THE ROLE OF KNOWLEDGE IN INTERNATIONALIZATION OF SMALL- AND MEDIUM-SIZED ENTERPRISE

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To my Parents
ABSTRACT

Internationalization is one of the most complicated elements in Small- and Medium-sized Enterprise (SME) expansion. Researchers seem to agree more and more that none of the theories in this field can solely explain the dynamics of the internationalization of Small and Medium-sized Enterprises particularly small knowledge- and service-intensive firms. There are different theories and approaches toward the SMEs’ internationalization; however there is one predictor in common among them: Firm’s knowledge resources (Yli-Renko, Autio, & Tontti, 2002).

Since the value-adding processes of firms are increasingly based on the creation and exploitation of knowledge, the natural focus of attention shifts from the control of static, firm-specific resources to the acquisition, assimilation, and exploitation of firm-specific knowledge (Bettis & Hitt, 1995; Grant, 1996; J.Nahapiet & Ghoshal, 1998). In today’s global competitive landscape, firms succeed not because they have control over scarce resources, but because they have the ability to gain the knowledge, learn and use this learning more efficiently than others. In comparison with big companies SMEs have relatively less resources, which make knowledge very vital for their survival and growth. (Mejri & Umemoto, 2010)

There has not been much empirical research on knowledge resources and capabilities although the importance of knowledge-related process is widely acknowledged. There is a notable limitation in SME literature on influence of knowledge that can only offer limited insight into firm’s foreign market operations. In other words, there is a gap in the literature about the different types of knowledge and their role in the internationalization process and therefore this research has set it goal to answer the aforementioned issues.

This research has used qualitative approach and case study research design, and six semistructured interviews were conducted with small Swedish firms that involved in international activities. Since this is an exploratory study, the data from the six cases was quite manageable. Analysis was conducted by coding the interviews and categorization of the codes. The codes were interpreted and three types of knowledge were extracted based on both the data and theories; Technological Knowledge, Business Knowledge and Market-specific Knowledge. The main characteristics of each company were put together with regard to the three types of knowledge. The next step in analysis was to find out if there were any differences or similarities between the companies when it came to internationalization process. By using the aforementioned results a framework was developed. The framework presents the role of each Knowledge in the internationalization process and is the key finding of this research.

The results from this study indicate the significant role of different types of knowledge as the main source of competitive advantage for SMEs to go to international markets. However the result of this study also designates that the role of knowledge in the internationalization process must be understood in the context of the industry, the company and the people involved.

Keywords

Internationalization, Knowledge-based view, SME, Technological Knowledge, Business Knowledge, Market-specific Knowledge, competitive advantage
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1 Introduction

This chapter introduces the background to why the study of the effect of knowledge on the internationalization process of SMEs is relevantly an inviting topic to study. The problem discussion further underlines how this study relates and contributes to previous studies within the area of knowledge-based view of internationalization. Accordingly, the specific focus of this thesis is expressed through the research questions, purpose and delimitations.

1.1 Background

Over the last decades there has been growing interest in the international operations of firms (Welch & Luostarinen, 1988; Johanson J. V., 1990). Unlike what previous international business literature have claimed that mature international corporations played a main role, Small and medium-sized enterprises (SMEs) have recently attracted broader interest. SMEs are more and more active in international markets, thus contributing to economic growth and prosperity (Reynolds, 1997). Traditionally SMEs restricted their activities to the region which they were located, or stayed inside national boundaries (Pleitner, 1997), whereas today many small and medium enterprises are active internationally.

Internationalization is important issue for both the firms, that usually results in vital growth (Luostariinen, 1980), useful learning outcomes (Zahra, Ireland, & Hitt, 2000) and enhanced financial performance (Lu & Beamish, 2001); and countries, particularly those experiencing balance of payment deficits, have attempted to increase the international activities of their SMEs in order to boost economic growth, cut unemployment and create potential mini-MNEs in the future. (Ruzzier, Hisrich, & Antoncic, 2006)

Although there have been a number of attempts to synthesize the internationalization literature, a single commonly accepted interpretation of “internationalization” is yet to be find. The traditional theories on internationalization are usually divided into (i) behavioral theories (stages theory and network approach) and (ii) theories that borrow their main concepts from the field of economics (Saarenketo et al, 2004). The current thesis is focused on SME’s internationalization context and the internationalization theories focusing on SMEs are discussed as a result.

In Nordic country internationalization of SMEs has traditionally been defined as “the process of increasing involvement in international operations” (Welch & Luostarinen, 1993, p. 156) and this internationalization process has usually recognized as a gradual and sequential, forming from several stages. There are two primary stages models; the Uppsala Internationalization Model (U-model) and the Innovation-related Model (I-model).

Influenced by the behavioral theory of the firm, and Penrose’s theory of knowledge and change in organization (Penrose, 1959), Johanson and Vahlne (1977, 1990, 2003, 2006) developed the
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Uppsala Internationalization Model. U-model is the most prominent model in the stages approach, which focuses on how organizations learn and how their learning affects their behavior. The U-model is the dynamic model in which internationalization of the firm is seen as an increase in the company’s international involvement based on different type of learning. The model suggests that the general and experiential market knowledge and resource commitment of firms (state aspects) affect commitment decisions and current business activities (change aspects). The change aspects, in turn, increase the market knowledge and stimulate further resource commitment to foreign markets in the subsequent cycle (Andersen, 1993). This model entails that firms increase their international involvement in small incremental steps within those foreign markets in which they currently operate. Firms will then enter new markets lying at a greater “psychic distance” due to differences in languages, education, business practices etc. This accumulated knowledge in conducting international operations drives internationalization by impacting entry-mode and country-market selection. (Ruzzier, Hisrich, & Antoncic, 2006, p. 482). There are several studies that have tested the model and according to the recent literature some studies have supported the model while some others have not. This will be further specified in chapter 4.

A more recent perspective to internationalization is network approach. Based on the Uppsala model, Johanson and Vahlne (1990) continue the examination of the process of internationalization by applying a network perspective. One way to analyze a firm’s internationalization is to use the network approach as the starting point because this approach provides an appropriate framework as embedded actors in business networks (Johanson & Mattsson, 1988; Sharma & Keller, 1993). They define internationalization as developing networks of business relationships in other countries through extension, penetration, and integration (Johanson & Mattsson, 1988). It is in the course of established long-term relationships that firms get access to as well as mobilize external resources. These resources are vital because many SMEs lack resources needed for their international business (Buckley, 1998).

Due to the deregulation and liberalization of the markets, and more importantly rapid development in high-tech industries and the globalization’s impact on the SME sector in recent years, an increasing number of new ventures were shown to start internationalizing from inception or soon thereafter (Brennan & Garvey, 2009; Nordman & Melen, 2008). Concepts such as Born Globals, international new ventures, or global start-ups have been introduced by scholars focusing on the phenomenon of early and rapidly internationalizing firms. This accelerated pace of internationalization is mostly related to “high technology, knowledge-based and service intensive firms” (Coviello & Munro, 1997, p. 362). Knight & Cavusgil (2004, p. 11) define “Born Globals” as “Small technology oriented companies that operate in international markets from the earliest days of establishment”. They characterized those firms as small (less than 500 employees), with the annual turnover on average under $100 million, possessing leading edge technology and most of the time products for niche international markets. (Brennan & Garvey, 2009)
Having above-mentioned in mind, internationalization is one of the most complicated elements in a company’s expansion. Researchers seem to agree more and more about that none of the theories presented above can solely explain the dynamics of the internationalization of small and medium-sized enterprises particularly small knowledge- and service-intensive firms. (Saarenketo, Puumalainen, Kuivalainen, & Kylaheiko, 2004).

Despite the fact that there are different theories and approaches toward the SMEs’ internationalization, there is one predictor in common among them. Firm’s knowledge resources is a key predictor of its internationalization (Yli-Renko, Autio, & Tontti, 2002). Erkko et al. (2000) highlighted that knowledge plays an important role in both the process theory of internationalization and “the new venture”/“Born Global” theory of internationalization. Prashantham (2005, p.38) argue “knowledge is at the core of received wisdom on internationalization”. Apparently one of the most important factors in SME’s internationalization to be successful is the firm’s ability to gain and use knowledge.

To investigate the role of knowledge in firm’s internationalization, one needs to draw on the rich and somewhat fragmented field of knowledge management. In that area different typologies are presented by scholars which Nonaka and Takeuchi (1995) proposed a framework for categorizing the dimensions of knowledge which distinguishes between tacit knowledge and explicit knowledge. This is one of the most dominant in the knowledge management field. Turning now to knowledge factors, based on literature about SME internationalization, one type of knowledge that is vital is market knowledge which is emphasized in Johanson and Vahlne approach. The role of market knowledge is to regulate the resources committed to a foreign market by the firm. Oviatt and McDougall’s perspective differs from this view in the way that in addition to market knowledge, they emphasize on the role of (technological) knowledge-intensity in internationalization. Mejri & Umemoto (2010) argue that four factors have been found to be influential on the internationalization process. These include market knowledge and experiential knowledge, which is composed of network knowledge, cultural knowledge, and entrepreneurial knowledge (Mejri & Umemoto, 2010). Different types of knowledge will be further discussed on chapter 4.

