalisation for SMEs is mostly described as a distinctive process in which each internationalisation venture is described by management as distinct and individual (Hollensen, 2011).

The globalisation of business activities particularly technology markets has the implication that Small and Medium-Sized Enterprises in industry sectors are subjected to globalisation forces that may expose them to any type of cross-border business activities (Jones, 2001).

As has been indicated above in the definition of FDI, FDI is one aspect of a firm's international engagement but this work focus on the internationalisation process of SMEs in Mid-Norway, Trondheim to be specific and the definition of SMEs is based on the definition by the European Commission¹. A small firm according to the European Commission law on Enterprise and industry is a firm that has less than 50 employees whilst a medium firm on the other hand is defined as a firm which have less than 250 employees.

1.1 Internationalisation of Norwegian Petroleum Industry

The Norwegian petroleum industry is the biggest and currently the most important sector of the economy. It has made immense contribution to the building of a social welfare state as a result of the huge amount of revenues raised by this sector. Norway was ranked the third largest exporter of gas and the tenth largest exporter of oil in 2013. In the same year the world's fifteenth largest producer of oil and sixth largest producer of gas (Facts, 2014: 9-13). This has been verified from the diagram below showing oil and gas production according to countries in 2012.

¹ <http://ec.europa.eu/>

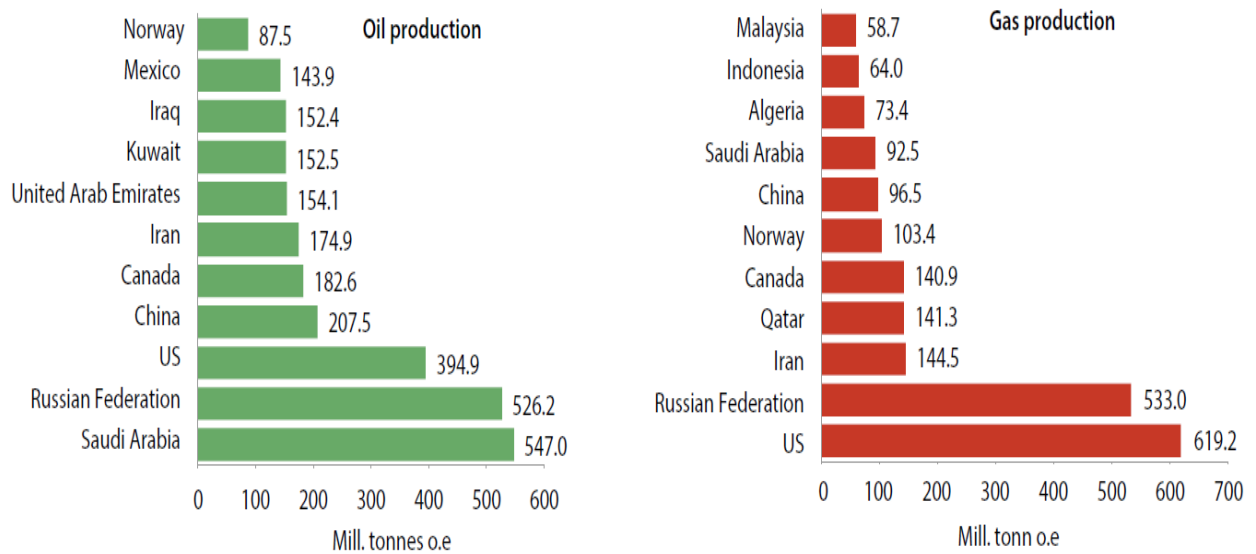


Figure 1: Oil and Gas production by country, 2012 (Source: BP Statistical Review, 2013 in Facts, 2014)

Over forty years of its development, Norway is noted for its highly skilled and competitive petroleum related supply and service industry internationally. The high tech and specialised service and supply sector employs 125000 employees as at 2012. The service and supply industry in 2012 had a total revenue of NOK 461 billion indication its importance to the Norwegian economy (Facts, 2014 :54; Zimmet, 2000).

About 40 per cent of the total revenue (NOK 461 billion) from the service and supply industry was generated from international market that is about NOK186 billion. This affirms the significance of international market to the industry. International revenues has experienced about 11 per cent increment annually. Among the most important international market in 2012 were South Korea, the UK, Brazil, the USA and Singapore (Facts, 2014: 56).

The internationalization of Norwegian petroleum industry has been of higher priority during the last decade. The goal has been to utilize the knowledge, technology and expertise that are developed on the Norwegian continental shelf (NCS) internationally, thus reinforcing the basis for long term growth and development of the oil and gas cluster in the country. International expansion surprisingly has been faster and more successful than what had been anticipated. More advanced systems and products created in Norway has proven to compete positively on the global market. More companies than expected are achieving success internationally. Huge number of companies from Norway of all sizes have extended their operations from their

domestic market into global markets. In the last decade, the industry has experienced a tremendous increment on its international turnover, and this growth persist (KonKraft-report, 2007).

The recent development in the oil and gas prices, combined with a high cost of production, has produced considerable uncertainty surrounding developments in the petroleum industry. In addition to having a direct influence on current income, the fall in oil and gas prices also have numerous indirect effects on value creation in the sector. Reduced oil and gas prices has affected decisions in the exploration, development and operational phases. The reduction in oil and gas prices is likely to result in lower demand in supplier markets and contribute toward reducing the sector's cost of production (The shelf, 2014)

1.2 The study area

The study area for this thesis is Trondheim in Mid-Norway². For the purpose of this study, the Mid-Norway cluster has been limited to the region of Trondheim because the region is very high in education and research and a hub of petroleum service firms in the cluster. Furthermore, attention is focused exclusively on the petroleum service companies in the industry.

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- ² “Mid-Norway” refers to the counties of Nord-Trøndelag and Sør-Trøndelag, while Møre and Romsdal county is not taken into account.

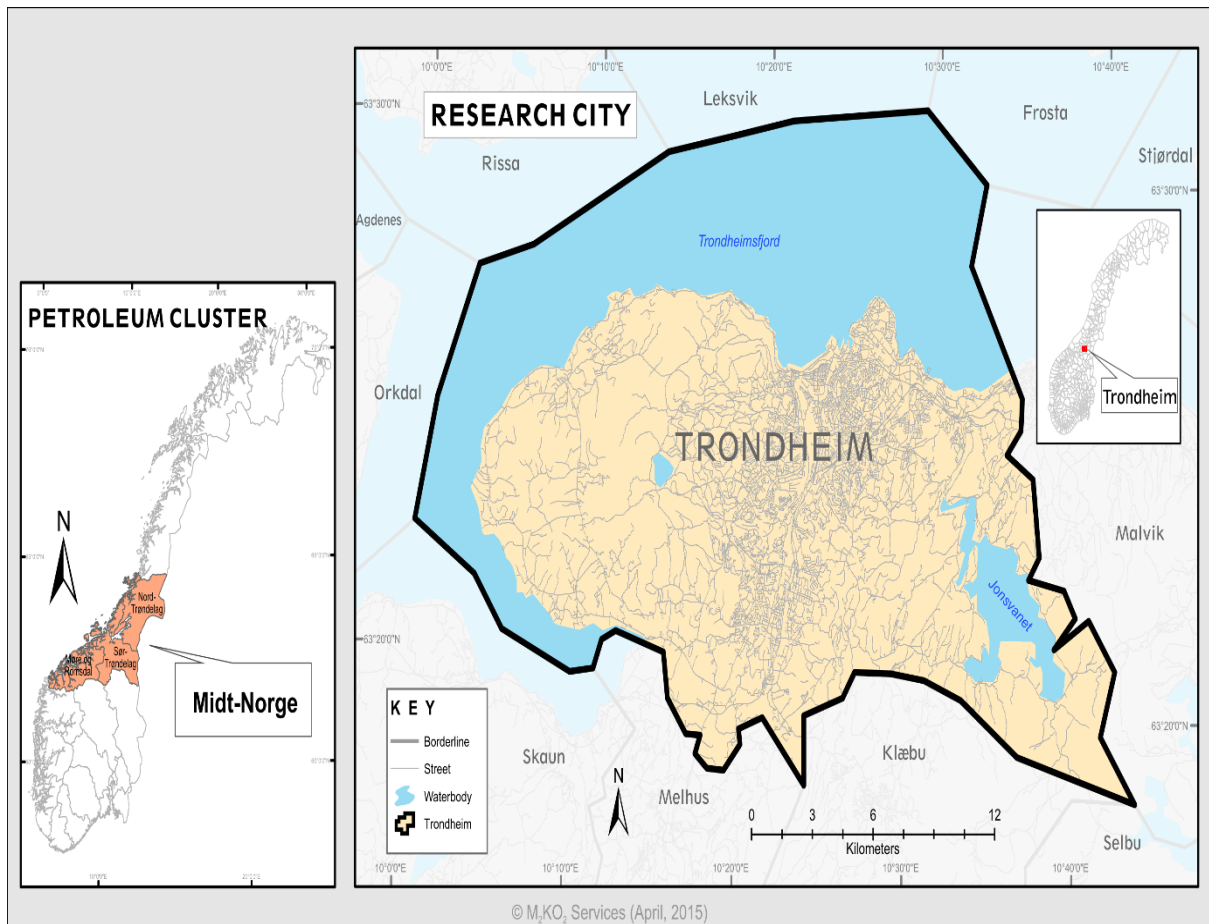


Figure 2: Map showing study area.

Mid-Norway's appearance in the petroleum sector occurred in the early 1960s through the initiation of Norwegian Polar Navigation AS. This began with the increment of investment in the petroleum service sector. With its capabilities of creating high income, the petroleum cluster in Mid-Norway is relatively smaller compared to other regions making it the eighth largest service provider in the country (GKHygen Energi Undated). The region of Mid Norway is recognised as the powerhouse in the petroleum industry in relation to research and education (Facts, 2014: 53).

Trondheim as its regional capital is noted as the region's largest service providing city followed by Verdal, Stjørdal and Orkanger. The Mid-Norway cluster is also known for its high profile of creating and maintaining innovative knowledge and research for petroleum industry (Rystad Energi, 2013). The year 2013 ensued the registration of 178 oil service companies in Trøndelag employing over 8000 workers. This represents about three percent of the total workforce in the region. Recently, Mid-Norway host part of large companies such as Kværnerand Statoil and the headquarters of Reinertsen. The region of Mid-Norway is experiencing the flourishing of various smaller companies (GKHygen Energi 2013; Rystad Energi 2013).

Among some of the oil related activities provided by the region are service provision, construction and engineering and safety. The oil service providing sector has proven and continues to account for the majority of economic growth within the Mid-Norway cluster (GK Energi, 2013). The region of Mid-Norway’s knowledge on subsea services is high, which also contributes to Trøndelag’s profile as Norway’s leading center for research within the petroleum sector. Together with trade companies such as Statoil, NTNU and SINTEF are contributing to the subsea initiatives made in the region (GKHygen Energi 2014b; Rystad Energi 2013). In the last five years, the subsea services have had a growth as high as 41 percent, relying heavily on production of subsea equipment. The emphasis on subsea equipment has also been initiated by a number of emerging smaller companies. With efficient use of knowledge and expertise, these services may experience an increasing growth in the years to come (GKHygen Energi 2014b).

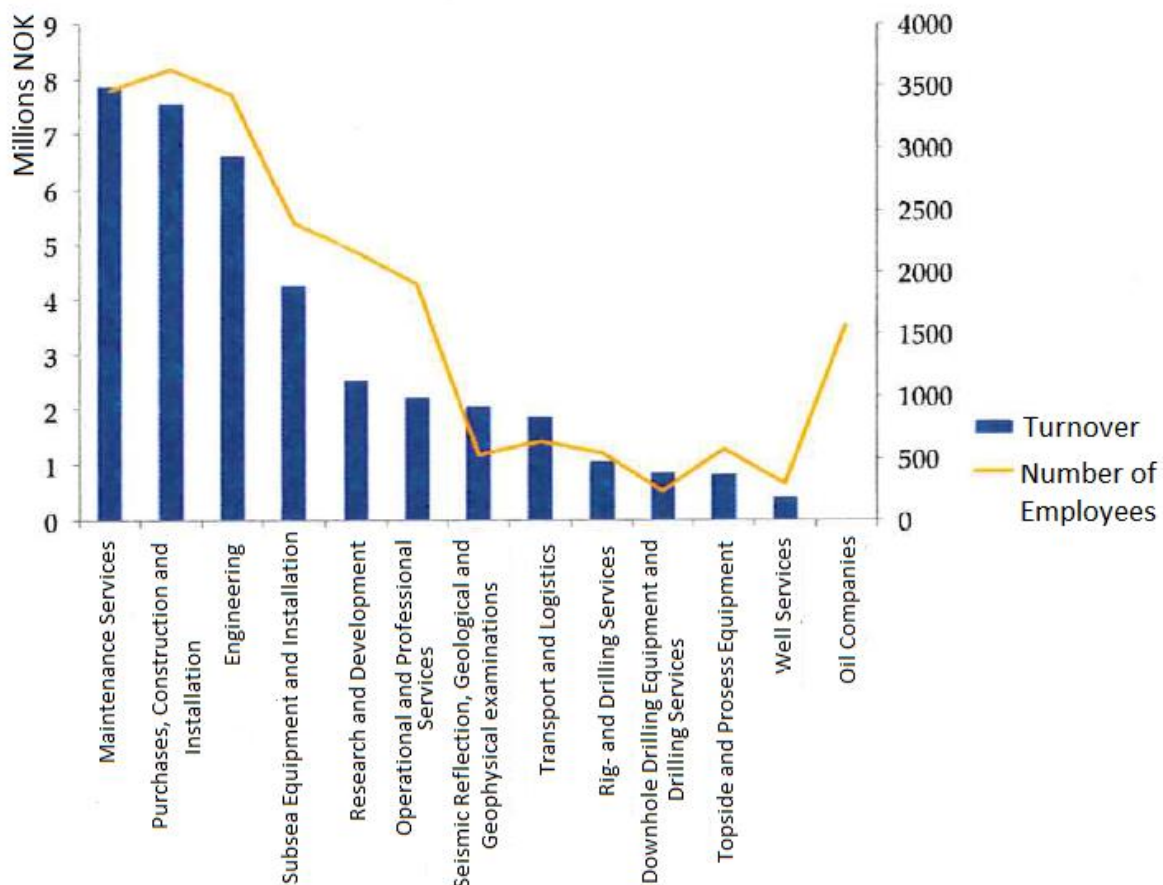


Figure 3: Total turnover and number of employees in the oil and gas industry in Mid-Norway (GKHygen Energi 2014a).

The growing importance of the petroleum related service industry to the Mid-Norway economy, is yet to be given a further boost. The use of knowledge, as well as other measures taken to increase competitiveness, is expected to be implemented to increase future economic growth. Lastly, the entry strategies into the international markets should be further investigated in order to generate progress.

1.3 The motivation behind the study.

Being fascinated by the current trend and forces behind globalisation after taking a course in global knowledge management, my desire to explore in the internationalisation process of MNCs or TNCs was further deepened by my internship project. As part of my academic requirement, I was supposed to have an internship program and subsequently submit an internship report. The kind of exposure I had as an intern at Hygen Energi informed my choice of this topic. I was given two topics by my supervisor at Hygen Energy named Gunn Kari Hygen to choose from. Upon deliberations, I decided to work on the entrance strategies of Mid Norway petroleum service companies into the USA. My focus on the internship assignment was to examine the entrance strategies adopted by Mid Norway Petroleum companies operating in the USA but my focus for this master thesis will be on the internationalisation process of these companies as well as the role played by both public and private institutions as facilitators of the internationalisation process of the Mid-Norway petroleum cluster.

The initial plan for my master thesis was to assess the spill over of knowledge from MNCs or TNCs to local companies in the Oil and Gas industry .in the course of engaging local companies in their value chain system. This was to be looked at from the point of Local Content requirement which requires local companies to be included in the value chain creation of TNCs.

Considering the struggle I had to go through to collect data for that research after which the data collected was insufficient and the development of new interest during my internship program, I finally settled on my new topic for this thesis.

1.4 The significance of the study

The study is envisioned to add up to knowledge on the existing literature on Internationalisation process of Small and Medium-Sized Enterprises (SMEs). It will also contribute to the

understanding of the internationalisation processes of these companies which is complicated and different from the big Trans National Companies (TNCs). The data and information emanating from this can serve as a useful reference for local companies especially those within the Trondheim petroleum industry with the intention of operating in the United States. Finally it can be a useful reference point for future research in the area of internationalisation of Small and Medium Enterprises.

1.5 Main research objectives

This research is aimed at;

Examining the internationalization process and strategies adopted by Trondheim Petroleum service companies into the United States

Examine how External institutions facilitate the internationalization of these companies

Based on the above research objectives, the following research questions are posed to address the objectives.

First research question: What are the Internationalisation patterns and strategies used by Trondheim petroleum service companies to go international?

Second research question: How do External institutions aid in the internationalisation of the Trondheim petroleum service companies?

1.6 Limitations of the study

The time span for the research was conducted within 20 weeks with a limitation on the number of informants. The project being a case study which seek for an in-depth understanding of cases, there is no room for statistical generalisation of results but analytical generalisation is valid (Yin, 2011). Since the internationalisation strategy of firms a very sensitive issue, firms

were a little bit reluctant to talk more about their strategies. Notwithstanding this, quiet relevant data were amassed for this study.

Time limitation also featured in this study. Due to the limited range of time within which the study must be submitted, more companies couldn't be added to the study.

The drop in oil prices also affected this studies in a way. Most of the informants were very scarce to meet since they were mostly out of the country exploring for new market in different countries. This accounted for most of the engagements to be postponed on a number of occasions.

1.7 Thesis Outline

The thesis is organized in the order outlined below. The research is organised in five chapters. It begins with the introductory chapter which present the background for the study, the motivation for the study, the relevance of the study, the ambitions and objectives of the study as well as the study outline.

The second chapter will review literature and further introduce the theoretical framework of this research. This chapter present the concept of internationalisation, facilitator namely the Uppsala Internationalisation, the Network approach and the Born globals perspective. It will further present the concept of internationalisation and the state of internationalisation of Norway Petroleum industry.

The third chapter presents the research design and method used with a detailed discussion of the data collection and analysis tools used in this research.

The chapter four is the analysis chapter where the interplay of the theory and the empirical part are matched. The concepts of the theory are critically examined in relation to the empirical data.

The fifth, and the final chapter, contains the summary, the main conclusions of the study as well as recommendations for further research.

Chapter 2: Literature review and theoretical framework

This chapter review literature on internationalisation of SMEs after which the theoretical framework for the research is presented.

2.1 SMEs and internationalisation

Internalisation as a concept has no single universally accepted definition. Various attempts has been made to define the internationalisation of SMEs. Internationalisation studies are centred on various approaches to internationalisation such as stage, contingency, learning and network approaches(Korsakienė & Tvaronavičienė, 2012).

The concept of internationalisation of a firm has been defined as “either an attitude of the firm towards foreign activities or to the actual carrying out of activities abroad”(Johanson & Wiedersheim-Paul, 1999:306). Carlsson & Dale (2011) on the other hand are of the view that in the recent decades, internationalisation has merged into globalisation and defines it as “both extensive geographical spread and also a high degree of functional integration”. The discussion of the internationalisation process therefore is a basic account of the interaction that takes place between the attitudes and actual behaviour of the firm (Johanson & Wiedersheim-Paul, 1999).

The internationalisation of SMEs has recently gained more attention in the mainstream of economic geography. This is because SMEs involvement in the global market has increased drastically. The internationalisation process of SMEs follows a different pattern observed for in traditional studies (Carlsson & Dale, 2011).

In the midst of this intense globalisation in the world, SMEs see internationalisation as an opportunity to expand their sales to other markets abroad. Operation in foreign markets provide these firms with potentially new and profitable markets, helps increase competitiveness of the firms and also promotes their access to new product ideas and latest technology. Similarly, increased globalisation has led to a threat to SMEs in their home markets as they are exposed to the competition from Large Scale Enterprises (LSEs). Other exposed threats are market turbulence and loss of protected markets (Hollensen, 2011:85).

One of the major challenges facing these SMEs in their internationalisation process in order to build a viable ad sustainable business is often their limited resources making them adopt a flexible, imaginative and innovative business practices (Jones, 2001). SMEs often rely on their

local networks whilst LSEs mostly benefit from their international competence. Notwithstanding these challenges, SMEs still manage to exploit opportunities in the global market (Carlsson & Dale, 2011).

Other barriers to the international expansion of SMEs are inadequate management, financial and knowledge resources. The entry stage of internationalisation normally requires high risk and cost and a reasonable amount of finance is required to back up the strategy to this process. Lack of sufficient finance can therefore serve as a hindrance or reduce the capabilities of SMEs to explore and utilize the opportunities existing in foreign markets (Pettersen et al.2012).

2.2 Modes of Entry

Firms have different forms of entry into a foreign market. Below is an account of some entry modes available to firms to enter a foreign market for the first time.

Entry mode has been described as “an institutional arrangement for the entry of a company’s products and services into a new foreign market”(Hollensen, 2011:320).

A company’s performance is heavily determined by the entry strategy chosen notwithstanding the fact that other strategic marketing mix decisions has it role to play. The choice of entry strategy basically dictates the marketing mix decisions to adopt (Kotabe & Helsen, 2010).

Market entry modes as seen from the manufacturer’s perspective can be categorised into three main groups according to Hollensen (2007). They are the export mode which has low control, high flexibility and low risk as its characteristics. Secondly, the intermediate modes (contractual modes) which is characterised by shared risk and control as well as split ownership. Finally, the hierarchical modes (investment modes) which has high control’ low flexibility and high risk as its features. It cannot be categorically stated as to which of the entry modes described above is best as they are come with their advantages and disadvantages. Besides their pros and cons, the decision concerning which entry mode to choose can also be influenced by both internal and external factors which at times enforce companies to combine two or more entry modes (Hollensen, 2011:327).

2.2.1 Export modes

With this mode of entry, the products of a firm are manufactured in the home market or the market of a third country and then subsequently transferred directly or indirectly to the host country. In the initial stages of internationalisation, export is often the common mode which evolves gradually towards the establishment of a foreign based operations (Hollensen, 2011:335). Many international expansion has exporting as its basis. For many SMEs, exporting remains the sole alternative for the sales of their goods and services in a foreign market (Kotabe & Helsen, 2010).

2.2.1.1 Indirect Export

Indirect export occurs when the producing firm does not direct care of exporting activities of the firm (Hollensen, 2011). The firm uses an agent or a middleman who is based in the foreign market to care for the exporting activities. Here, the firm has no control over how it's product is promoted and marketed in the foreign market (Kotabe & Helsen, 2010:299).

2.2.1.2 Direct Exporting

This happens when the manufacturing firm takes direct care of all exporting activities (Hollensen, 2011). Here, the firm establishes its own organization for exports and employ a middleman based in a foreign market to run export on the firm's behalf (Kotabe & Helsen, 2010).

2.2.1.3 Cooperative Exporting

As the name implies, this consist of entering into a collaborative agreements with other firms such as an export marketing group in issues concerning export functions performance (Hollensen, 2011:335). This type of exporting is carried out by companies that are not willing to establish its own distribution organisation but still want to have some element of control over their exporting activities or foreign operations. Among the most popular form of cooperative exporting is piggyback exporting. Piggybacking export occurs when a company

uses the overseas distribution channels of another company either foreign or local (Kotabe & Helsen, 2010:300).

2.2.2 Intermediate modes

The intermediate entry modes differs from the export entry modes in that, it involves the transfer of knowledge and skills among partners in order to facilitate foreign sales. On the other hand, it differs from the hierarchical mode on the basis that there is no full ownership by the parent firm in question but control and ownership can be shared between the parent company and the local partner. Intermediate modes of entry can come in the form of contract manufacturing, licensing, franchising, Joint ventures/strategic alliances (Hollensen, 2011:355-56).

2.2.2.1 Contract manufacturing

With contract manufacturing, the firm outsource manufacturing to an external partner without making a final commitment. This can be as a result of management lacking resources or the unwillingness on its part to establish and complete a production and sales operations abroad (Hollensen, 2011). The company makes an arrangement with a local firm to produce or assemble parts of the product or in some cases the entire product. The marketing responsibility of the product is the care of the international firm (Kotabe & Helsen, 2010:305).

2.2.2.2 Licensing

Another way through which a firm can establish local production in a foreign market without capital investment is licensing. Licensing occurs when the parent company or the national firm offers some proprietary right to a foreign firm in return for a fee. It can come in the form of technological know-how, trademarks, patent and production process (Kotabe & Helsen, 2010:301). Licensing varies from contract manufacturing in that it normally comes in a longer term and includes a greater responsibility for the national firm as more value chain functions are transferred to the licensee from the licensor (Hollensen, 2011:358).

2.2.2.3 Franchising

It happens when the franchisor gives the franchisee the proprietary or right to use the franchisor's trademarks, trade name, production process or technology know-how in a particular territory over a specific period of time usually 5-10 years. The franchisee in exchange pay royalties and other fees to the franchisor. Franchising is similar to licensing only that franchising is for a specific or shorter period whilst licensing is for a longer period (Kotabe & Helsen, 2010:303).