In the next sections, the importance of knowledge, the research gap regard to SME’s knowledge resources and the contribution this thesis aim to make to the literature will be discussed.

### 1.2 Problem discussion

Existing research on small and medium-sized enterprises has emphasized that a firm’s knowledge resource is a key predictor of its internationalization (Yli-Renko, Autio, & Tontti, 2002). Since the value-adding processes of firms are increasingly based on the creation and exploitation of knowledge and knowledge-intensive services, the natural focus of attention shifts from the control of static, firm-specific resources to the acquisition, assimilation, and exploitation of firm-specific knowledge (Bettis & Hitt, 1995; Grant, 1996; J.Nahapiet &
Ghoshal, 1998). In today global competitive landscape, firms succeed not because they have control over scarce resources, but because they have the ability to gain the knowledge, learn and use this learning more efficiently than others. In comparison with big companies, SMEs have relatively less resources, which make knowledge very vital for their survival and growth. (Mejri & Umemoto, 2010)

Bearing in mind the importance of knowledge as a central value-adding resource of firm, it is not surprising that the presented theories on the internationalization process of SMEs consider knowledge as a central enabling and driving resource (Eriksson, Johanson, Majkard, & Sharma, 1997; Yli-Renko, Autio, & Tontti, 2002). However theories assign different roles for knowledge in the internationalization process. The Stages Models or ‘internationalization process theory’ consider knowledge, in particular foreign organizing knowledge, as a key regulator of the firm’s tangible and intangible commitments to the foreign markets (Eriksson et al., 1997). The ‘New venture internationalization theory’ considers knowledge more as an enabling resource which leads to firm’s globally mobile offering in the marketplace (Prashantham, 2005; Yli-Renko, Autio, & Tontti, 2002). In the new venture internationalization theory, earlier and more rapid internationalization for ‘Born Global’ firms is possible due to inherent mobility of knowledge, and the process itself started early because of the entrepreneurial vision and capabilities of the entrepreneurial management team. (Yli-Renko, Autio, & Tontti, 2002). On the other hand there are arguments around the same root for the knowledge in different perspectives (e.g., Prashantham, 2005).

In the dynamic, i.e. changing and turbulent environment, the knowledge-based resources are seen to contribute mostly to the performance and success of the firms (Miller & Shamsie, 1996). Interestingly, there has not been much empirical research on knowledge resources and capabilities, although the importance of knowledge-related process is widely acknowledged (Amit & Schoemaker, 1993; Miller & Shamsie, 1996; Spanos & Lioukas, 2001). Melen (2010) argues that there is a notable limitation in SME literature on influence of international knowledge, that can offer only limited insight into firm’s foreign market operations.

Notwithstanding the fact that knowledge is necessary driver in the successful internationalization of the small and medium-sized enterprises, there is still a lack of studies in the mentioned area; especially when it is compared with other viewpoints on SME’s internationalization. (e.g., Networking). Therefore this thesis will provide further research into the role of knowledge in the SME’s internationalization.

### 1.3 Research questions

According to above-mentioned discussions regarding to current research on SME’s internationalization, the thesis will focus on answering the following research question to make contribution to the literature:
➢ What are the different types of knowledge which are influential on internationalization of Small- and Medium-sized Enterprises (SMEs)?
➢ How do different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises (SMEs)?

1.4 Purpose

Since in comparison with multinational companies SMEs have relatively less resources, knowledge has a significance impact on the SMEs survival and growth. Most importantly knowledge is considered as a main source of competitive advantages of the firm in today global competitive landscape. Therefore the Purpose of this thesis is to grasp a clearer understanding of the different types of knowledge which have major impact in the SMEs success in internationalization process and to investigate the role of different types of knowledge in internationalization of Small- and Medium-sized Enterprises in order to develop more coherent viewpoint.

1.5 Delimitation

The theoretical scope of this study is focused on internationalization theories of the SME together with knowledge-based perspective towards internationalization of the firm. The choice of case firms includes a diverse selection of SMEs that already has internationalization activities. The geographical scope of this thesis work has been more specifically narrowed down to Swedish market. Although the author has tried to carry out the study with the strong links to the theories and literature in order to make the result more generalized, but the fact that Sweden is located in the heart of the region where the internationalization is easy for small firms due to the close geographical, cultural and language similarities among Nordic countries should be taken into account while generalizing the result of this study. However, except one case that its international activities are limited to Nordic region, the other cases have experienced in wider range of regions and countries such as EU, US and Asian markets.
# Theoretical Framework and Literature Review

This chapter introduces the theoretical framework for this study; it also presents the underpinning of the scope of internationalization model(s) and knowledge-based view (KBV) guiding the current study. The literature review section provides insight into previous researches that has been done in the area of SME internationalization and knowledge-based view of the firm. These literatures and previous studies will provide the better understanding of both internationalization process of SMEs and the role of knowledge on that process. The chapter ends with the formulation of the specific conceptual framework for this thesis.

## 2.1 MNEs vs. SMEs

Internationalization of Small- and Medium-sized Enterprises (SMEs) differ in many aspects from internationalization of larger firms, referred to as Multinational Enterprises (MNEs). One of the most important of these aspects is limited resources and competences. This key difference related to their size; due to smaller size of SMEs, simply they have more limited resources and competences in comparison with MNEs. This is illustrated in Resource-based View (RBV) of the firms that will be more discussed later in this chapter. The distinction between SMEs and MNEs is obvious regarding their differences in resource capability, mode of operation, and market offerings (Sun, 2009; Pallania, 2009) and the dissimilarity is evidently represented in their respective internationalization behavior (Agndal, 2004, p.10; knight, 2000). For instance, Boter & Lundström (2005), Ruzzier et al., (2007) agree that SMEs’ scarce resources constitute a major barrier to their foreign market expansion prospects, thus small businesses cannot compete on the same level as MNEs on the international stage. One of the most important resources is knowledge. Knowledge plays a key role in internationalization process of SMEs. Later on this chapter, the role of knowledge from knowledge-based view of internationalization will be discussed thoroughly.

## 2.2 SMEs and Internationalization

Unlike previous international business literature, which is firmly rooted in economics, and mature international corporations played a main role, small and medium-sized enterprises (SMEs) have recently attracted broader interest. SMEs are more and more active in international markets, thus contributing to economic growth and prosperity (Reynolds, 1997). Traditionally SMEs restricted their activities to the region which they were located, or stayed inside national boundaries (Pleitner, 1997) however this is not the case nowadays and many Small- and Medium-sized Enterprise are active internationally.

Internationalization is an important issue for both the firms, as internationalization usually results in vital growth (Luostariinen, 1980), useful learning outcomes (Zahra, Ireland, & Hitt, 2000) and
enhanced financial performance (Lu & Beamish, 2001); Countries, particularly those experiencing balance of payment deficits, have attempted to increase the international activities of their SMEs in order to boost economic growth, cut unemployment and create potential mini-MNEs in the future (Ruzzier, Hisrich, & Antoncic, 2006).

During past three decades, the internationalization theories have changed a lot, and newer theories always tried to cover the shortcomings of the previous ones and explain the internationalization of SMEs in a more coherent way in my opinion. Part of the concept evolution was due to the (scholars’) improved understanding of internationalization of SMEs during these years, and the other reason is because of significant technology development during the past two decades and growing the knowledge-intensive industries mainly in ICT and Biotech industries. Figure 1 shows the evolution of concept during past decades.

This emerging field has its origins in the export marketing literature (McNaughton & Bell, 2009).

Figure 1: Evolution of Internationalization theories (McNaughton & Bell, 2009, p. xxvii)

During the late 1970s, the focus of research attention shifted from exporting to internationalization. It started to argue that exporting is just one of a number of alternative entry modes for firm to enter to new markets. This broader concept of internationalization is apparent in the work of Uppsala school researcher (e.g. Johanson and Vahlne, 1977). The received wisdom of this school of internationalization was that internationalization is an incremental process in which firms gradually increase their level of commitment and involvement in foreign markets. This approach to the internationalization was dominant until the mid-1980s, when a dissenting voice was that of Raid (1983, cited in McNaughton & Bell, 2009) who argued many of these stages models were “much too deterministic”. Other authors also challenged the underlying assumption of stepwise progression and increasing foreign commitment of stages theories (Cannon & Willis, 1981, cited in McNaughton & Bell, 2009).

Given these criticisms, as a results, alternative conceptualization of internationalization began to emerge during the late 1980s and early 1990s by appearance the Network perspective as one of
the most influential perspectives. This approach provided an appropriate framework for understanding firms as embedded actors in business networks. Network approach assumed that internationalization occurs in the context of interconnected exchange relationships that evolve in a dynamic manner, as increased mutual knowledge and trust lead to greater commitment between international market actors (McNaughton & Bell, 2009, p. xxvii).