2.2.2.4 Joint Venture / strategic alliances

This is an equity partnership between two or more parties. It is usually between two partners based in different countries and obviously, there are complications in regards to the management of such a venture (Hollensen, 2011:366). The foreign firm goes into an agreement with other partners³ through the sharing of equity and resources to build a new entity in the foreign or host country (Kotabe & Helsen, 2010:307). Formally, the difference between a joint venture and a strategic alliance is that a strategic alliance is normally a non-equity cooperation which implies that partners do not invest or commit equity in the alliance (Kotabe & Helsen, 2010:366).

2.2.3 Hierarchical modes

This is the last group of the modes of entry. With the hierarchical modes of entry, the company absolutely owns and controls its foreign market entry. The question here is in relation to the degree of control that can be exerted by the head office to the subsidiary. This is a determinant of how many and the kind of value chain functions that can be transferred to the subsidiary from the head office (Hollensen, 2011:366). Multinational companies usually prefer to enter new markets abroad with full ownership (100 percent). In the foreign market, ownership strategies can essentially come in two itineraries. It can take the form of acquisition or mergers (where existing companies are bought or incorporated into the company) or can take place in the form of greenfield operations where a new business entity is built right from the scratch (Kotabe & Helsen, 2010:312).

³ These partners are normally from the host country in order to exploit knowledge of the local markets, institution and culture as well as their networks.

All the various forms of entry modes discussed above are available to firms in Trondheim petroleum cluster and can be considered during their internationalisation period. The Uppsala international model and the born globals' perspective will be discussed below and their views about how a firm integrate these modes of entry will be clarified. Each of the above discussed entry modes requires different levels of both resource and degree of commitment by the firms in its international operational activities.

2.3 International marketing and Facilitators

External facilitation is defined as to cover activities engaged in consultancy and other advisory services with the intent to facilitate the business process of firms through wide and flexible interactions (Juho & Mainela, 2009 :189).The intense globalisation of the world's economy has resulted in an increase in the drive by national governments to facilitate export led growth through firms. Due to the increase in the number of smaller firms in the global economy, many national Export Promotion Organisations (EPOs) are increasingly recognising the need to assist SMEs via a variety of export development programmes (Demick & O Reilly, 2000). This has been epitomised in the work of Welch et al. (1996) that clearly points out impact of an organisation to give support to Australian firms in their quest to bid for an international major project in China (Welch et al.,1996).

It was further highlighted that membership of that organisation provided its members with umbrella functions that facilitated relationship building. Companies were provided with networks that enhanced their network establishment, knowledge building and personal relationship (Welch et al., 1996). Another significant element that was lamented is need to build appropriate relationships with your clients or purchasing organisation(s) to ensure successful marketing in the international project (Welch et al., 1996 :579).

There are different types of intermediary actors that particularly aim to facilitate and support the internationalisation of SMEs activities. This external facilitation can make available to a firm a range of benefits that compensate their lack of managerial competencies and to develop effective networks for the purpose of internationalisation (Juho & Mainela, 2009).

Joint learning forums has been tagged is one of the means through which EPOs facilitate internationalisation. Through these forums, business networks are built and when these networks are formalised, more opportunities and knowledge can be created through them

(Demick & O Reilly, 2000; Juho & Mainela, 2009). The significance of this forum has also been confirmed by Welch et al. (1996). According to them, the external facilitator can play a very vital role in providing a formal forum, and support infrastructures through which firms can build business networks. They see an effective network with a broad mix of suppliers and purchasing firms as a pre requisite for a successful international operation. Lamb & Liesch (2002) also assert that the building and maintenance of a relevant, effective and superior networks is an integral part to a successful internationalisation process.

Network in the internationalisation of SMEs has also been acknowledge by many researchers as a basic tool to facilitate the internationalisation process (see Sharma and Blomstermo, 2003). The internationalisation of firms has recently been primarily described as a network embedded process (Johanson & Vahlne, 2009). A particular type of network is made up of institutions whose major task is to assist the internationalisation of these firms. These external facilitation has enticed only a limited amount of concern among researchers of internationalisation(Juho & Mainela, 2009).

Based on the above literature review, the roles of Innovation Norway and INTSOK will be examined in the internationalisation process of Trondheim petroleum industry.

2.4 The Uppsala Internationalisation model (the stage model)

Several literature and studies in the sphere of international business have shown that internationalisation process of firms is a process in which firms gradually progress in the involvement in international market (Johanson & Vahlne, 1977). This is not different for the Uppsala internationalisation model which was developed at the University of Uppsala by a number of researchers from Sweden (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1999).

The model was built around the decisions of a firm's market choice and market entry modes in the internationalisation process (Hollensen, 2011). The model was developed after an empirical studies conducted on Swedish firms proved that Swedish firms mostly develop their operations internationally through small steps. The principles underlining the choice of market was explained by the firm's psychic distance (Johanson & Vahlne, 1977). Psychic distance implies

“the sum of factors preventing the flow of information from and to the market” Examples of psychic distance are difference in business practices, language, education, and culture. According to this theory, it is much easier to enter markets with close mental proximity. It is assumed that psychic correlates with geographic distance but has been proven otherwise since this variable is not constant. Countries might be closer in geographic distance but very wide apart in reference to psychic distance and countries might also be wider apart in terms of geographic distance but very close in their psychic distance (Johanson & Wiedersheim-Paul, 1999:308).

In the view of this model, firms make their first debut after the establishment of a strong domestic market. The more a firm gains knowledge about a market, the more its willingness to invest more resources into that market (Johanson & Vahlne, 1977). Lack of such knowledge serves as a very significant hindrance to the development and establishment of operations internationally. The possession of such market knowledge on the other hand serves as the major means through which this knowledge and experience can be acquired. Firms expand to other markets when they have established a strong domestic market (Chetty & Campbell-Hunt, 2004a).

This theory holds the view that the process of internationalisation are into stages making companies operate firstly in nearby markets and gradually expand to other markets. The focus is on the internationalisation process of a firm in a specific market. This model has been tagged as the “stages model” because they posit that internationalisation happens in an incremental steps. According to this theory, the more a firm’s knowledge about a specific market, the more committed it is to invest more resources into that market (Chetty & Campbell-Hunt, 2004a). The Stages approach as the name implies identifies four different stages or entry modes of internationalisation that a firm goes through in its internationalisation. All these entry modes are captured in the modes of entry available to firms which has been discussed above. The argument here is that, notwithstanding the fact that all these modes of entry are available to firms, firm progress through a number of steps gradually in their internationalisation process (Chetty & Campbell-Hunt, 2004a). These incremental steps ranges from producing and exporting from home market, to the establishment of sales subsidiaries before finally, the establishment of production unit abroad (Amdam, 2009: 446) Firms normally start their internationalisation process by opting for low-risk and low-cost entry strategies because they lack experiential knowledge. Experiential knowledge offers the framework for identifying and

articulating opportunities. It also provides absorptive capacity that is the ability to interpret and assimilate new knowledge (Johanson & Vahlne, 1977: 28).

The learning or knowledge acquisition and the commitment stages through which firms progress in the course of internationalisation are as follows; no regular export activities, export through independent representatives, establishment of a foreign sales subsidiary foreign production and manufacturing units. These stages requires different knowledge base and resource commitment. This assumption was originally backed by the evidence from a case study of four firms from Sweden which is the empirical backbone of the model. The stages in relation to the gradual steps of internationalisation was restricted to a particular country market and that after a number of years of export to a country, firms increase their commitment to that market by going beyond only export.(Chetty & Campbell-Hunt, 2004a; Hollensen, 2011; Johanson & Wiedersheim-Paul, 1999)

The concepts of market knowledge and market commitment, commitment decisions and current activities were used to explain the mechanism of the internationalisation process. The model with a discussion of how market knowledge (experiential knowledge) influence the degree of market commitment in a specific market. It is assumed that, firms gradually acquire knowledge through their personal experiences abroad. Market knowledge or experiential knowledge is assumed to reduce the uncertainty in the foreign market and firms in return increase their commitment to the market in focus. The market commitment concept is constituted by two factors thus , the amount of resources and the degree of commitment (Hollensen, 2011). An emphasis is placed on experiential knowledge as an important instrument to internationalisation and therefore a firm's internationalisation process is driven or is a determinant of its knowledge base. More emphasis has been placed on experiential knowledge which consist of knowledge acquired through hands on firm as well as personal experience. Firms therefore increase their commitment abroad as internationalisation evolves (Johanson & Vahlne, 1977).

The modified version of the model introduced a new variable which is business relationship learning and commitment in the process of internationalisation. The critical issue discussed is that it is very time consuming and resource demanding to build and sustain business relationships. These relationships if effective will open up new opportunities to learn and acquire knowledge. The more experiential knowledge gained about a market, the more

resources committed to the market. This process develops gradually and explains basically why the Uppsala model sees an incremental process of internationalisation (Johanson & Vahlne, 2006).

Another aspect of the element of building business relationship is that, once a focal firm is connected to another firm in a foreign market, and the firm in the foreign market is committed to other wider network, the focal firm indirectly become connected to the wider network. This can serve as a bridge to the access of a new knowledge base and opportunities (Johanson & Vahlne, 2006).

The Uppsala internationalisation has been lambasted for various reasons of which some are discussed below.

The model has been criticized for its inability to find a logic delimitation between the stages of internationalisation proposed. A clarified explanation to the mechanics that aid the firms through the various stages is lacking. Also the model has been castigated for its deterministic character because of its unidirectional change pattern (Anderson, 1993 in Hauge & Havnes, 2001).

Further criticism has been levelled against the theory for not recognising the interdependencies that exist between various country markets. Studies have also shown that new firm's internationalisation has become more spectacular in that firms of late are exposed to 'leapfrog' stages in the chain of establishment. Some firms enter markets with wide psychic distance in terms of market at an early stage of their inception (Hollensen, 2011).

Also, this theory has been lambasted by Boschma (2005). He posits that, geographic proximity cannot work in isolation and the most relevant proximity in relation to learning and innovation is the cognitive proximity. Cognitive proximity to him is a prerequisite to learning. Effective interaction to promote learning and innovation can take place in the midst of an absorptive capacity (cognitive proximity) (Boschma, 2005).

In spite of its criticisms, the Uppsala model has been recognised as to support many studies worldwide. The Uppsala international model does not refer to any specific type of firm making it possible and easier to apply in this study. The modified version of the model has introduced the concept of relationship commitment makes it appropriate to apply in this

research taking into consideration the element of network relationship which is a major characteristic of modern internationalisation (Johanson & Vahlne, 2006).

2.5 Born Globals

In contrast to the stages model of internationalisation is the born-global view. The internationalisation process of born globals differs from that of firms commonly witnessed in the past (Sharma & Blomstermo, 2003). This view of internationalisation holds that firms do not go to international through an incremental development but rather internationalise soon after the firms' commencement. Unlike the traditional pattern of internationalisation where firms are assumed to operate in its home market for many years and gradually expand internationally, born globals may not have strong domestic market (Knight & Cavusgil, 2004). This is in contradiction to the stages model with the view that firms begin the internationalisation process by first exporting from a strong domestic base market (Chetty & Campbell-Hunt, 2004a). Born global as defined by Oviatt and McDougal (1994) in Chetty & Campbell-Hunt (2004) is "a business organisation that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries." It has also been defined "business organisations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of output in multiple countries" (Knight & Cavusgil, 2004: 124).

They further highlighted that in addition to their orientation of knowledge intensiveness, these firms produce high technology products for a specific niche in the international markets. The born globals have the perception of the world as one market and don't see the benefit to confine themselves to one country. They see the international or world market as a platform for opportunities rather than obstacles. Born globals therefore aims at achieving growth through international market or sales and this can be achieved through the provision of a highly or unique specialised product or goods for a niche market internationally (Chetty & Campbell-Hunt, 2004a).

The process of internationalisation of born globals has been described as a reactive process in that decisions are made when new opportunities or problem arise in the international market. They have exposition to high levels of uncertainty in relations to potential clients, their needs as well as demands (Chetty & Campbell-Hunt, 2004b).

Based on the research questions stipulated above, the research will rely on the ideas from the Uppsala internationalisation model and Born globals perspective to internationalisation. The analysis of this thesis will be based on the theories posited above against the empirical data.

Chapter 3: Methodology

This chapter provides a reflection on the methodological framework used in the conduct of this research. It presents the research strategy and design that have been used for this thesis. A further presentation is made on the means by which data was collected and analysed as well as a reflection on the concepts of validity and reliability in the research. Finally discussed were the challenges to this research.

3.1 Research design and strategy

The persistence of a long standing debate between researchers of social and natural sciences has been in relation to the question of which method better explains social phenomenon. In the midst of these debates within academia, these methodologies are used in various studies independently as there is the perception that they belong to different ontology and epistemology (Bryman, 2012; Matthews & Ross, 2010).

A research strategy is simply defined as a “general orientation to the conduct of a social research”. The choice of research method to be used depends on the kind of data to be collected and your research questions (Bryman, 2012).

A research design has also been defined as a framework for the collection and analysis of data (Bryman, 2012). Choosing a methodology for research is not just a matter of picking the one that seems the easiest but the one which is appropriate in relation to the kind of knowledge one wants to acquire (Kitchin & Tate, 2013). This justifies the adoption of the qualitative research strategy. Per the research questions of posed in the introductory chapter that seek to address the research objectives of the internationalization process of firms in the Trondheim petroleum cluster ⁴ and secondly the role of external facilitators in this process, the qualitative approach to research is deemed fit to meet the knowledge the research seeks to acquire.

This research is embedded in a case study research design. . A case study unlike other research designs can either include a single case or a small number of cases but there is a detailed exploration and an in-depth knowledge of cases (Matthews & Ross, 2010:128). Case studies are appropriate when a research addresses either ‘why’ or ‘how’ a phenomenon happens (Yin,

⁴ A cluster is a “geographically proximate group of inter-connected companies and associated institutions in a particular field, linked by commonalities and complementarities”(Bathelt et al. 2004:36)

2011). Therefore, a case study research design is suitable for a research when the research seeks to address issues about 'how' these companies internationalize and how external facilitators aid them in the process.

3.2 Sources of Data

There is no limitation on the source of data used in case study. The use of multiple sources of data is a benefit to case studies as it provides different evidence (Yin, 2011). This research dwells on both primary and secondary data.

The primary data is the main source of data with the secondary data as a complement to the primary data.

3.2.1 Primary data

Primary data was mainly in the form of interviews. This was mobilized through the conduct of semi-structured interview four informants operating in the Trondheim petroleum cluster and two informants from INSOK and Innovation Norway which are facilitators of internationalization in Norway.

3.2.2 Secondary data

These are data which the researcher uses that has previously been produced by others. These data are have been mobilized by someone outside the research.(Matthews & Ross, 2010: 285). Secondary data were in the form of reports and relevant academic literature by other scholars which duly reference has been made to. Materials which are not for public consumption were made available from innovation Norway and INSOK. The internet pages of the various companies have been very useful as background knowledge for the research. These information are all classified under secondary data.

3.3 'Gatekeepers'

A gatekeeper has a very significant role in gathering data for a research and a gatekeeper serves as a facilitator or a medium through which access is gained to organizations and informants. Gaining access to institutions for research purposes is normally a mediation by gatekeepers. Their role can be in allowing researchers into a particular physical space or giving way for research to be conducted in a specific way (Homan, 2001). Gatekeepers are concerned about the motives of the researcher, the potential benefits of the research to the organization and what the organisation will lose in participating in the research (Bryman, 2012: 151).

The main gatekeeper for this study is Gunn Kari Hygen of Hygen Energi. Although I contacted most of the companies personally, the role of my internship supervisor at Hygen Energi cannot be ignored, overlooked or underestimated. I was introduced to my target companies by Gunn Kari Hygen. Below is an account of how my gatekeeper facilitated the collection of data for this studies.

First and foremost, access to relevant materials for the research were made available to me by my gatekeeper. Through this, I had access to confidential data which were meant for the company. I got a lot of information about the cluster in Mid Norway which was very relevant for this work.

Through my gatekeeper, I got a list of all companies registered in the cluster together with their contacts. After this list was made available to me, I critically went through the list and came out with my own list of companies relevant for this research. The research objectives served as a guide and as stated in the sampling method, purposive sampling was used in generating this list. The final list was presented to my supervisor after which she started the process of connecting me to my gatekeepers. She gave me emails and telephone contacts to my gatekeepers once a contact has been established. In sending out request to conduct interviews to the informants, my supervisor was always copied and that frankly contributed massively to establishing contacts with my respondents. . Through this process, I had access to Marine Cybernetics AS, Resman AS, Optonor AS and Exprosoft AS.

For the cases of INTSOK and Innovation Norway, I was introduced to the institutions through a friend who had already established contacts in these two institutions. My friend played the role of gatekeeping in these two organizations as I was given the contacts to get in touch with my informants after the organizations have identified the right people for the interviews. This choices were made by the organizations after going through the content of the research. The

people deemed knowledgeable in those field of the organisations were linked up to me after which appointments were made and interviews conducted subsequently.

The roles of these gatekeepers to this research is immeasurable since through them, access to data for this study was made possible.

3.4 Sampling techniques

Sampling is basically selecting a number of cases from a larger group of potential cases. This is mostly related to the kind of research designs and methods adopted (Matthews & Ross, 2010:153). Purposive sampling method was used and this made it easy and reasonable to choose my informants. In using this type of sampling, the research questions serves as a guide of what units should be included in the in the sampling. Purposive sampling is a type of non-probability sampling (Bryman, 2012).

In purposive sampling just as a probability sampling, the population is defined in terms of features or characteristics and specifically in terms that are significant to the research. However no importance is attached to represent all possible members of the population (Matthews & Ross, 2010).

The decision of which units should be included in the sample was influenced by the research questions. The sample was first, limited to firms in the Mid-Norway petroleum cluster. Further reduction was made on the basis of firms which has operations in the United States of America (USA). Through the assistance of my Supervisor at Hygen Energi, a petroleum consulting firm in Trondheim, I had the opportunity to have access to a list of all companies registered in the petroleum cluster in Mid-Norway. After the list has been given to me by my supervisor, I searched for the web address of the companies to read more about them. Based on this exercise, I came out with a list of companies that had operations in USA. A total of 11 companies were shortlisted. An attempt was made to interview all the companies shortlisted since they met my basic criteria for the purposive sampling method which are follows; their existence in the Mid-Norway petroleum service cluster. Secondly, their international expansion to USA, their status of a being a service company, their high share of export and finally, their length of operation, being an SME.

Companies in the cluster embark on international expansion into different foreign markets and as clearly stated above only 11 companies on the whole list had operations in USA. The choice of sampling method adopted ensured that, correspondence ensued between the research questions and sample. According to Matthews & Ross (2012), a purposive sampling allows the

researcher to explore the research questions in depth and to work with the collected data to identify and explore theoretical ideas. The sample based on the criteria for selection will enhance a very good comparative analysis since all the firms are within the same specific industry.

In relation to the external facilitators, the criteria for the sampling was to include one public and one private institution that aids the internationalization of the companies in the cluster. This was in accordance to the research question of how public and private institution aid the internationalization of companies in the cluster. Innovation Norway and INTSOK (Norwegian Oil and gas Partners) were selected. Innovation Norway is a public institution which has a branch office in Trondheim and an international office in USA. This makes it an important institution to provide significant information about their role in the internationalisation process. The choice of INTSOK was the fact that it is a very instrumental organisation in the internationalisation of the Norwegian oil and gas industry. It also has an international office in the USA and also has clients in Trondheim petroleum industry.

3.5 Data Collection methods

Data collection is seen as the key point of any research project (Bryman, 2012). Interview has been tagged as the most commonly used method for data collection in qualitative research since it is a very simple and non-problematic way of finding thing (Robson, 1993 cited in Kitchin & Tate, 2013). In conducting this research, primary data is the main source of data and this was made possible through the conduct of interviews.

The semi-structured type of interview was adopted to be more specific. These interviews revealed first-hand knowledge about the process of internationalisation of these firms and the role of facilitators in this process.

The reason behind the use of semi-structured interviews is to provide flexibility and platform for the informants to answer the questions in their own way. It also give the opportunity to ask follow up questions. A semi-structured interview is usually developed to follow a common set of questions for each interview. They are mostly used as a data collection tool when the researcher's interest lies in people's behaviour, experiences and understanding and why they perceive the social world in that way (Matthews & Ross, 2010:221).

3.5.1 Interviews

This is one of the widely used qualitative technique. Interviews can be conducted in many forms that ranges from a highly structured interview to absolutely unstructured interview. It can serve as a rich source of data on people's opinions, aspirations, experience and feelings (Kitchin & Tate, 2013).

This study adopted semi-structured interview as its major method to produce data. Open ended interviews give respondents the opportunity to answer question in their own words and terms. It also help the researchers to explore new ideas and areas where they have limited knowledge (Bryman, 2012: 246).

In all six interviews were conducted. Four of the interviews were conducted with informants from companies in the Trondheim petroleum cluster having operations in the USA. The other two interviews took place with informants from INTSOK and Innovation Norway which are both public international facilitators.

An interview guide ([Appendix 1](#)) was drafted for the four companies in the petroleum industry and a separate interview guide ([Appendix 2](#)) was designed for the two facilitators namely INSOK and Innovation Norway. The interview guide was used in the various interviews but in some cases follow up questions were asked which distorted the order outlined in the interview guide. There was some kind of flexibility which allowed the flow of new and detailed knowledge. The interviews were not conducted strictly according to the order of the interview guide.

Contacts were made to my informants mostly through an email with the exception of Resman AS which was contacted by phone. An email was sent out to the remaining five companies. The contents of the emails were about the request to conduct an interview with a brief description of the research project. Attached to these emails were also a letter from NTNU which was endorsed by the program coordinator. My Supervisor Gunn Kari Hygen at Hygen Energi was copied in each of the emails. This actually helped me a lot since she was known by the companies personally. In the case of Resman, Gunn Kari Hygen made the contact herself and gave me the informant's contact to get in touch so we can settle on a date for the interview.

I eventually called the informant at Resman AS and an appointment was booked for the interview.

Appointments were made possible through the emails with Exprosoft AS, Optonor AS and Marine Cybernetics AS, INSOK and Innovation Norway.

The interviews were then conducted after the appointments were booked. The interview took place in a diverse setting. Four of the interviews took place in their respective companies' offices in Trondheim, one of the interviews was conducted by skype and the final interview was made possible through a telephone call.

Resman AS, Exprosoft AS, Optonor AS, Innovation Norway were all interviewed at their respective offices in Trondheim. Before the conduct of each interview, the informants were made aware of the research they are being asked to participate. They are also assured of the time span of the interview and rapport are always created before the interviews start. Rapport is a quick relationship a researcher build before the conduct of an interview.(Bryman, 2012: 218). In all cases they are asked for their consent if they are okay with me recording the interview. Fortunately for me, all my respondents agreed to my request of recording the interviews. A digital was used for recording the interviews. On the average, an interview lasted for forty minutes. The minimum interview lasted for thirty minutes and the maximum lasted for an hour. After the interview with Innovation Norway, I was given a report and material on a project recently done in Brazil which was also about internationalisation facilitating.

The interview of Marine Cybernetics AS was conducted by skype. This was because, after establishing contact with their office in Trondheim, I was told there is no informant there who is very conversant with their international operation. They subsequently connected me to a staff in their office at USA. I established a contact with him through an email and we agreed on a date for the interview. On the very day scheduled for the interview, I got an email from him that he is going for a workshop to promote their product. Another day was then scheduled and the interview took place on the new scheduled day. There was a limitation on the observation of body language since the interview was not 'face to face'.

The final interview was with INSOK. Here, the interview was through a telephone. This was because INSOK doesn't have an office in Trondheim and considering the time limitation for the study, it was more efficient to conduct the interview by telephone. I initially asked if the

interview can take place on skype but the respondent was not on skype and telephone was the only option left. A day before the interview was conducted, I was given a report from the informant through an email about the internationalisation to USA. Just like the skype interview, the telephone interview also did not gave room for personal observation of the body language of the respondent Telephone interviews on the other hand has a merit of quick and cheap administering (Bryman, 2012: 214).

3.5.2 Document Analysis

Market studies materials produced by both INTSOK and Innovation Norway were of immense value to this study. The internet pages of all the companies included in this research also served as another source of secondary data. Relevant information were obtained from theses secondary sources and were subsequently integrated in the research as such. The FRAM Work Note on Networking in Brazil provided by Innovation Norway gave a clear view of how they aid or facilitate local companies to internationalise. Another relevant document came from INTSOK. ‘How to Succeed in the US Market place’ as the names goes, had a lot of important information which was analysed to select those aspect needed for this study. In addition to the primary data, secondary data undoubtedly has play a tremendous role in this research too.

3.6 Data analysis

After conducting all the interviews, they were transcribed into a raw data. A raw data is a data that has not gone through any process of analysis but has been presented in the way it was gathered(Matthews & Ross, 2010). The transcription ensured the data were intact in MS word document in their raw state.

These data are normally comes in the form of large corpus Due to the bulky nature of such data, analysis is not straightforward. Qualitative data unlike Quantitative data has no clear-cut rules in relation to how their analysis should be done (Bryman, 2012). Qualitative data are not as strictly defined as quantitative data and therefore analysis of this kind of data lacks formal rigidity of the standardised behaviour. Despite the difference in emphasis of qualitative approach to data analysis, they all seek to generate sense of the produced data through categorization and connection (Dey, 1993 in Kitchin & Tate, 2013: 229).