A Resource Based View (RBV) of internationalization also emerged in the 1990s. Scholars who adopted this approach regard firms as a bundle of heterogeneous resources instead of focusing solely on products and markets. More recently, a Knowledge Based View (KBV) of internationalization has emerged. This approach is linked to the RBV since knowledge is considered as one of the key resources of the firm. However this approach is more dynamic than RBV: The KBV regards the acquisition, embedding and renewal of knowledge as a continuous process in order to gain sustainable international competitive advantage (McNaughton & Bell, 2009).

The most significant remark to SME internationalization enquiry occurred in the early 1990s, with the emergence of new stream of research into firms that internationalized rapidly. The concepts such as Born Globals and International New Ventures (INVs) were introduced during this time. As McNaughton & Bell (2009) argues since the mid 1990s, academic researchers and policy-makers alike have increasingly recognized the importance and vital role of these rapid internationalized SMEs on the economic growth and future prosperity. And this trend towards international entrepreneurship is demonstrated in mainstream international business journals.

This chapter is aimed to present an overview of the main theories on internationalization of SMEs in order to make it as clear as possible. The chapter will have also the review the main theories and arguments on the knowledge-based view of the firms with focus on the role of knowledge in internationalization of SMEs. At the end of chapter the conceptual framework presenting the main research concepts will be introduced. This framework will provide the basis for designing and conducting a qualitative study in order to answer the research questions.

### 2.3 The Internationalization Process

In this section the main theories and models of internationalization of the SMEs are presented. The section is started by the detailed overview of Stage models; it is continued by the Network approach to internationalization and Resource-based view, and finally at the end of this section the concept of rapidly internationalizing firms and Born Globals are discussed thoroughly. In the first part, I have concentrated on the Uppsala Internationalization model more specifically because the highlighted role of knowledge in this model and also the process of firm’s knowledge acquisition through experiences in the foreign markets. This model is helping me to investigate the role of knowledge in the context of SMEs’ internationalization process.
2.3.1 Stage models of internationalization

The stages theories suggest that international involvement increase in stages as a result of incremental learning. There are two primary stage models – the Uppsala Internationalization Model (U-model) and the Innovation-related Model (I-model).

**Uppsala Internationalization model**

At the heart of these theories lies the Uppsala Model of Internationalization, which is developed by Johanson & Vahlne (1977, 1990). The model, which has its theoretical base in the behavioral theory of the firm (Cyert and March, 1963, cited in Johanson & Vahlne, 1977) and Penrose’s (1959) theory of the growth of the firm (Johanson J. V., 1990), focuses on the development of the individual firm.

In this model enterprise gradually increase its international involvement by acquisition, integration and use of knowledge about foreign markets and operations and in turn the commitment to the foreign market is increased. As Johanson and Vahlne (1977) argue, the basic assumptions of model are that lack of such knowledge is the main obstacle for firm’s internationalization process and development of international operations, and that necessary knowledge can be acquired mainly through operations abroad (Johanson & Vahlne, 1977).

Johanson & Wiedersheim-Paul (1975) distinguished four successive stages each represents higher degree of international involvement:

- Stage 1. No regular export activities,
- Stage 2. Export via independent representatives (agent)
- Stage 3. Sales subsidiary and
- Stage 4. Production/manufacturing

These sequence of stages is called *establishment chain*. To explain the extension of activities to new market, Johanson & Wiedersheim-Paul (1975) defined the concept of *psychic distance* as the factores such as language, culture and political systems which preventing or disturbing the flows of information between firm and market. The model implies that firms enter new markets associated with successively greater psychic distance.

To explain the incremental characteristic of internationalization, Uppsala model represents the dynamic model in which one cycle of events constitutes the input to the next. According to the model (Figure 2), the distinction is made between State aspect and Change aspects of internationalization. Market knowledge and market commitment (state aspects) affect commitment decisions and current activities (change aspects) (Johanson & Vahlne, 1977; 1990). In the model the concept of market commitment is composed of two factors: the amount of resources committed and the degree of commitment.
Figure 2: Uppsala model of internationalization (Johanson & Vahlne, 1977)

The amount of resources refers to the size of investment in the market (marketing, personnel, etc.), while the degree of commitment refers to difficulty of identifying an alternative use for the resources and transferring them to the alternative use. The concept seems to be close to the concept of sunk cost. (Andersen, 1993)

International activities require both general knowledge and market-specific knowledge (Andersen, 1993). In The Mechanism of Internationalization, Johanson & Vahlne (1990) distinguished two kinds of knowledge: objective knowledge, and experiential knowledge which can only be acquired through personal experience, market-specific knowledge. Market-specific knowledge, including perceptions of market opportunities and problems, is assumed to be gained mainly through experience in the market (Johanson J. V., 1990). This experiential knowledge is the main driver for internationalization of the firm. Experiential knowledge is also assumed to be the primary way of reducing the market uncertainty (Johanson J. V., 1990), and as a result the firm can be expected to make stronger resource commitment incrementally by the gaining experience form the current activities in specific country market. So the current business activities are the prime source of experience in the Johanson and Vahlne model.

Johanson & Vahlne (1977) also distinguished between general knowledge and market-specific knowledge. General knowledge concerns marketing methods and common characteristics of certain types of customers, irrespective of their geographical location depending on similarities in the production process. This kind of knowledge can often be transferred from one country to another (Johanson & Vahlne, 1977).

There are, however, three exceptions. First, firms that have large resources experience small consequences of their commitments. As a result large firms with surplus resources can take larger internationalization steps. Second, when market conditions are stable and homogeneous, relevant market knowledge can be gained in ways other than experience. Third, when the firm
has considerable experience from markets with similar conditions, it may be able to generalize this experience to any specific market (Johanson J. V., 1990; Andersen, 1993).

The Uppsala Model of Internationalization has had a significant influence on studies focusing on the internationalization of the firm and as the authors mentioned in the article, the model contribute to conceptualization in the field of internationalization of the firm and as a result increases the understanding of the development of international operations described in the empirical studies (Johanson & Vahlne, 1977, p. 23).

**Innovation-related models (I-models)**

Innovation-related models are derived from the Roger (1962, cited in Ruzzier, Hisrich, & Antoncic, 2006) conception of the adoption process in which each subsequent stage of firm’s internationalization is considered as an innovation for the firm (Ruzzier, Hisrich, & Antoncic, 2006). There are various stage models which their focus is entirely on the export development process for the small and medium-sized enterprises. Andersen (1993) summarized the most well-known models explaining the internationalization process from an innovation-related perspective (Table 1).

The models in Table 1 focus on learning sequence in connection with adopting an innovation. In other words, the internationalization decision is considered as an innovation for the firm. As it is shown in the Table 1 the models consist of number of fixed and sequential stages. Leonidou and Katsikeas (1996) identified three generic stages: the pre-export stage; the initial export stage, and the advanced export stage (Leonidou and Katsikeas, 1996, cited in Ruzzier et al. 2006). Andersen (1993) argue that the incentive to start the exporting seem to be interpreted differently in the models. The models of Bilkey and Tesar (1977) and Czinkota (1982) presume that the firm is not interested in exporting at stage 1 and there must exist some kind of “push” mechanism or external change agent that initiates the export decision. Whereas in the models of Cavusgil (1980) and Reid (1981) a “pull” mechanism or internal change agent is probably a more relevant explanation as to why the firm moves to the next stage (Andersen, 1993, p. 211). Except for the initiating mechanism, the models are relatively similar and the differences tend to be in the number of stages and terminology used.

Both Uppsala Internationalization models and Innovation-related models can be regarded as behaviorally oriented. The main concept of both models is the incremental and sequential nature of internationalization process of the firm. As Andersen (1993) mentioned, based on the arguments by the authors, the gradual pattern of the firm's internationalization process can mainly be attributed to two reasons: (1) The lack of knowledge by the firm, especially "experiential knowledge," and (2) Uncertainty associated with the decision to internationalize.
Table 12: A Review of the Innovation-Related Internationalization Models (Andersen, 1993)