The transcribing of the raw data started right after the first interview was conducted. I choose to do the transcriptions myself because of the fact that I did the interviews myself and had a fresh memory of what transpired during the interview. In the course of the transcription, points were jotted down while thinking through the interviews carefully. I had a feel of the data and started developing ideas about particular lines of inquiry (Kitchin & Tate, 2013: 237).

Thematic analysis is the analytical approach employed in this research. This type of approach according to Bryman (2012) is not “an approach to analysis that has an identifiable heritage or that has been outlined in terms of a distinctive cluster of techniques”.

This approach is useful to this research in that the interviews were conducted using a semi-structured interview. Semi-structured interviews will increase the possibility of a recurring answers about the topic since the interviews basically revolves around the same questions which give a basis for comparison and interpretation of data. Thematic analysis helps in the analysis as data is categorised according to major themes upon which the analysis is made.

Below is a figure indicating some of the codes and their meaning.

CODE	DEFINITION
PEDM	Pre Entry Decision Making
IHM	Importance of Home Market
ME	Mode of Entry
OFM	Operation in Foreign Market
MGA	Motivation for Going Abroad
CFM	Challenges in Foreign Market

Figure 4: A sample of the data processing codes and their meanings

As indicated in the figure above, the quality data were coded and categorised into further major themes such as internationalisation process, strategies and the roles of external facilitator. This was to aid further categorisation of patterns that are common to cases and theory since it's a multiple case study. All sub themes were placed under their respective major themes. This

facilitated the analysis section since data were reduced to a meaningful size which made it easy to analyse.

3.7 Trustworthiness

For most researchers in qualitative field, the development of measurement of concepts will not be a relevant consideration. This does not question the use of concepts in qualitative research. However, the development and use of concepts in qualitative research differs from that of quantitative research strategy (Bryman, 2012: 388).

Validity and reliability has been employed by qualitative researchers in many similar ways as has been used by quantitative researchers over the years. In response to the suggestion by some writers that qualitative research should be evaluated or judged according to a criteria quite different from those of quantitative research, different ways and terms has been developed to assess the quality of qualitative studies (Bryman, 2012: 390).

The quality of this research was assessed using the criteria developed by Lincoln and Guba (1985) and Guba and Lincoln (1994). They provided an alternative criteria for evaluating qualitative studies other than validity and reliability. They proposed two primary ways of judging qualitative research namely Trustworthiness and authenticity. The quality of this thesis was assessed with these terms and concepts from Lincoln and Guba (Bryman, 2012: 391).

This research has an element of credibility. The research was carried out in accordance to the canons of good practice. The final results or findings of this research was made available to the respondents since all their means of contact was intact. Five of my participants' requested for the final work and as requested, the final work was made available to them. I personally sent the final work to the last respondent and it was very much appreciated. The issue of respondent validation was duly addressed.

The research took into consideration element of dependability. Complete records of all stages of the research process are kept. This runs from the formulation of research problem to data analysis. Records of selection of research participants, interview transcripts and field work notes are all intact in an accessible manner.

Finally, personal bias has been controlled as much as possible. Although, it is not possible to ensure absolute objectivity, all measures were put in place to ensure that my personal values as well as theoretical inclination had not overtly sway the conduct of this study and the findings derived from it. The concept of confirmability has been manifested here.

All these strategies stipulated above were employed to ensure the quality of the research and its trustworthiness.

3.8 Ethical Consideration

Human beings are the centre of social science research and because most social science research involves human beings, their attitudes, their experience and directly, their ideas. The involvement of participants in a research project is in itself a social activity and may influence both the researcher and the informant. The consideration of ethical issues in a research is therefore a necessity to ensure the production of a good quality work.

The ethics of social research is about creating a mutually respectful, win-win relationship in which participants are pleased to respond candidly, valid response are obtained and the community considers the conclusions constructive (McAuley, 2003: 95 in Matthews & Ross, 2010: 71).

Several measures were put in place to ensure that participants in this research are not put to risk of any kind. Among some of them are presented below.

To begin with, the participants were made conversant with what the research is about making them informed about what they are about to participate. An introductory letter was obtained from my department which was endorsed by the programme coordinator. This letter had a brief description of the research. I also so made an oral presentation of the research and what it is about. Questions were welcomed from my participants if further clarifications were necessary. Through this, all the informants were given clear and adequate information about the research.

Secondly, I clearly presented myself as well as the authority on which the interviews were conducted. Before each interview, I described my background and who I was. The introductory letter from the department was used as reference. The introductory letter from the department was always attached to the emails I sent out to book an appointment for the interviews. This letter contains the email address and telephone contact of my research sponsor which is my

department. In addition to that, I also showed my student identity card to clear any sort of doubt held by my informants about my background.

Furthermore, the consent of my informants were also taking into consideration. None of my informants was forced to participate in this research. They voluntarily participated in this research after having understood the purpose of this research and found it interesting. They were free to withdraw from the research when the need arise.

Also, participants were assured that any information gathered will be used solely for academic purpose. They had the assurance that, any information given will be treated as confidential and will not be for public consumption. Here the issue of confidentiality and anonymity were addressed. In the analysis, companies were anonymised by labelling them as firms A, B, C & D.

Before the conduct of each interview, the consent of the informants were sought for, if the interview can be recorded. This was to ensure that the privacy of the informants were not interrupted. Luckily for more, all my informants accepted my request to record the interviews.

Finally, the findings of this research was made available to the respondents which was another aspect of ethical issue addressed.

3.9 Challenges of data collection

The initial plan of the research was to conduct an interview with ten companies in the Mid-Norway cluster that operates in the USA market in addition to Innovation Norway and INTSOK which are external facilitators. The number of ten was eventually reduced to four. This is because targeted companies which had initially accepted the request to be interviewed were later not available for the interviews. There were instances where appointment would be made with the informants only to go to their office only to find out that they are not available. I was told by one of the employees I met at the office that because of the drastic drop in the oil prices, companies are doing their best to find alternative marketing options. This made it very difficult to get in touch with those who are very much knowledgeable about the company's international operations.

Some companies that had initially accepted to participate in the research later on decline their acceptance. They always gave reasons that there are no people to grant the interview.

Another challenge to this data collection was time constrain. The time frame for the research was not sufficient to enable me include more participants. This is because there was not enough time to include more companies taking into consideration the time available for the whole research.

I also experienced some minor difficulties technically with regards to the interviews on skype and telephone. Because of the predisposition to bad connection, it was difficult for the informants to get the questions asked and that called for a repetition of the questions overly. Similarly, I also encountered some problems during the transcriptions where I could hardly hear what was recorded. Follow up questions were later on forwarded on a different occasion to informants to seek for clarifications.

A language barrier also manifested in the collection of data as in some instances, respondents were struggling to remember the English words for certain things and at times end their statement without making the full submission. I think if interviews were conducted in Norwegian, more and in depth as well as new areas could have been explored.

Another problem encountered doing data collection was that, some of the informant at times move away from the scope of the discussion and jump into other discussions outside the scope. This normally occurred when they get more into the conversation. However, I believe that the data have a sufficient quality for a reliable analysis.

In summary, this research adopted a qualitative research framework, a multiple case study design to be more specific. The data for this research was obtained through a qualitative approach and reliance on secondary sources such as reports, articles, information stored in archives and many more.

Semi structured interviews were employed. Semi-structured interviews are mostly connected with a research in which the researcher is concerned with experiences of people(Matthews & Ross, 2010).

Chapter 4: Analysis and Discussions

4.1 Introduction

This chapter presents the analysis and the findings of this research. This chapter provide a match of the theory against the empirical studies. The analysis will be done in accordance with the research questions outlined in chapter one which addresses the research objectives.

1. *What are the Internationalisation patterns and strategies used by Trondheim petroleum service companies to go international?*

This question will be addressed by the data from the four interviews conducted with the oil and gas service companies in Trondheim. Secondary data will be used as a complement.

2. *How do external institutions facilitate the internationalisation of Trondheim petroleum service companies?*

This question will also be addressed by the data from Innovation Norway, INTSOK and the four companies in Trondheim petroleum industry as well as secondary data as complement.

Based on the research questions posed, the analysis is structured in three sections. The first two sections will address the first research question and the final section answers the second research question. In order to make the comparative study interesting and easy to understand, the criteria used in selecting the cases will make it easy to compare and contrast the internationalisation process and the strategies adopted by these firms. This will further on help to figure out some similarities and differences in these processes.

A brief description about the nature and competence of the four companies are given below and subsequently followed by the three phases of the analysis. For anonymity reasons, the discussions will not expose name of companies against their various experience but the relevant information will be used to make the discussions interesting and valuable.

4.2 The nature and competence of the companies

Marine Cybernetics AS

With over ten years' experience in the oil and gas industry, Marine cybernetics functions as a third-party customer and the system provider. The core competence of the company is testing and verification of control systems on ships and rigs. They offer the following services; Drill-HIL testing, MPD/DGD-HIL testing, Crane-HIL testing, DP-HIL testing, PMS-HIL testing and many more. Their expertise is to ensure that ships and rigs get balance and work efficiently. Marine cybernetics has 26 employees. Their field of exploration is the oil and gas offshore sector.

Resman AS

Resman has been in existence since 2005. It is one of the world's leading provider of wireless reservoir surveillance. It has a niche product and they are geared toward the production of subsea services. They provide service that ensure that the wells are intact and efficient. They identify leakages in wells. Resman AS is also specialised in the provision of oil and gas offshore services. Resman has 67 employees.

Exprosoft AS

Exprosoft which was established in 2001, is a software and consultancy company that increase uptime for oil and gas operators. Their services are to ensure the efficient functioning of wells. They deliver solutions that allow operators to understand the failures and risk of well equipment, and use this knowledge to reduce intervention cost and increase production throughout the well's life cycle. Exprosoft has 25 employees. This company also operates in the oil and gas offshore sector.

Optonor AS

Optonor AS has been in existence since 1997. Optonor is established as a leading manufacturer of laser based, interferometric systems for vibration analysis, static deflection measurements and non-destructive testing. Their MEMSMap 510 for analysis of MEMS structures and transducers performs full field measurements up to 240 MHz or higher, while the VibroMap 1000 TV-holography (ESPI) system can analyse structures from sub centimeter to meter in size. The SNT 4045 system for non-destructive testing of large and small structures can detect

vibrations in the nano range even in workshop environments. Optonor has 3 employees. They also operate in the offshore field.

4.3 The Internationalisation process of firms

4.3.1 Motives for going international (USA)

Here, the motives will be categorised under either proactive or reactive reasons and integrated by both the Uppsala and the born globals perspective. A reactive form of internationalisation simply implies that internationalisation is as a result of a response to problems emanating from the domestic market. A proactive motive on the other hand occurs when a firm's internationalisation is as a result of a rational decision such as utilising a larger foreign market for growth (Carlsson & Dale, 2011; Hollensen, 2011).

When the companies were asked why they have to go abroad, the search for market was exposed in the answers of three of them (firms A, B & D). The exception was one company (firm C) that has to follow its customer to the USA market termed as piggybacking. Piggybacking falls under the reactive motive to internationalisation. The other three companies embarked on internationalisation because they saw the international market as an arena of opportunities without which their companies cannot grow and succeed. The reasons for going to USA was given in many folds of which some are the search for a new market, to exploit external knowledge to boost innovation and many more. These motivation falls under the proactive motives for internationalisation. This can be captured in one of the quote of the respondent below;

... This is pro-active. It was because the industry, the offshore and energy sector, you have a few very important places, which are of course Norway, out home market, then Houston is a very, very, very big market in the oil and energy sector, so... and a lot of decisions are made here, so it's a pro-active approach to be close to the market, close to the customers, and close to the decision makers. That's the reason why we are here.

Firms has various motivations to operate internationally. It can be in response to pressures from home market or the eagerness to explore and exploit knowledge as well as opportunities in the international market. This to a large extent, influences the Internationalisation strategy a firm adopts.

4.3.2 Pre entry international experience

This part of the research question will be analysed with the Uppsala international model and some concepts from the Born Global perspective in mind. The model posit that experiential knowledge is an important tool as it enhances the learning process of firms (Chapter 2). This reduces uncertainty and risk which instigate firms to commit more resources. Born Global on the other hand does not recognise the importance of experiential knowledge as it holds that firms internationalise right from their inception and see the international market as composed of opportunities to success. With this in mind, I will analyse the case of the four companies in relation to their pre entry knowledge.

Prior to market entry to USA, the companies had different international exposure and experience. Three of the companies (firms A, B & C) had experience in international marketing before their entry to USA as can be illustrated by the quote below:

“Well, we are a niche, you know. A niche technology company and we are... we are selling all over the world. We are selling in... We have sold most systems actually in Asia. And of course in Europe. Some in Norway. But we need to have the whole world as a market. Because we cannot live only from selling in one country or something, so it is natural for us to sell to all companies in the world. And that includes, of course, USA”.