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<tbody>
<tr>
<td>Stage 1</td>
<td>Stage 1</td>
<td>Stage 1</td>
<td>Stage 1</td>
</tr>
<tr>
<td>Management is not interested in exporting</td>
<td>Domestic marketing: The firm sells only to the home market</td>
<td>The completely uninterested firm</td>
<td>Export awareness: Problem of opportunity recognition, arousal of need</td>
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<tr>
<td>Stage 2</td>
<td>Stage 2</td>
<td>Stage 2</td>
<td>Stage 2</td>
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<tr>
<td>Management is willing to fill unsolicited orders, but makes no effort to explore the feasibility of active exporting</td>
<td>Pre-export stage: The firm searches for information and evaluates the feasibility of undertaking exporting</td>
<td>The partially interested firm</td>
<td>Export intention: Motivation, attitude, beliefs, and expectancy about export</td>
</tr>
<tr>
<td>Stage 3</td>
<td>Stage 3</td>
<td>Stage 3</td>
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<tr>
<td>Management actively explores the feasibility of active exporting</td>
<td>Experimental involvement: The firm starts exporting on a limited basis to some psychologically close country</td>
<td>The exploring firm</td>
<td>Export trial: Personal experience from limited exporting</td>
</tr>
<tr>
<td>Stage 4</td>
<td>Stage 4</td>
<td>Stage 4</td>
<td>Stage 4</td>
</tr>
<tr>
<td>The firm exports on an experimental basis to some psychologically close country</td>
<td>Active involvement: Exporting to more new countries—direct exporting—increase in sales volume</td>
<td>The experimental firm</td>
<td>Export evaluation: Results from engaging in exporting</td>
</tr>
<tr>
<td>Stage 5</td>
<td>Stage 5</td>
<td>Stage 5</td>
<td>Stage 5</td>
</tr>
<tr>
<td>The firm is an experienced exporter</td>
<td>Committed involvement: Management constantly makes choices in allocating limited resources between domestic and foreign markets</td>
<td>The experienced small exporter</td>
<td>Export acceptance: Adoption of exporting/rejection of exporting</td>
</tr>
<tr>
<td>Stage 6</td>
<td>Stage 6</td>
<td>Stage 6</td>
<td></td>
</tr>
<tr>
<td>Management explores the feasibility of exporting to other more psychologically distant countries</td>
<td></td>
<td>The experienced large exporter</td>
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</tr>
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</table>

2.3.2 Network approaches to internationalization

Another way to analyze the internationalization of the firm in the process approach is to use the network approach as a starting point since this approach provides an appropriate framework for understanding firms as embedded actors in business networks (Johanson & Mattsson, "Internationalization in Industrial System- A Network Approach", in Buckley, P.J. and Ghauri, P.N. (Eds), 1993; Ruzzier, Hisrich, & Antoncic, 2006). It is through established long-term relationships that firms gain access to as well as mobilize external resources. These resources are
vital because the lack of them is the driver for many SMEs to go international (Holmlund & Kock, 1998).

Based on the Uppsala model, Johanson & Vahlne (1990) continued an examination of the internationalization process by applying a network perspective. They defined internationalization as the process of developing networks of business relationships in other countries through extension, penetration, and integration (c.f. Johanson & Mattsson 1988). Extension refers to the investment in the networks that are new to the firm, while penetration means developing positions and increasing resource commitments in networks in which the firm already has positions. Integration can be understood as the co-ordination of different national networks (Ruzzier, Hisrich, & Antoncic, 2006, p. 484). Thus, if the relationships between firms are seen as a network, it can be discussed that firms internationalize because other firms in their (inter)national network are so doing. Within the industrial system, firms engaged in the production, distribution and use of goods and services depend on each other due to their specialization. Certain industries or types of markets are more likely to be internationalized given the configuration of the world economy (Andersen, 1993; Ruzzier, Hisrich, & Antoncic, 2006).

In this model the emphasis is on gradual learning and development of market knowledge through interaction within networks. Johanson and Mattson (1993) identified four stages of internationalization: the early starter, the late starter, the lonely international, and the international among others. These stages are the result of combination of micro (firm-to-firm) and macro (firm-to-network) perspectives of networks.

According to the model, internationalization means that the firm establishes and develops positions in relationship with other counterparts in the networks. The strength of the network model lies in explaining the process rather than the existence of multinational or international firms (Ruzzier, Hisrich, & Antoncic, 2006). This process is shown as the establishment of relationships in country networks that are new to the firm (international extension), the development of relationships in those networks (penetration), and connecting networks in different countries (international integration) (Ruzzier, Hisrich, & Antoncic, 2006).

Several propositions emerge from the network perspective on business markets: (1) The role, development and performance of companies will be explained by their ability to develop relationships; (2) Resource development takes place to a large extent between companies; (3) A firm’s internal efficiency, such as in production, is to a large extent dependent on its supplier and customer relations; and (4) The more successful the counterparts are, the better it is for the firm (Hakansson and Snehota 1995, cited in Welch, Welch, Young, & Wilkinson, 1998, p. 67).

Regardless of some shortcomings, network theory can help to enlighten the role of resources, activities, and actors within the networks and the way they affect the different aspects of internationalization processes of SMEs.
### 2.3.3 Resource-based approach to internationalization

The objective of this approach is to develop a dynamic capabilities/resource-based theory of the firm—whether the firm is domestic, international or global. The resource-based view (RBV) is developed in strategic management field and has two major roots: seminal writing on business strategy by K.Andrew (1971, cited in Ruzzier, Hisrich, & Antoncic, 2006) and A.Chandler (1962, cited in Ruzzier, Hisrich, & Antoncic, 2006) among other, and Edith Penrose’s (1952) work called The theory of the growth of the firm characterizing firms as a collection of heterogeneous or firm-specific resources (Ruzzier, Hisrich, & Antoncic, 2006).

The RBV in the context of strategic management concentrates on sustainable and unique costly-to-copy attributes of the firm as the sources of economic rents, that is in other words, as the fundamental drivers of the performance and sustainable competitive advantage needed for internationalization. The important point here is the firm’s ability to attain and keep profitable market position depends on its ability to gain and defend the advantageous position rely on the relevant resources important to the firm (Conner, 1991). *Resources-based models recognize the the importance of intangible knowledge-based resources in providing a competitive advantage* (Ruzzier, Hisrich, & Antoncic, 2006, p. 486). According to above-mentioned discussion, not only the ownership of resources is an important factor for the success, but also the dynamic ability for organizational learning is important for the firm in order to be success in competition and also it is requiered to develop new resources.

According to the diverse character of small firms and their operating environment, there are fundamental complexities in identifying and defining the critical resources needed for their internationalization. Barney (1991) focused on attributes that resources should possess to sustain a long-term competitive advantage; he argues that resources must be valuable, rare, imperfectly imitable and not sustainable (Barney, 1991, p. 105). Grant (1991, cited in Ruzzier, Hisrich, & Antoncic, 2006) proposed that resources must capture durability, transparency, transferability, and replicability. Different perspectives about the characteristics and attributes of resources indicate the fact that these attributes are often broad and unclear and there are not clear boundaries between them.

One of the most promising model among the resource-based models is the model of Ahokangas (1998) (Ruzzier, Hisrich, & Antoncic, 2006). This model concerns resource development and strategic internationalization behavior of small firms combining the strategic and network perspectives of resources. Ahokangas (1998) assumes that SMEs are dependent on the development potential of key internal and external resources, which can be adjusted/developed within the firm and between firms and their environments. This adjustment behavior is analyzed along two dimensions:

1. where do the resources reside; that is, what is their source – are they internal or external to the firm; and
(2) does the development of resources take place in a firm-oriented manner (inward orientation) or in a network-oriented manner (outward orientation)? (Ruzzier, Hisrich, & Antoncic, 2006, p. 487)

From the perspective of the firm, these two dimensions lead to four hypothetical modes of resource adjustment: the adjustment of:

1. internal resources in a firm-oriented mode;
2. external resources in a firm-oriented mode;
3. internal resources in a network-oriented mode; and
4. external resources in a network-oriented mode (see Figure 3).

The most important concern in the modes of resource adjustment is the control over and interdependence between the critical resource stocks.

![Figure 3- Modes of resource adjustment (Ahokangas, 1998)](image)

The first kind of resource adjustment (internal firm-oriented) can be seen as the development strategy of a firm that tries alone to develop the critical resources needed for internationalization by entering into international activities and learning from experience, without depending on externally available resources. The second mode of adjustment is represented by external resources in the development of the firm’s internal resources, such as relationships with various expert organizations, research institutions or universities (external firm-oriented). The third mode is adjustment of internal resources in a network-oriented mode which involves development activities traditionally associated with co-operation in any field from R&D to international after-sales services (usually in the form of alliances between firms), where both partners share an interest in developing resources jointly. The last mode of adjustment (external network-oriented) includes networking behavior that is more than just sharing resource stock interdependencies, it is also about sharing control over the firm’s resources.
Ruzzier et al. (2006) argue that the development of resource-based theory and network perspective seems to have gone hand in hand. In both theories, internal and external resources available to the firm are seen as constituting the total set of resources available to the firm. The point here is that the network approach and the resource-based approaches seem to be merging with the model proposed by Ahokangas (1998) to some extent. According to the objectives of this thesis, it is important to notice that from the entrepreneurial perspective, networks of individuals and the tacit knowledge they integrate (social capital of entrepreneurs) can be seen as a resources themselves. Individuals entrepreneurs connected through networks with others and that is the way they have access to resources and information for their actions.

2.3.4 The Concept of Rapidly Internationalizing Firms and Born Globals

“A company which, from or near its founding, seek to derive a substantial proportion of its revenue from the sale of its products in international markets.” (Knight, 1997, p. 1, Cited in Moen & Servais, 2002); “a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources from and the sale of outputs in multiple countries.” (McDougall, 1994, p.49). these definitions all refer to the new phenomenon which doesn’t follow the traditional incremental internationalization pattern.

The interest in born globals started early in the 1990s, and the increasing number of publications focused on this issue throughout the decade. McDougall et al. (1994) as well as Knight refer to a number of studies which appear to be contradictory with the stages theory of internationalization.

As it is discussed before, the stages theories with the mainstream of an incremental process involving a varying number of stages has been widely used as the basis for most empirical research around the world. However many researchers have accused stages models and approaches for being too “deterministic” and of limited value (Madsen & Servais, 1997). Recently, even more convincing evidence of the limitation of the manifest stages model has appeared in the literature. Research has identified an increasing number of small and medium-sized firms which don’t follow the stages pattern for the internationalization; and in contrast with the traditional approaches, they enter to the foreign markets right after their establishment. Such a companies have been named “born globals (BG)” (Knight G. A., 1997; Madsen & Servais, 1997) or “international new ventures (INV)” (McDougall, Shane, & Oviatt, 1994).

Bearing in mind the contradictory character of born globals, below some of the most important studies in born BGs and INVs are reviewed.

Oviatt and McDougall (1994) in their study that was focused on newly started firms, defined International New Ventures as a business organization that from inception, seek to derive significant competitive advantage from the use of resources from and the sale of outputs in multiple countries. This INV starts out with a proactive international strategy—even though it starts with only one or few employees/entrepreneurs, in contrast with the traditional international process (Madsen & Servais, 1997).
Rely on the study of 24 INVs, McDougall et al. (1994) arrived to the conclusion that stages models fail to provide an appropriate explanation of why such firms operate in international markets rather than just in their home market. Based on the governance structure of activities, they claim that there are key differences between established firms and start-up firms (Moen & Servais, 2002). The latter type of firms will only have few resources left over for expensive investments; therefore, in comparison with established firms, the entrepreneur must rely more on hybrid structures for controlling the sales and marketing activities (cited from Madsen & Servais, 1997). For example they usually have a close personal relationships, joint ventures and etc.

Bell (1995) in his study of small computer software firms found that the process was strongly influenced by domestic and foreign client followship, the targeting of niche markets and industry specific consideration rather than the psychic distance to export markets. He also found very little support for the notion that the firms progress systematically from exporting to other market entry modes, even though he found an increasing commitment to exporting among the responding firms (Madsen & Servais, 1997, p. 563). His argument is that not all firms established themselves with domestic sales before starting foreign sales; this could be regards to prior experiences of the entrepreneur or to the fact that exports were often initiated when searching suppliers abroad.

In contrast to Oviatt and McDougall (1994), McKinsey and Co. (1993, cited in Madsen & Servais, 1997) focused on already established SMEs. In the study conducted for the Australian Manufacturing Council covering 310 firms, the firms were split into two major categories: more traditional domestic-based firms and Born Globals which are the firms that export 75% of their total sales, after less than two years of operation. In his study he mentions that the latter firms generally produce leading edge technology products with significant international niche markets, such as scientific instruments or machine tools. Rennie (1993) describes them as competing on quality and value created through innovative technology and product design. The mainstream Born Global of this study is very close to its customers, flexible and able to adopt its products to quickly changing needs and wants.

Jolly, Alahuhta, & Jeannet (1992) conducted the study that led to somewhat contradictory results in comparison to latter findings: “High Technology Start-ups” must choose a business area with homogeneous customers and minimal adaption in the marketing mix. The reason of this argument is because these small firms do not have the sufficient scale in operations worldwide with the limited resources, therefore they cannot take a multidomestic approach like a large firms.

Also the research carried out from Nordic countries by Lindmark et al. (1994) concluded that the firm’s domestic market is no longer seems to be as important a “learning place” as earlier studies demonstrated (Madsen & Servais, 1997). They also argue that different firms have different routes to internationalization “…based on differences in established contacts and knowledge acquired prior to the initiated new business…” (p.7). It is an important point in their studies that
the examples for those skills obtained prior the birth of the firm are Market Knowledge, personal networking of the entrepreneur, or international contacts and experiences transmitted from former occupation, relations, and education.

As we have seen, there are various findings in studies of Born Globals that are sometimes in accordance with each other but in other instances they are conflicting. The general agreement among all of them is about the fast and immediate pattern of internationalization, and to some extent about the type of governance structure, mainly a hybrid form (Madsen & Servais, 1997, p. 565). Yet there are different opinions about other characteristics of the situation of Born Globals.

To sum up, this is still new and not well defined area of research. Most of the studies are descriptive and conceptual and do not rely on theoretical frame of reference.

2.4 Knowledge-based perspective

A knowledge-based perspective of the firm has emerged in the strategic management literature (Cole 1998; Spender 1996a, 1996b; Nonaka and Takeuchi 1995, cited in Alavi & Leidner, 2001). This perspective builds upon and extends the resource-based theory of the firm initially promoted by Penrose (1959) and expanded by others (Barney 1991; Conner 1991; Wernerfelt 1984).

The knowledge-based perspective assumes that the services delivered by tangible resources depend on how they are combined and applied, which is in turn a function of the firm’s “know-how” knowledge. This knowledge is embedded in and carried through multiple entities including organization culture and identity, routines, policies, systems, and documents, as well as individual employees (Grant 1996a, 1996b; Nelson and Winter 1982; Spender 1996a, 1996b, cited in Alavi & Leidner, 2001, p. 108). Due to knowledge-based resources characteristics such as difficult to imitate, and social complexity, the knowledge-based view considers them as a source of long-term sustainable competitive advantages for the firm. However, although knowledge plays a critical role in firm’s growth, it is not just the existence of knowledge but the firm’s ability to effectively apply the existing knowledge to create new knowledge and to take action that forms the basis for achieving competitive advantage from knowledge-based assets (Alavi & Leidner, 2001, p. 108).

The role of information technologies in affectuating the KBV of the firm is highlighted here. Advanced information technologies (e.g., the Internet, intranets, extranets, browsers, data warehouses, data mining techniques, and software agents) can be used to systematize, enhance, and expedite large-scale intra- and inter-firm knowledge management (Alavi & Leidner, 2001, p. 108). This is more evident in the knowledge-intensive firms and high-tech firms that were discussed in previous section.
2.4.1 Taxonomies of Knowledge

Knowledge is defined as a justified belief that increases an entity’s capacity for effective action (Huber, 1991; Nonaka, 1994). Nonaka (1994) explicated two dimensions of knowledge in organizations: tacit and explicit. Rooted in action, experience, and involvement in a specific context, the tacit dimension of knowledge (tacit knowledge) is comprised of both cognitive and technical elements (Nonaka 1994, cited in Alavi & Leidner, 2001, p. 112). The cognitive element refers to an individual’s mental models consisting of mental maps, beliefs, paradigms, and viewpoints. The technical component consists of concrete know-how, crafts, and skills that apply to a specific context. An example of tacit knowledge is knowledge of the best means of approaching a particular customer: using flattery, using a hard sell, using a no-nonsense approach. The explicit dimension of knowledge (explicit knowledge) is articulated, codified, and communicated in symbolic form and/or natural language. An example is an owner’s manual accompanying the purchase of an electronic product. The manual contains knowledge on the appropriate operation of the product (Alavi & Leidner, 2001, p. 112).

Although there are other knowledge classifications, but the tacit-explicit knowledge classification is widely cited. There are sometime these expectations that tacit knowledge is more valuable than the explicit knowledge. One should take it into consideration that whetere tacit or explicit knowledge is more valuable may indeed miss the point. As Alavi & Leidner (2001) correctly argue, the two are not dichotomous states of knowledge, but mutually dependent and reinforcing qualities of knowledge: tacit knowledge forms the background necessary for assigning the structure to develop and interpret explicit knowledge (p.112).

Understanding the concept of knowledge and knowledge taxonomies is important because theoretical development in the role of different kinds/types of knowledge in internationalization are influenced by the distinction among different types of knowledge. The different types of knowledge and from knowledge management point of view are summarized in Table 2.

2.4.2 Knowledge and Internationalization of SMEs

Despite the fact that there are different theories and approaches toward the SMEs’ internationalization, there is one predictor in common among them: Firm’s knowledge resources are a key predictor of its internationalization (Yli-Renko, Autio, & Tontti, 2002). Erkko et al. (2000) highlighted that knowledge plays an important role in both the process theory of internationalization and “the new venture”/“Born Global” theory of internationalization.

Globalization and the rise of knowledge-based economy seem to shift the resources of competitive advantage towards Schumpeterian profits based on the ability to shape, reshape, and configure the firm’s scarce and difficult-to-imitate assets (Tuppura et al., 2008). The creation, manage and use of knowledge assets are becoming the main driver in achieving of competitive advantage; and consequently has an impact on the firms internationalization.
Certainly, knowledge is at the core of received wisdom on internationalization (Prashantham, 2005, p. 38); but field of knowledge and more precisely knowledge management is rich and somewhat fragmented. To investigate the role of knowledge in firm’s internationalization, the different theories and approaches toward knowledge-based view of the firm’s internationalization will be presented and at the end, in order to provide a starting point for conceptual framework, the linkage between knowledge and internationalization process will be presented.