The role of experiential knowledge manifested in the pre entry decision of three of the companies (firms A, B & C). These companies on the average spent two years to acquire valuable information about the business institutions and business culture of the market. The company with a different experience (firm D) entered the USA market right after its inception. This characterize a born global firm. The cases of firms A, B & C can also be an explained by the Uppsala model as it emphasize that business relationship built can serve as bridge to new knowledge and opportunities. Firms A, B & C established business relationships before they embarked on their internationalisation.

4.3.3 Knowledge about the foreign market

The stage model postulate that, firms increase their knowledge about a market gradually as they invest more resources through which progression is made in the internationalisation process. When more knowledge is gained about a market, more resources are invested or

committed to that market (Chapter2). Pre entry learning can be in the form of the transfer of knowledge from a different foreign market, pre market learning or post market learning. From the empirical data, two (firms A & B) of the four firms travelled to the USA market for years to gain valuable knowledge about the market before any resource commitment was made. This can be seen from the quote below;

“When we started operating... we started traveling here actively with Norway as the base in 2006-2007. And then, in 2013, it was decided to put people on the ground here to do marketing and sales based in Houston.”

And this was how the other respondent put it;

“... the US was for us a very special approach. Because the oil capital in the world that is Houston. So we had to relate to Houston very early. And I think I had meetings... initially it was only meeting with Houston in 2006.”

The firms on the average spend two years during the presale phase of their internationalisation process to study the business institutions and business culture of the market. For firm C, it was exploiting the knowledge base of its client it had followed abroad. With time, it increased its knowledge base in the market and subsequently increased its resource commitment as well. Firm D on the other hand had no knowledge about the market since it entered first through the exhibition it participated.

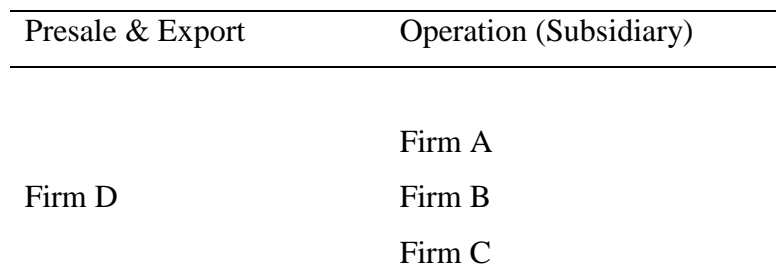


Figure 5: A diagram showing the current internationalisation phase of firms

The phases in the internationalisation process was generated from the data from the field. As indicated above, the Firm D is in the presale and export phase. This means that, it is currently operating through the export mode and still in the search of new customers. In this stage, there is a fairly increment in the knowledge base and resources commitment. Firms A, B and C on

the other hand have progressed to a different phase in the internationalisation process. They are now operating through their own established subsidiaries. This implies an increase in the market knowledge base and a corresponding increment in market resource commitment of the firms. A sharp distinction is difficult to be made among the stages as firms A, B & C are still in search for new customers.

4.3.4 Pre entry decision making (planned strategy)

The use of a strategic plan in the internationalisation process is an integral part of a firm's international operations. Strategic plan has a pronounced impact on the pace and pattern of a firm's internationalisation (Johanson & Wiedersheim-Paul, 1999). A strategic plan according to Johansen and Vahlne (1977) remains sceptical in the stage theory. Chetty & Campbell-Hunt (2004) are of the view that the process of internationalisation are as a result of a mixture of strategic thinking, emergence development, strategic action, necessity and chance.

Two of the firms (firms A & B) had planned strategies before their entry into the USA market but it was interesting to know that after approaching the market, their planned strategies were not followed. According to these two companies, they had to adjust as new problems and opportunities come up. The other two companies (firms C & D) did not have any planned strategies simply because one of the companies entered the market through exhibition and the other through it clients. They also stated that, they developed strategies to address problems and opportunities as they arise.

Beside this, three of the companies (firms A, B & D) that entered the USA market by themselves and made mention of the fact that they possessed niche technologies and that is more than a strategy to say. This can be confirmed from the quote below

Well, we are a niche, you know, a niche technology company and we are selling all over the world. We are selling in... We have sold most systems actually in Asia. And of course in Europe. Some in Norway. But we need to have the whole world as a market. Because we cannot grow and succeed only by selling in one country or something, so it is natural for us to sell to all companies in the world

This is a characteristic of a born global firm. Born global firms sees competing through an innovative marketing strategy, service quality and specialised product for niche markets as salient(chapter 2).

4.3.5 The importance of home market

The Uppsala model lament on the importance of home market that is a strong domestic market is needed for firms to embark on internationalisation. The born globals' on the other hand see no importance of a strong home market in the internationalisation process of a firm (Chapter 2). Of all the four cases studied, it can be analysed that home market really plays a role in their internationalisation process. Three of the firms (firms A, B & C) had a strong domestic market before their decision to expand to international market. This conform to the proposition made by the Uppsala model. Firm D did not have a strong domestic market which falls within the ideas of the born globals yet the firm stated clearly the relevant of the home market to its internationalisation process. Through domestic market network, this firm was introduced to USA, although the firm didn't have a strong domestic market at the time it started its internationalisation process, its product after being tested by a domestic client, gave them the confidence to go international. This can be captured in the quote below:

When we started in 2005, we had a product that, I to be honest I can say now it was not mature. But then, on the other hand, we were also very aware of that if you don't go to the market, then you will survive one or two years, and you have no more money, and it's the end of the game. So we had to go to the market with a non-mature product. And we approached, of course Statoil, which is then here, in Norway. We approached Statoil, then we managed to get a relationship with one unit in Statoil that was then willing to try out the product the first time. We started to discuss with an operating company in Australia. So already, in 2006, we approached the world market (respondent, firm A)

After some years of operation in the market, more resources commitment had been made. One of the firms (firm A) responded that, the home market is the place where their product was first used and they also use domestic customers as reference when selling in foreign markets. The other three markets also stated categorically the importance of the home market as the current operation was possible because of their strong home markets. This confirms the position of the Uppsala model that, a strong home market is a pre requisite for internationalisation. One of the companies (firm D) exhibited the characteristics of a born global where it had no strong domestic market.

Another importance of home market from the discussion is that it provide a stronger financial support base for the uncertain international venture. Internationalisation is a resource

demanding venture and firms need to be in good standing in order to internationalise. Domestic market therefore serves as a reliable means through which this resources can be secured.

4.4 Strategies for internationalisation

4.4.1 Market entry mode

As discussed in chapter 2, there are various mode of entry available to these companies. In relation to the Uppsala model, companies move from one stage of entry to the next. The theory made it clear that in the incremental process, some stages can be jumped but the most important thing to note is that each stage of the establishment chain requires the commitment of more resources. Born globals on the other hand assumes that firms do not go through stages in the course of internationalising but they internationalize right after their inception (chapter 2). The companies will be examined in line with the prepositions made above to know which theory best describes the case of these companies. According to the literature, foreign markets can be entered through export, contractual agreement and finally hierarchical modes (chapter 2).

The stages model assumes that firms go through these modes in step by step, first adopting export mode and an increase in market knowledge results in an increase in market commitment and a new entry mode is adopted. According to Jones (2001), a sensible intuitive from both perspective is that, SMEs begin internationalisation through low risk and low involvement modes such as indirect export. Per the data collected, the case of the various companies will be duly examined to bring out the similarities and differences in their entry mode. When informants were asked about the entry mode they are familiar with, the mentioned sales agents, joint ventures, acquisitions and wholly owned subsidiaries. All these forms of entry have been discussed in chapter 2. After this, they were asked to talk about their various cases. They elucidated some similarities and differences in their first internationalisation steps.

From the discussion with the firms, they acknowledge the fact that some of the entry modes are more resource demanding than others. Other reasons such as the little knowledge about the market, the risk involved as well as financial constraints informs the decision on which entry mode to adopt. Two out of the four firms (firms A & B) had the same export initiation experience. They contracted independent agents through which information about the market as well as contact with potential customers were established. The third company (firm C) began

its export experience by following a domestic customer international (piggybacking). Even with this, majority of the service were provided from the company's domestic office. The last company (firm D) initiated export chain through attending exhibition of technology which was advertised through the internet. Subsequently, an agent was employed by the firm to seek for market and also represent the firm in the foreign market. It was interesting to hear that, the companies choose these strategies basically because they didn't have enough finance and they saw export as less resource commitment venture and also less risky to employ. In all, three of the firms (firms A, B & D) started their internationalisation process through export via independent agents. Their activities at this stage was more of trade related. This confirms the finding of Jones (2001) that small firms engage in more trade related activities at their initial stage of internationalisation than other forms of business activities which is a determinant of the resource at their disposal. This affirm the assumption of the Uppsala model that firms begins sales abroad through independent representatives than the setting up of a sale subsidiary as a matter of the resource at their disposal. This support the idea of gradual internationalisation of firms (Chapter 2).

4.4.2 Setting up of a subsidiary

As the first Internationalisation steps of the various firms have been discussed above, this section discusses the next step of the international activities of these companies. Against the assumption of the Uppsala model that firms will increase their commitment with an increased knowledge base about a market (Chapter 2), the international operations of the firms will be accessed to see if the assumption made by the theory can be used to explain the case of petroleum service companies in Trondheim.

Three out of the four firms (firms A, B & C) are now operating through subsidiaries. The last firm (firm D) is still operating through an independent agent. When a question was posed as to why firm D is still operating through an agent. The response was that sales subsidiary is something thought about and they are in the course of establishing one since it is now difficult to attract customers without a sales subsidiary. This is captured in the quote below;

“.....And I think we need to have a sales office in the US. I think they are very important. Customers are not so glad to buy directly from Europe. They want it to go through a sales office where they can have a service provided, and also, you know, buy it from this company instead”

This confirms the assertion of Carlsson and Dale (2011) that establishing branches or subsidiaries internationally can be inspired by the localization of potential and actual customers and cooperatives.

The other three firms (firms A, B & C) after a number of years in operating as export companies are now operating through the companies' subsidiaries in USA. According to the companies, this involves more resource commitment to the market. These subsidiaries are mainly for sales purposes. One of the companies informed me about their plan to start providing technical service from their subsidiary. This can be confirmed by the quote below;

.....All activities are controlled by our Firm 'A' US Limited, or whatever it is called. It's a US company. It is registered in US and it's... the leader of the company is working in Houston it operates more or less as an independent company, but we share some of the departments here with those in Houston, so they are doing all the selling, but not the physical delivery of the project. Now there are discussions to also take provision of service over to the US (respondent, firm A).

The firms transition from an exporting firms to a subsidiary owning firms in the foreign market perfectly describe the stages proposed by the Uppsala model. Firms declared their intentions to invest more in the market if their targets are met.

4.4.3 Choosing a subsidiary manager

After a subsidiary has been established, another salient issue was choosing a subsidiary manager. Who was due fit for such a project? The question of employing either a manager from the home country or a manger from a foreign market. This relates to the issue of cross cultural knowledge management. Cross cultural manger according to Holden (2002) is

an idealized personage who embodies the capability to offset culture shock and so is adaptable to the circumstance of another cultural environment, this environment being frequently seen as another country, that is another national culture (Holden, 2002 :295).

Per the discussions with the companies, the experiences were different. Here the problem to be addressed is how to employ a manger with the qualities to handle cross cultural issues.

The first company (firm C) started the operation of its subsidiary with an expatriate (from Norway) but after operating for some years, they saw the need to hire a local manager since the expat was not very much knowledgeable about the foreign market and its operations. They thought of the employment of a local manager (from US) as the best alternative since they are expected to know much about the business culture, institutions, and market operation of the

US market. They are now operating with a local manager (from USA) since according to them, the expatriate didn't have enough knowledge about the market and its operation. As can be seen from the quote below;

.....But we do have a daughter company in Houston. That was established when they (expats) were there. And we still have that, and today we have other people working there. Other American people (respondent, firm C).

The second company (firm B) on the other hand, had a directly reverse experience of the first company. They commenced their subsidiary operation by first employing a locally recruited manager. The reason given for this choice was that the local managers are expected to pose more knowledge about the market. The problem the company faced was the inability of the locally recruited manager to sell their product. They realized that, the locally recruited manager did not have sufficient knowledge about their technology and services so they replaced him with an expat who was from their parent company and much versed with their product and service.

The final company (firm A) had its own unique experience. Their subsidiary was started with a locally recruited manager and it is still run by the same manager. The locally recruited manager is trained at regular bases at the company's head office to get familiarized with the company's technology and services. This has turned out to be very successful for the company.