2.4.3 Knowledge Classification in Internationalization Studies

Uppsala model as the the most dominant model in stages theories, considers knowledge as a basis for firm’s commitment decisions and consequently market commitment. Johanson & Vahlne (1977) classified knowledge based on the way in which knowledge is acquired. One type, objective knowledge, can be taught, and the other, experience or experiential knowledge, can only be learned through personal experience (Johanson & Vahlne, 1977, p. 29). Experiential knowledge is the critical kind of knowledge in this context. It is critical because it cannot be so easily acquired as objective knowledge. They believe that the less structured and well-defined the activities and the knowledge required for internationalization are, the more important is

<table>
<thead>
<tr>
<th>Knowledge Types</th>
<th>Definitions</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Tacit</td>
<td>Knowledge is rooted in actions, experience, and involvement in specific context</td>
<td>Best means of dealing with specific customer</td>
</tr>
<tr>
<td>Cognitive tacit</td>
<td>Mental models</td>
<td>Individual’s belief on cause-effect relationships</td>
</tr>
<tr>
<td>Technical tacit</td>
<td>Know-how applicable to specific work</td>
<td>Surgery skills</td>
</tr>
<tr>
<td>Explicit</td>
<td>Articulated, generalized knowledge</td>
<td>Knowledge of major customers in a region</td>
</tr>
<tr>
<td>Individual</td>
<td>Created by and inherent in the individual</td>
<td>Insights gained from completed project</td>
</tr>
<tr>
<td>Social</td>
<td>Created by and inherent in collective actions of a group</td>
<td>Norms for inter-group communication</td>
</tr>
<tr>
<td>Declarative</td>
<td>Know-about</td>
<td>What drug is appropriate for an illness</td>
</tr>
<tr>
<td>Procedural</td>
<td>Know-how</td>
<td>How to administer a particular drug</td>
</tr>
<tr>
<td>Causal</td>
<td>Know-why</td>
<td>Understanding why the drug works</td>
</tr>
<tr>
<td>Conditional</td>
<td>Know-when</td>
<td>Understanding when to prescribe the drug</td>
</tr>
<tr>
<td>Relational</td>
<td>Know-with</td>
<td>Understanding how the drug interacts with other drugs</td>
</tr>
<tr>
<td>Pragmatic</td>
<td>Useful knowledge for an organization</td>
<td>Best practices, business frameworks, project experiences, engineering drawings, market reports</td>
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experiential knowledge. They also believe that it is mostly important in connection with the activities that are based on realtionship with other individuals such as managerial and marketing work.

One of the most important aspects of experiential knowledge in their argument is the experiental knowledge provide the framework for perceiving and formulating opportunities (Johanson & Vahlne, 1977). Objective market knowledge make it possible to formulate only theoritical opportunities, whereas with experietial knowledge it is possible to perceive ‘conerete’ opportunities and find out how they fit into the present and future activities.

Johanson & Vahlne (1977) also distinguished between general knowledge and market-specific knowledge. The former concerns marketing methods and common characteristics of certain types of customers, irrespective of their geographical location depending on similarities in the production process. this kind of knowledge can often be transferred from one country to another one. The latter is knowledge about characteristics of specific national market such as its business climate, cultural patterns, structure of the market system, and most importantly, characteristics of the individual customer firms and their personnel. Market-specific knowledge can be gained mainly through experiences in the market (Johanson & Vahlne, 1977).

Oviatt and McDougall’s perspective differs from this view in the way that, in addition to market knowledge, they emphasis on the role of (technological) knowledge-intensity in internationalization. Knowledge intensity is highlighted in their study as a enabling resource, which plays a separate role from resource-regulation, leading to the firm’s globally mobile offerings in the market place (Prashantham, 2005, p. 40).

Mejri & Umemoto (2010) argue about four factors have been found to be influential on the internationalization process. These include market knowledge and experiential knowledge, which is composed of network knowledge, cultural knowledge, and entrepreneurial knowledge (Mejri & Umemoto, 2010). In their conext, market knowledge refers to objective or explicit information about foreign markets; information such as the market size, the competitors, the regulations, and so. Experiential knowledge of foreign markets has been considered as essential for firm internationalization. This type of knowledge results from practice and “can only be learned through personal experience” (Penrose,1966). They argue that experiential knowledge includes network knowledge (social and business network; knowledge as the network itself), cultural knowledge (knowledge of language, habits, norms, laws, behaviour...), and the entrepreneurial knowledge (knowledge of the existence of opportunities and exploiting them) (Mejri & Umemoto, 2010).

Saarenketo et al. (2004) devided knowledge base of the firm into three basic knowledge categories:

1. Tacit knowledge (‘know-how’) is embedded in the organization of the firm as a whole or in the teams within the firm organization. Tacit knowledge is generally based on
experience and it is easy to protect against the imitation attempts. It increases cumulative learning based internalities, which enable firms to exploit economies of scale and scope either internally or externally (i.e. by using outsourcing or networking strategies). There are two types of mechanisms (i.e. learning effects) that make the internalities possible; replication (first loop learning) and partial replication (double loop learning). They create pathdependent firm-specific trajectories and help to explain differences between the firms in the same field of industry. The more tacit knowledge is, the more appropriate (i.e. easy to protect, so-called appropriability regime, Teece, 1986) is knowledge and vice versa.

2. *Fully articulated codified information* (‘knowthat’) is knowledge that is a source of positive externalities. The most important mechanisms related to them are knowledge transferring and knowledge creation through integrating. Absorptive capacity of the firm is the key factor when acquiring codified information.

3. *Generic knowledge* is a combination of the two above-mentioned knowledge categories. (Saarenketo, Puumalainen, Kuivalainen, & Kylläheiko, 2004, p. 369)

According to their approach, the firm is considered as a repository of knowledge. The firm which can create, manage and transfer knowledge as a scarce resource (valuable, rare, and hard to imitate) in an international context is more capable of achieving sustainable competitive advantage in the long term.

Eriksson, Majkgard, & Sharma (2000) defined three types of international knowledge as follow:

- Internationalization knowledge (IK)—a firm’s capability and resources to engage in international operations.
- Business knowledge (BK)—competitive situations in specific markets and clients in these markets.
- Institutional knowledge (NK)—information about governance structures in specific countries and their rules, regulations, norms and values.

In a later study, Eriksson et al. (2000) studied the effect of variation in the geographical scope of international business operations on experiential knowledge development in the firm. This variation may come in the form of diversity across products, clients, technologies and markets. The results showed that variation had a positive effect on internationalization, in that firms develop knowledge on internationalization by being exposed to environmental diversity (Cited in Brennan & Garvey, 2009).

In one of the most recent studies on internationalization of Born Globals E.R.Nordman and S.Melen (2008) argue about the impact of different kinds of knowledge on internationalization process of Born Globals in the biotech business. In the study they defined two type of knowledge: *International Knowledge* and *Technological Knowledge*. International Knowledge refers to experiential knowledge about conducting business within an international setting, while Technological knowledge refers to the experiential knowledge about the technology upon which
the Born Global firm’s products are built (Nordman & Melen, 2008, p. 175). They believe that Born Globals can be dichotomized into two subsets: Born Industrials and Born Academiscs. The former includes the Born Globals which were started by the individuals who had a great deal of experience managing international operations and possessed high level of international knowledge; whereas the latter refers to the Born Globals which were started by individuals who possessed high-ranking academic titles but lacked knowledge about foreign market business (Nordman & Melen, 2008, p. 181). These individuals gained technological knowledge while working in academic settings, such as universities and research institutes, but have low levels of international knowledge.

2.4.4 The Role of Knowledge in Internationalization studies

The most important classification of knowledge in international studies was discussed in previous section. In the following section the role of knowledge in internationalization process of SMEs will be discussed.

While a variety of perspectives enlighten the knowledge-based view of the firm, it draws heavily on Penrose’s (1959) theory of the growth of the firm. Penrose posited that a firm’s knowledge of how to productively integrate resources into higher-level capabilities determines its growth (Prashantham, 2005, p. 39). Spender (1994) argues that competitive advantage is not only explained by individual resources but by a different type of resource, in other word, knowledge; this refers to the coordination of resources, which exist essentially in the activity itself and therefore the firm (rather than its individual members). Thus, competitive advantage has come to be seen as based on knowledge, not raw materials; consequently firms create and sustain competitive advantage by protecting valuable knowledge through preventing its migration and reducing its imitability (Liebeskind, 1996, cited in Prashantham, 2005, p. 39-40). Similar notions are expressed by other scholars as well (Demsetz, 1991, p. 172, Kogut and Zander, 1993, p. 627).

That knowledge is a necessary driver in the successful internationalization of the firm becomes clear in light of the concept that internationalization constitutes a form of innovation (Bilkey and Tesar, 1978; Simmonds and Smith, 1968), of which knowledge is a vital source (Penrose, 1959). In addition, knowledge is vital in order to deal with environmental uncertainties that characterize internationalization (Liesch and Knight, 1999) and informing decisions on market selection, mode choice and pace of internationalization that is notably argued by Johanson and colleagues (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975).