In the light of these various experiences and adaptations over time, choosing a subsidiary manager seems to be a challenge and a dilemma as it is hard to fulfil all requirements of such a person. One similarity among the firms at this stage is that, an expansion of their operations to the subsidiary level denotes a different stage of their Internationalisation process.

4.4.4 Challenges to initiating the internationalisation process

Various challenges have been experienced by the firms in their internationalisation process. Among some of them are as follows;

Firstly, building business network was an enormous challenge as well as a risky business. Three of the firms that entered the US market by themselves and the last one followed a client to the market. From the discussions with these three companies, it was not easy to build local network relationships in the market. They had to spend quite a number of years travelling back and forth to the US market just to build networks.

Secondly, building networks were time consuming and resource demanding. At the pre entry stage of embarking on internationalisation, firms without business activities in the market had to spend their scarce resources on establishing business networks. It was also mentioned that the projected time frames for establishing business network far exceeded what had been anticipated. This can be confirmed by this quote

It is very, very difficult to get in. to build trust. To get in to be present over time, because it's costly to have people there, and for the first years we maybe don't generate much revenue because it takes time to get in, to find the contacts, and to get contracts (respondent firm A)

Again, business culture was another challenge to the process. Holden (2002) posit that, cultures are well conceived as intersecting zones of collective learning, pools of common knowledge. Culture of a country differs from another. The business culture of US is very different from Norway and the companies had to make cases (references) for their technology before customers were willing patronize. From the interviews, it came up that customers in Norway are always ready to try new products. This is different in the US as customers mostly rely on references. Firms A, B & C thought they had strong domestic market and references in their home country so it would be easy to sell in the US. It was unfortunate they had to start afresh by building new references in order to sell. This can be confirmed by this quote;

...Even if we say that our products, they are qualified in Norway, which is the strictest nation on the globe when it comes to environment, they say that; "we don't care. You have to prove again (respondent, firm D)

And this is how another company confirmed that;

...as I told you, it was to go to Houston, to get some consultant, get into the right discussion loops in Houston. And then hope that something would come out of it. I am... I can personally say that I was a bit disappointed of Houston. I thought it was easy to sell something there (respondent, firm A)

Despite the fact that Americans are aware of the high technological base of the Norwegian companies, there was difficulties in marketing their products. This affirm the assertion by Pettersen et al., (2012) that "Americans recognised Norwegian advanced technology, still many Norwegians had difficulties selling their product"

Finally, financial resource was a common challenge to all the companies in their quest to internationalise. This has been a major barrier to the internationalisation of SMEs. From the discussions with the companies, it was revealed that most pre entry decisions are determined based on the financial resource at hand. This is how it was put by one company;

...For us, insufficient financial resources. Plain as that. In order to earn more money, you need to have money. In order to earn more money, you need to have more money. In order to penetrate the market, you need to have more money (respondent, firm A)

Summary

The section explored the internationalisation pattern and strategies of Trondheim petroleum service companies. From the discussion which dwell on a number of themes such as motives for going abroad, pre entry knowledge about the market, the importance of home market saw that the pattern of these companies varies and exhibit some characteristics of both the Uppsala internationalisation and the born global schools. The strategies adopted by the firms which was examined under themes such as market entry mode, setting up and choosing a subsidiary manager also saw some firms exhibiting characteristics of the Uppsala model whilst others followed born global school.

4.5 The role of external institutions in the internationalization process

As stated in the introductory section of this chapter, data from Innovation Norway and INTSOK will be used to address this section of the analysis together with other secondary data. A brief description of both Innovation Norway and INTSOK will be given after which the ways through which they give assistance to the Trondheim oil and gas service will be examined under a number of themes. From the interviews with the companies, all the firms admitted that they have been supported by either Innovation Norway or INTSOK in one way or the other. This was exposed when the firms were asked if they have received assistance from either Innovation Norway or INTSOK. Their confirmations of assistance received are captured in the quotes that follows; *“Yes, we have assistance from Innovation Norway and have participated on INTSOK arrangements. I do not think we have used any other external facilitator of internationalization.”*(Respondent, Firm C) and respondent from firm A put it this way *“Eh, I would say yes we had some help from Innovation Norway. When we first moved over to the US, Innovation Norway got an office for us.”* Firm D also responded this way; *“Not so much. We received 150,000 NOK to put together a demo instrument when the company was started.”*

According to the respondent from firm D, this is the only assistance received from any external facilitator so far and although it was useful, it wasn't critical to the firm's internationalisation.

The roles of Innovation Norway and INTSOK will be examined together although they are two different entities, it was stated emphatically that, the two institutions work hand in hand. This is confirmed in the quote below;

So we... Innovation Norway and INTSOK, in the oil- and gas sector, we supplement each other. Because the... like in Houston, the Innovation Norway's office is in Norway house, where also INTSOK's office is. So that means that there is quite a lot of collaboration on the operation base between INTSOK and Innovation Norway (respondent, Innovation Norway).

While Innovation Norway provides financial support and other advisory role, INTSOK on the other hand provide professional support. In the course of the discussion, a division will be made on their roles where necessary. A detailed account of how firms has benefitted from both institutions is given below.

Innovation Norway

Innovation Norway is the Norwegian government's most significant instrument for innovation and the development of Norwegian enterprises and industry. It is the official trade representative abroad and represented in more than 30 countries. One of its objectives is to assist Norwegian businesses in growing and finding new markets through the provision of competence, advisory services, promotional services and network services. Innovation Norway also provide a broad business support system as well as financial means. Its service is not limited to the international arena but provide similar important assistance to firms locally. Innovation Norway has an office in Trondheim to service companies in Trondheim (Innovation Norway website).

INTSOK

INTSOK – Norwegian Oil and Gas Partners is a network-based organization. It was established in 1997 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. INTSOK is an effective vehicle for promoting the Norwegian offshore industry's capabilities to key clients in overseas markets and providing information to its partners. The organization encourages active dialogue between oil companies, technology suppliers, service companies and governments. INTSOK has only three domestic offices located in Oslo, Bergen and Stavanger (INTSOK website).

4.5.1 Networking and Internationalisation

Both the Uppsala internationalisation and the born globals schools acknowledges the importance of networks in the internationalisation process of firms (Chetty & Campbell-Hunt, 2004a). This has also been confirmed by the literature review on facilitators in (chapter 2). Against this background, the significance of network is looked at and incorporated with the roles of both Innovation Norway and INTSOK in facilitating internationalisation.

Internationalisation of firms recently is described as a process of embedded network. The developments embedded in these networks in the international market has been lamented in the case of SMEs(Johanson & Vahlne, 2009). The establishment and maintenance of a very effective and superior network is seen as an essential part in the success of a firm's internationalisation process(Juho & Mainela, 2009).

The Uppsala model sees lack of knowledge and experience as a hindrance to a firm's internationalisation (chapter 2). SMEs in the petroleum service sector are usually specialised producers of service and are expected to need more experience and knowledge in order to meet their accelerated internationalisation. This can be achieved through the reliance on external facilitators(Juho & Mainela, 2009). The importance of network was also emphasised by the respondent from INTSOK which is capture in the quote below;

“Network is very important because one can meet companies that have been ahead of you in the internationalisation process, and if they are not competitive, they are more willing to share information”

4.5.2 The role of Innovation Norway and INTSOK in the domestic market

The international success of SMEs is a determinant of external factors such as new market conditions and developments in various aspect of technology. Beside these factors, the importance of internal factors such as capacity building, characteristics of the entrepreneurial team and entrepreneurial international exposure cannot be underestimated (Madsen & Servais, 1997).

4.5.2.1 Competence building

Innovation Norway which is the Norwegian's most vital instrument of innovation and development of its enterprises plays a very important role in building local competence. This is done through the provision of various kinds of supportive systems. As can be captured from this quote by the respondent from Innovation Norway; *"some of the programs we organise are to develop companies."* This was confirmed by Firms A, B & C as can be seen from the quote of firm C; *"We have completed a three years R&D program with financial support from Innovation Norway"*. Through the provision of advisory services, network services, financial means, companies are able to enhance their capabilities locally. These assistance will be elucidated under various themes below.

4.5.2.2 Knowledge creation

The Uppsala model asserts that knowledge develops incrementally from experience and commitment to foreign market. According to this model, it is only through engaging in business activities in a particular country that the business culture and institutional arrangements of a market can be learned (Johanson & Vahlne, 2006).

Through knowledge transfer, firms are exposed to new ideas and knowledge about for instance markets, internationalisation technology or product from the experience of other firms. Both Innovation Norway and INTSOK has a broad knowledge base about the operations and running of foreign markets. The petroleum service companies in Trondheim benefits from this knowledge base of the institutions. These are captured in the quote from the respondent of firm C;

We are currently participating in Innovation Norway's US Shale program, and this has given us new knowledge of this market. It is still early in the process, so this has not yet resulted in any new technology or customers yet.

Once this kind of information is made available to local companies, they are able to blend it with their expertise to create new knowledge. Innovation is an essential part in the internationalisation process since it keep firms competitive.

You mean for Innovation Norway? Well, that was of course very important. We had two operating companies, and then Innovation Norway. ...And of course to get the Innovation Norway on board, was crucial for the operators to also join. It did not have a lot to do with the internationalization. It had more to do with the evolution of the technology (Respondent, firm A)

This indicates how Innovation Norway has contributed to the knowledge creation of a firm.

4.5.2.3 Financial Support

One of the barriers to internationalisation for SMEs is inadequate financial resource to embark on the process of internationalisation (chapter 2). Through government funding, Innovation Norway provides financial support to SMEs. This can take the form of loans or grants to boost the internationalisation of firms. This can be confirmed with the quote from the respondent from Innovation Norway below;

Innovation Norway is a government organisation and we are handling money. We are financial support to companies upon their application. The money is partly grant and partly loan. We plan and organise programs and these programs are to develop the companies as such....

From the companies view, confirmations were made in relation to the support received from Innovation Norway financially. This can be seen in the quote below;

... Since they arrived so late. 2012 was very late. Then we had had the company going for 7 years. So actually our expertise on the marketing internationally, was already established in the company. So the only thing that Innovation Norway has done, is to give some financial support (respondent, firm A).

Similar experience was made by firm C as can be captured in this quote; *“we had a pre study project where we had financial support from Innovation Norway.”*

Limited financial resource has and is still a significant barrier to internationalisation of firms and with the support from these external facilitators, firms can meet this challenge. This can be confirmed by this quote from firm B *“We have limited financial and management resources so*

we need to be targeted and selective also when it comes to good programs and offers. Therefore it is important to select programs that supports our strategy.”

4.5.3 The role of Innovation Norway and INTSOK in the international market

Apart from the support given to a firm’s internal building and development domestically, facilitators engage in other assistance programs internationally. Below are the discussions of the external support given to SMEs in their internationalisation processes.

4.5.3.1 Access to Market

Another important role played by external facilitators is the assistance given to firms to access new markets. In the case of Innovation Norway, facilitating a firm’s access to a new market can take two forms. It can come in the form of the firms identifying a potential new market and seeking for the assistance of Innovation Norway to penetrate such market. Here assistance can come in the form of advisory services, giving more information about the market and also financial support. Market access can also erupt from the side of Innovation Norway. This occurs when opportunities are identified in new markets by Innovation Norway. They organise a project to bring on board some companies with the interest of exploiting that opportunity identified. A typical example is the Innovation Norway’s FRAM shale market project which is a networking project to help facilitate Norwegian firms to build competency and penetrate into the US shale oil and gas industry. Also it was confirmed by firm B that Innovation played an important role in their market entry which can be confirmed from the quote below;

...through Innovation Norway, we discussed some practical things, like getting VISA applications, acquiring an office, how we should enter the market and more. So Innovation Norway helped us with the practicalities we used in our internationalisation. Innovation Norway was the only source of information and help we had.

INTSOK on the other hand had its own way of assisting firms to penetrate new markets. A research is conducted every year on different markets worldwide. The research provide companies with information about various markets globally. This was confirmed by firm A as it can be seen from this quote; “...also, we as a member of INTSOK had reports on the market and surveys in different areas of the world. And of course with these reports, we had adequate information about the market which facilitated our entrance” The need for market knowledge

as well as technological knowledge in the firm's internationalisation process has been emphasised by Fletcher (2007) to prevent failures (Fletcher, 2007 in Juho & Mainela, 2009 :190). Market specific knowledge according to Johansen and Vahlne (1997) reduces the psychic distance between the firm's domestic market and the particular foreign market thereby reducing uncertainty and unravel opportunities in the market.