Given the link between knowledge and internationalization, in an interesting argument, Prashantham (2005) mentions that despite the apparent tension between the perspectives of Johanson and Vahlne on the one hand, and Oviatt and McDougall on the other, the Penrosian roots can be recognized in both perspectives, albeit with differing emphases (p.40). These differences concern to the type of knowledge which is emphasized in each approach (which is discussed thoroughly in the previous section), the role of knowledge in internationalization, and the source of that knowledge. In Johanson and Vahlne approach, the
type of knowledge that is vital is market knowledge and the role it plays is to regulate the resources committed to a foreign market by the firm; in this context, lack of market knowledge is a significant obstacle to firms’ internationalization. Its main source is the firm itself, through its experience of foreign operations (Johanson and Wiedersheim-Paul, 1975), and (as recently emphasized) network relationships (Johanson and Vahlne, 2003). Oviatt and McDougall believe that, in addition to market knowledge, there is an emphasis on the role of (technological) knowledge-intensity in internationalization; consequently software and biotechnology firms, to cite two popular examples, have been noted for their proactive and early internationalization. They highlighted another type of knowledge, knowledge-intensity, which plays a separate role from resource regulation, that of an enabling resource leading to the firm’s globally mobile offerings in the marketplace (Prashantham, 2005, p. 40). Oviatt and McDougall explicitly identify the entrepreneur as a vital source of a firm’s knowledge resources, from prior professional experience (McDougall et al., 1994 cited in Prashantham, 2005).

In other words, while Johanson and Vahlne emphasized Penrose’s managerial knowledge, Oviatt and McDougall focussed on her entrepreneural knowledge concept (Sapienza et al., 2003; Yli-Renko et al., 2002, cited in Prashantham, 2005). More recently, extending Oviatt and McDougall’s views, Reuber and Fischer (1997) have highlighted the important role of the prior international experience of the top management team as a whole. Brennan & Garvey (2009) findings are in congruent with Prashantham (2005). They argue that the different role of knowledge is not as a barrier to the internationalization process of Born Globals as it is in the U- and I-Models, but as a driver of an accelerated internationalization process (Figure 4). While the earlier models (U- and I-Models) have viewed knowledge as barrier to internationalization in that acquiring market knowledge or the firm developing knowledge as an innovative process, influences the internationalization process in an incremental way. On the other hand the “Born Global” phenomenon is being driven by knowledge in that it is largely present in knowledge based industries and competitive R&D levels are driving a faster and earlier internationalization process (Brennan & Garvey, 2009, p. 129).

Figure 4: The role of knowledge in internationalization by Brennan & Garvey (2009) p.130
Nordman & Melen’s (2008) study on the impact of different kinds of knowledge on Born Global’s internationalization process made a great contribution in this field. They discuss that the level of international knowledge and technological knowledge of founders and managers of Born Global firms are related to firms’ discovery and exploitation of foreign market opportunities. The study shows that both Born Technological and Born Academic (discussed in the previous section) were initially managed by individuals with high levels of technological knowledge. This suggests that technological knowledge has a positive impact on the early internationalization of the investigated firms in the study. Even though all the investigated Born Globals’ founders and managers possess high level of technological knowledge, they differed in in the level of international knowledge. Born Industrial firms’ founders and managers possess high level of both technological and international knowledge while Born Academics founders and managers characterized by their high level of technological knowledge but low level of international knowledge! The differences in their combinations of technological and international knowledge in turn has an impact on the firm’s behavior in discovering and exploitation of foreign market opportunities. Born Academics discover the foreign opportunities in a reactive behavior, they tend to discover opportunities in their ongoing foreign market activities because their discovery is based on a consequence of chance rather than of planned activities however Born Academics appeared to be more flexible because the mentioned characteristics in opportunities discovery. In contrast, Born Industrials were found to demonstrate a proactive behavior toward the discovery of foreign market opportunities. These firms plan the structured internationalization strategies rely on the high level of international knowledge (Nordman & Melen, 2008, pp. 182-84).

In summary, both traditional internationalization process and international new venture perspectives, though apparently contradictory in their manifestations, have sufficient commonality in the knowledge-based view underpinning each to warrant an integrative approach that includes a wider set of knowledge types, role and sources than included in either approach taken on its own (Prashantham, 2005).

2.5 Conceptual framework

This chapter ends with the presentation of conceptual framework that will be used as a guide to conducting the research. As was previously argued, the role of knowledge in internationalization of SMEs is somewhat fragmented; dispite the fact that knowledge plays an important role in the Internationalization of SMEs. The role of knowledge in the SMEs internationalization process is thoroughly discussed in the previous section, just to mention it here in brief, knowledge is the main source of competitive advantage for the firm. It is the main resource for innovation in the firm and as a result is a necessary driver in the successful internationalization of the firm. In addition, knowledge is vital in order to deal with environmental uncertainties that characterize internationalization (Liesch and Knight, 1999) and informing decisions on market selection, mode choice and pace of internationalization that is notably argued by Johanson and colleagues (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975). Furthermore, as Johanson
& Vahlne (1977) argued, SMEs discover and exploit foreign market opportunities based on the knowledge.

After studying different perspectives on types of knowledge that plays role in internationalization, I classified knowledge, which is useful for the firm’s internationalization, into two main types: one type is Objective knowledge, which can be taught and is the same as the one that Johanson & Vahlne, (1977) defined. The other type is Experiential knowledge which is consists of Technological knowledge, International knowledge and Market-specific knowledge.

Technological knowledge is Experiential knowledge about the technology upon which the SMEs’ products are built. It can also be referred as knowledge of operation; I regard this knowledge to be purely technological and devoid of any business element. International knowledge is Experiential knowledge about conducting business within an international setting. International knowledge is about managing relationships with foreign counterparts.

Market-specific knowledge refers to the type of knowledge includes knowing about customers, competitors and market conditions in a specific foreign market, as well as knowing about government and institutional frameworks in that particular country/market. This type of knowledge differ with International knowledge. The latter is not specific to any particular business relationship or foreign market. As Melen (2010) argues, the International knowledge is important because it gives the firm knowledge about its own resources to engage in operations abroad. In doing so, such knowledge enhances the firm’s ability to understand common characteristics among customers, irrespective to their geographical location, and to interact with foreign counterparts in a successful manner.

There are just few studies that specifically investigate the role of different kind of knowledge in internationalization of SMEs. Figure 5 shows the different types of knowledge in different studies and their role in internationalization of SMEs in an integrated framework. Bearing in mind that the role of knowledge in international study is the gap in the literature that this thesis aim is to bridge it and also the fact that there is no definite argument on the role of different types of knowledge on the internationalization process of SMEs, I tried to develop a framework which represent the main theories and studies on the knowledge in the internationalization context. This framework provides a guideline for me to conduct an interviews and qualitative studies in order to explore and identify the role of knowledge in internationalization of SMEs. Non of the relations in the framework is assumed proven in the context of this study and as it was mentioned, they provide the guideline for the author to conduct the qualitative interviews.

Beside the abovementioned types of knowledge, ‘Knowledge Intensity’ is an important factor in this context. Knowledge Intensity defined as the extent to which a firm depends on the knowledge inherent in its activities and outputs as a source of growth (Melen, 2010, p. 148; Autio, Sapienza, & Almedia, 2000). Knowledge intensity is important for internationalization of
an SME. Melen (2010) study on the impact of knowledge intensity on internationalization of SMEs shows both direct and indirect effects of a firm’s knowledge intensity on its knowledge development in foreign markets. Knowledge intensity has an impact on firm’s international growth through its positive effect on the firm’s knowledge development (Autio et al., 2000).

It can improve an SME’s use of its international knowledge, thus also indirectly affecting an SME’s development of specific customer knowledge (can be considered as a part of market-specific knowledge that discussed before). The studies show that the knowledge intensity plays somehow different role in internationalization process of SMEs depends on the number of years from inception that they start to operate abroad (Melen, 2010). For SMEs that begin operating abroad long after inception, knowledge intensity has direct effects on the customer-specific knowledge of the firm. Interestingly, for SMEs that start internationalising in their first three years, knowledge intensity has significant indirect effects (by impacting on international knowledge), but no significant direct effects, on the development of specific customer knowledge (p. 159). That means that knowledge intensity has a direct impact on ‘international knowledge’ in SMEs that rapidly internationalized and indirect impact on the development of their customer-specific knowledge. But knowledge intensity has only positive impact on customer-specific knowledge of the firms that being operating abroad long after inception (see Figure 5).

**Figure 5: Different types of knowledge and internationalization of SMEs**
Nordman & Melen’s (2008) study on the impact of different kinds of knowledge on Born Global’s internationalization process made a great contribution in this field. They discuss that the level of international knowledge and technological knowledge of founders and managers of Born Global firms are related to firms’ discovery and exploitation of foreign market opportunities. The study shows that both Born Technological and Born Academic (discussed in the previous section) were initially managed by individuals with high levels of technological knowledge. This suggests that technological knowledge has a positive impact on the early internationalization of the investigated firms in the study. Even though all the investigated Born Globals’ founders and managers possess high level of technological knowledge, they differed in in the level of international knowledge. Born Industrial firms’ founders and managers possess high level of both technological and international knowledge while Born Academics founders and managers characterized by their high level of technological knowledge but low level of international knowledge! (Nordman & Melen, 2008, pp. 182-84).