4.5.3.2 Competence promotion

Once competence is built in the local market, firms become more competitive with enough capacity to compete in the global market. Innovation Norway through their numerous network globally promote the competence of the local companies globally. INTSOK on the other according to the respondent from the institution, the institution organises a workshop both domestically and internationally. During these workshops, Norwegian companies are made to present their technologies and competencies. This to a large extent expose their business to the global market and in some cases business networks start to develop as potential clients are made aware of these competencies. This arena also facilitate the exchange of knowledge and serves as a platform for learning and gaining experiential knowledge as well. It was stated by some of the companies how INTSOK helps them to organise meetings with potential customers. It can be captured from this quote; *“we have participated in some INTSOK arrangements and have had help from them to arrange meetings with potential customers in new markets (respondent, firm C).”* And this is how respondent from firm A put it;

When it comes to INTSOK, we used later representatives here and there, and especially in places where we had to arrange meetings with customers in places like Newfoundland, Houston and more.... But it was only support that was, was to arrange meetings... to get Customers.

This was a great platform for firms to exhibit their technologies and attract new customers according to firms A, B & C.

4.5.3.3 Networking

We aim in helping Norwegian companies grow and find new markets. Local presence is therefore important to maintain a very effective and superior network (Respondent Innovation Norway).

This quote indicates the importance of networking in the internationalisation process. Innovation Norway and INTSOK with their wide and effective network aids firms in the Trondheim petroleum service industry in diverse ways. The most popular means which came up through the discussions with INTSOK and Innovation Norway was the provision of platform through which exchange of experience and knowledge takes place. In addition to that, the network of all offices of both institutions in different countries provide similar services to the companies operating in those markets. As can be seen from the quote below, networking is very essential in the internationalisation of firms and firms benefit from the networks of Innovation Norway and INTSOK;

....yeah Innovation Norway have some network meetings, so that you get into the business. And they have some, networking, some dinners, some training sessions, and some conferences that you normally attend to get started with the network. Of course, this is a place to build business networks and if I should say it has really contributed to our company (respondent, firm B)

Similarly, through the network of these external institutions, companies were able to establish new contacts. This is captured in the quote below;

Well, it was of course very good to have a local representative, or INTSOK, to set up meetings in remote places. So that was the main functionality they had. They normally set up a meeting through their network and then we took over all contact. So it was more or less just one meeting day organised by them (respondent, firm A).

This was also confirmed by firm C as it indicated that INTSOK has opened new doors for them through its networks.

In summary, Innovation Norway and INTSOK in playing their roles as external facilitators provide the following benefits to companies in the Trondheim petroleum industry; competence building, knowledge creation, financial support, access to markets, competence promotion, networking and other managerial services.

Chapter 5: Conclusion

This chapter presents the final section of the thesis. It presents the findings of this study after which recommendations are made for further studies in the field of internationalisation of SMEs. The master thesis has addressed the following research questions;

1. *What are the Internationalisation patterns and strategies used by Trondheim petroleum service companies to go international?*
2. *How do external institutions facilitate the internationalisation of Trondheim petroleum service companies?*

5.1 Summary of the findings

In the midst of a rough climate, tough regulations, as well as demanding operators, Norway has developed a quality and leading petroleum service and supply industry (Facts, 2014). With this high competency and an increased domestic and international competition, petroleum service companies are compelled to go abroad. The region of Trondheim, which is a very important region in the Mid-Norway cluster has witnessed an increase in the number of petroleum related service and suppliers companies. This master thesis therefore focuses on the process through which these companies internationalise and the kind of support available to them in this process. The Uppsala internationalisation model and the born globals perspective served as the theoretical backbone of the research against which the experiences of four Trondheim petroleum service SMEs and two research institutions has been studied in depth. The following points came up as very salient in relation to the firms' internationalisation process.

Firms have different motives of going abroad which ranges from reactive to proactive motives. From this study, three (firms A, B & D) out of the four firms went abroad in search for new market whereas the other one (firm C) went abroad in order to continue rendering service to its client that has also gone international. It can therefore be concluded that, most service petroleum firms in Trondheim embark on internationalisation for proactive reasons. This means the motives characteristics is more explained by the Uppsala model than the born globals.

International experience as seen from the perspective of the Uppsala model is a prerequisite for a successful international operation. The born globals on the other hand attach less importance to this since international experience to them play a little role in a firm's success. Three out of the firms had experience in international marketing before they embarked on any export activity into the US. The other firm with its experience is still in the presale phase of internationalization. This differ from the incremental position of the Uppsala model of internationalisation. Although, it can be concluded that most of the firms in Trondheim petroleum service industry had pre entry international experience in their internationalisation process, the significance cannot be measured.

The Uppsala model posits that lack of experiential knowledge is a major hindrance to the internationalisation of firms. Market commitment to them is a determinant of the market knowledge base of firms. This manifested itself in the internationalisation process of three of the firms. For these firms, once their knowledge base about the market increased, more resources were committed into the market. The firm which entered the market through its client, later increased its commitment in the market after they had found new customers thereby establishing a sales subsidiary. It can therefore be concluded that experiential knowledge is a necessity for most companies in the Trondheim petroleum service sector.

A strong domestic market according to the Uppsala model is a backbone to a firm's internationalisation whereas the born globals attach less importance to the domestic market of firms. It came up from the analysis that, Firms A, B & C had strong domestic markets before their internationalisation. Firm D on the other hand had a weak domestic market. From this, a conclusion can be made that majority of Trondheim petroleum service companies develop a strong home market before any international engagement is made. The exceptional case of the immediate internationalisation of firm D confirms the position of born globals that firms may choose to internationalise right after their inception.

The discussions about the strategies used by the companies in the process of internationalisation also produced the following important points. Concerning the entry modes used by firms in the industry, four major modes were mentioned by the firms. Three of the firms entered the USA market through an export mode. The other firm entered the market through following their client. This kind of entry lack an explanatory value by both theories.

The experience from the other three firms can be explained by the Uppsala model that posit that firms in the initial internationalisation engage in low resource investment entry modes.

After the acquisition of more knowledge by firms, it is expected according to the Uppsala model to increase its commitment in the market in focus. Three out of the four firms are now operating in the US market through subsidiaries. The fourth firm on the other hand is still operating through an independent agent. This differ from the proposition by the Uppsala internationalisation model that an increase in market knowledge results in an increase in market commitment and a step to another phase of internationalisation. Though a conclusion can be drawn from the experience of the three firms that, as firms in Trondheim petroleum industry increase the knowledge base of a market, more resources is committed to that market but it is difficult to draw a sharp distinction between the phases of internationalisation of the firms.

In the stage of the internationalisation process where firms are now operating through their own subsidiaries, the problem of choosing a subsidiary manager evolved. Two of the firms changed their subsidiary managers whilst one firm maintained the subsidiary manager. From this it can be concluded that the pattern of recruiting managers for subsidiaries does not follow one direction. It does work in diverse ways. The various decisions made in management of the various companies are worth it and the firms are doing well under their subsidiary managers.

Firms encounter various forms of barriers in the initiation of the internationalisation process. The following problems were common to three of the firms. Time consuming and resource demanding in the course of building new networks, the cross cultural knowledge dilemma, and limited financial resources. Most firms in the industry are hindered in the course of initiating an internationalisation agenda by these barriers. For firm C, it encountered part of these barriers (limited financial resource) but escaped others because it also benefited from the network which has already been established by the client it followed abroad.

Firms in the Trondheim petroleum service have different internationalisation experience although there are some commonalities at certain stages of their internationalisation, they are bound by unique features as well. Both the Uppsala and the Born global schools cannot totally explain the pattern and strategies in the internationalisation process of these firms

The final part of the thesis which is the roles of external facilitators also came up with the following observations. External facilitators form an integral part of a firm's Internationalisation process. The firms in the petroleum service industry in Trondheim enjoy the following services from Innovation Norway and INTSOK who act as external facilitators to these firms.

Innovation Norway and INTSOK both provide an arena for networking to the firms. Through their wider and superior networks, workshops and other forums are organized where firms are able to meet up with clients all over the world to exchange ideas and exhibit their competencies. Through this, the competency of the companies are promoted to the global world. In some cases, informal networks are formed which when maintained well develops into formal networks. In relation to this function of the external institutions, three firms benefitted but one firm have not profited in any way. Two of the firms benefitted through the network of INTSOK as it made possible a meeting with their potential clients through which significant networks were established. The third got office space and accommodation for its staff through the network of Innovation Norway.

They also help firms to build their competence through the provision of various kinds of advisory roles and provision of relevant information. As external facilitators, they also assist firms to enhance their innovative capacity. One firm was able to complete a three year R & D program with financial support from Innovation Norway. Another firm attracted two operating companies on its project to build capacity because it had Innovation Norway on board. The other two firms had no support to building competence from either Innovation Norway or INTSOK.

Another important role of facilitators is the assistance given to firms in their entry into a new market. This takes the form of identifying and introducing firms to potentially new markets or assisting firms to penetrate markets they identify themselves. In relation to the access to market functions played by Innovation Norway and INTSOK, only one firm sought for the assistance of these external institutions before they embarked on their internationalisation. They relied on Innovation Norway for information about how to enter the market and operate in the market as well. Innovation Norway provided the firm with an office and the necessary market information. The other three firms have not benefit from this role of the facilitators.

Furthermore, Innovation Norway and INTSOK aid Trondheim petroleum service companies in knowledge creation. Two firms exploited this function whilst the other two did not. One of the firms engaged two companies through Innovation Norway to enhance technology evolution. These two companies came on board because of Innovation Norway. Another firm is partaking in Innovation Norway's Shale market program to enhance its technology to penetrate the shale oil and gas production. The other two firms had not benefitted from this function.

Also, Innovation Norway and INTSOK help promote the competence of these petroleum service companies. The experiences of the various firms were as follows. Two firms had their competency promoted through meetings organized by INTSOK. Another firm was also promoted by Innovation Norway through participating in its conference, and network meetings. The final firm has not benefitted from this function of the external institutions.

Finally, the provision of financial support is another relevant contribution by the external facilitators. This function is solely performed by Innovation Norway. Three out of the four firms had financial support from Innovation Norway to boost their operations and the importance of this role was not undermined. As one firm had financial support to boost its new technology, another firm had support to promote the demo of its technology. The third firm had support for its R&D project.

Innovation Norway and INTSOK which act as external facilitators to the firms in the Trondheim petroleum service industry play a very key and significant roles in the internationalisation process of these SMEs but these roles are experienced in diverse ways by the Trondheim petroleum service companies. The aid to one company might differ from the support given to another company.

5.2 Recommendations for further studies

A multiple case study of SMEs across countries can be a new area of internationalization of SMEs to be explored. This can give a complete account of a firm's market choice and strategies used in the various market.

An in-depth single case study of SMEs internationalisation across countries can also be a new area to explore. An in-depth knowledge can be obtained from this study in relations to the processes the firm goes through in the internationalisation phases.

A longitudinal in-depth case study of internationalisation of firms can be a new research area that can be explored. This will expose the absolute stages firms go through in their internationalisation process.

Also, a further recommendation is made for a study in a firm's internationalisation process with other internationalisation theories such as the entrepreneurship theory and Network approach to examine how the position of firms in their networking influences their decisions.

Finally, a multiple case study involving more cases can also be a field that can be looked at as it may come up with more contrasting and or similar patterns of a firm internationalisation process.

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Appendixes

Appendix I – Interview guide for petroleum service companies

- Name of company
- Position in the firm
- Main operational activities (service provided)
- Year of establishment
- Year of first international activity
- Motive for going abroad
- Pre international experience
- Do you have strong domestic market
- Any planned strategy for internationalisation
- What entry modes are you familiar with
- How you entered the USA market; export, subsidiary, joint venture, wholly owned or other
- Did you faced any challenge in the initiation of your international activity
- If yes, what are some of the challenges faced during the internationalisation
- How are you now operating in the USA market
- Did you seek for the assistance of an external facilitator,
- If yes, what organisation (s)
- How did they assisted you?
- How do you see their assistance valuable to your internal activity

Appendix II – interview guide for external facilitators

Part 1: Background information (informant)

- Position in the firm
- Any international experience personally

Firm and internationalization process

- General relationship between your institution and your client
- What kind of services do you provide for companies?
- Timing for internationalisation (your view)
- The internationalization process (how your institution assist in the initial stages)
- Role after the firm has internationalised
- the Importance of networks in the internationalization process(your view)

Part 2: Internationalization process and strategies – use of networks

- Do you consider strong domestic market a necessity for internationalisation?
- Do you connect companies within the domestic markets?
- Which Choice of market entry do you encourage your clients to use (export vs subsidiary)
- Critical factors underlying the choice of market entry (organizational resources, customers etc.)
- Establishment in the market – describe the process – use of internal/external resources
- The importance of Norwegian customers for internationalization? (Reference, Piggybacking, referrals, the subsea cluster) your view
- The importance of international customers for internationalization? Your view
- Barriers in the internationalization process (financial, organizational resources, lack of networks cultural distance, lack of commitment etc.) How do you help companies out?