I discussed thoroughly about stages theories, especially U-model in the literature review. These theories believe that experiential knowledge can be only learned through gaining experiences in foreign markets in an incremental way (Johanson & Vahlne, 1977). They also regard knowledge as an inhibitor not facilitator, in other words, domestic experience in fact can inhibit, rather than facilitate, firms’ development of knowledge in foreign markets (Rialp et al., 2005). Blomstermo et al. (2004a) found that the duration of domestic activities prior to the inception of foreign market operations is fundamental for a firm’s development of experiential knowledge and that firms with long domestic market experience have difficulty recombining their existing experiential knowledge in the IP. Thus, SMEs that start to operate abroad long after inception may have problems relating their domestic experiences to foreign operations, and the knowledge intensity of these SMEs cannot enhance their ability to use international knowledge. In comparison, SMEs that start their internationalisation shortly after inception find it easier to use international knowledge in their relationships with foreign customers (Melen, 2010, p. 158). Those that discussed above are illustrated in Figure 5 as a coherent framework.

About the Technological knowledge, based on the literature, I assumed that all the SMEs, should posses a Technological knowldege in order to start the internationalization process. Morever Technological knowledge plays an important role in SMEs’ knowledge development. Internationalizing firm should put great effort into developing its knowledge of foreign markets and customers and As Melen (2010) argues correctly, if an SME has invested in its development of technological knowledge, it will have an easier time developing knowledge about foreign customers. The firm’s technological knowledge can also help it develop knowledge from its previous experiences of operating abroad. Therefore, developing technological knowledge can make it easier for a firm to understand how to do business abroad (Melen, 2010, p. 159).
3  RESEARCH METHODOLOGY

This chapter presents the research methodology of this thesis. It presents the research paradigm and strategy, mechanisms for data collection and data analysis as well as the interview guide and the case selection method.

3.1  Research Paradigm

Research paradigm has been defined and argued by series of researchers (N.K.Denzin & Lincoln, 2000; Guba & Lincoln, 2000; Alvesson & Sköldberg, 2009; Crotty, 1998). However all the definitions share the same ground in assuming paradigm as a way of observing through the eyes of the researcher/author which is in fact his/her personal interpretation of the world. Since paradigm acts as a filter for one’s perceptions, it includes subjectivity, personal beliefs, ideas and experiences with which the viewers are introduced to the structural framework and standpoints of the researcher.

Guba & Lincoln (2000) argued in chapter 6 of the book “Handbook of qualitative research” that researcher’s basic and distinct response to the ontological, epistemological or methodological positions shapes the paradigm of that research which is consistent with what Ritchie & Lewis (2003) have stated. Ontological position refers to “what it is possible to know about the world” and the world’s nature; epistemological position point at “how it is possible to find out about the world” or in other word at nature of the knowledge and the ways it could be gained (Ritchie & Lewis, 2003).

Of all different existing paradigms, there are some that have become more acknowledged and employed within both the qualitative and quantitative research, i.e. positivism and (social) constructivism.

Positivism is considered as the main and most distinct viewpoint in the epistemological position by Ritchie & Lewis (2003). This school of thought, unlike interpretivism and (social) constructivism, assumes that it is quite likely to conduct an objective and independent social research by applying natural sciences methods. The reasoning behind such assumption is that human behavior is handled and supervised by law-like regularities. This is complemented by the work of L. Cohen, Duberley, & Mallon, (2004) who have narrowed positivism within the epistemological position (whether the observations are true or false) and the ontological position (unlikelihood of a reality to be altered).

Constructivism is on the other hand a research tradition in which the shared investigations of meanings and explanations set forth multiple realities, as Ritchie & Lewis (2003) have illustrated. Other researches (Crotty, 1998; Berger, 1967; Mertens, 1998; Neuman, 2000; L. Cohen, Duberley, & Mallon, 2004) have also worked on social construction, complemented by Cresswell, (2003) who states the world is socially constructed by human beings as they engage and interact with the world constantly. Subsequently they construct a general and subjective
meaning of each situation through historical and cultural patterns that are active in people’s lives. Therefore the construction of reality is perceived differently for each actor. Alvesson & Sköldberg (2009) have presented the “realist constructivism” paradigm which is combination positivism and (social) constructivism, despite the counter standpoints of them. “Realist constructivism” indicates the social nature of the construction process. He includes both human and non-human actors in his real construction definition. The latter paradigm is closer of the other two to what I have been working on in this research and I can see the influence of both on my work. The constant change in the social interactions and the world around us questions the intact reality of the positivism paradigm however the realist constructivism can offer reality modification or construction built by actants through social interaction. My work is based on the mentioned facts as I see the social interaction as a modifier for present realities, or constructor of new ones that is accepted and considered in the same manner by each of those actors.

3.2 Way of Reasoning and Understanding

There are two models of reasoning in qualitative inquiry that are commonly regarded as exclusive alternatives in qualitative research: Inductive and Deductive approaches (Alvesson & Skoldberg, 2009; Haig, 2005). But there are other possibilities that one of them is Abductive approach.

An inductive approach conducts a number of single cases and generates a generally valid assumptions based on the observations from all those cases (Alvesson & Skoldberg, 2009). On the contrary, the deductive approach carries on form general rules and theories and asserts that this rule clarifies and explains the single case (Alvesson & Skoldberg, 2009, p. 3). The deductive arguments bear on the information or knowledge contained in their grounds, but they do not add new information or knowledge. However, inductive research generates knowledge and adds-up to its weight (Haig, 2005, p. 304). The former approach can be less risky because It assumes the general rules always hold true, therefore also in the current cases under study. While the latter approach, is risky since it concludes a general truth from a collection of single facts (Alvesson & Skoldberg, 2009).

There is another type of approach which is called abduction. The idea of abductive reasoning is rooted back to Aristotle, but American scholar Charles Sanders Peirce (1931-1951) brought it to the modern scientific literature. Recent developments in the fields of philosophy of science, artificial intelligence, and cognitive science more generally (e.g., Josephson & Josephson, 1994; Magnani, 2001; Thagard, 1988, 1992, cited in Haig, 2005) have built on Peirce’s ideas to significantly advance our understanding of abductive reasoning.

Abductive approach distinguishes itself from induction and deduction by adding understanding to the research context. Although it contains traces of both approaches but it is not a simple ‘mix’ of them. Abductive approach is more prominent compared to the other two not only because of
its successful attainment in promoting the empirical area of implication but also due to the properly adjusted and refined theory conception. Abduction keeps the originality of both methods by using an empirical basis as the start point, like induction, and at the same time it accepts the theoretical preconceptions as it is the case of deduction. Using Abductive approach as the point of departure, the process is changed back and forth between the former theories and the available empirical facts. The method is more advantageous since this combination acts as a gap filler for the fields that each of the methods cannot elaborate single handedly. Additionally Abductive approach makes a research distinctively different by adding realistic and flexible weight to it (Alvesson & Skoldberg, 2009).

This thesis has based its theoretical foundation on the “internationalization of Small- and Medium-sized Enterprises” and the “knowledge-based view of the firm”. The conceptual framework was built based on theory (deductive approach) to provide the researcher with the solid insight in designing the interview guideline. The data was presented in a narrative way, coded, categorized and interpreted (inductive approach) along the way with the deductive approach. The procedure is thus consistent with the abductive approach which is elaborated in the previous paragraph.

### 3.3 The Research Method: Qualitative methodology

Internationalization is one of the most complicated elements in a company’s expansion. Researchers seems to agree more and more about that none of the theories presented in previous chapters can solely explain the dynamics of the internationalization of small and medium-sized enterprises particularly small knowledge- and service-intensive firms (saarenketo, Puumalainen, Kuivalainen, & Kylaheiko, 2004); Moreover there is still the lack of study in the area of knowledge and its role internationalization of SMEs.

Based on above-mentioned discussion, I conduct qualitative research because the issue needs to be explored. I also conduct qualitative research because I need complex, detailed understanding of somewhat fragmented of the area and more specifically the issue concerns this thesis. As Creswell (2007) argues, we conduct qualitative research when we want to hear individuals stories, experiences, hear their voices. In the context of this thesis, qualitative research is simply more fit with the research questions and thesis objectives because knowledge the role of knowledge in internationalization of SMEs is not explicit enough to conduct a quantitative research. I need to perceive the view of founders and managers and ‘how’ they use the knowledge in their international activities and that is only possible through flexibility of qualitative research. It provides me to understand the context and setting in which SMEs use knowledge for internationalization.

Finally, I use qualitative research because there are partial and inadequate theories exist for the internationalization of SMEs especially with the focus on the role of knowledge, and those do not adequately capture the complexity of the problem this research is going to answer.
Commit to extensive time in the field. The investigator spends many hours in the field, collects extensive data, and labors over field issues of trying to gain access, rapport, and an “insider” perspective.

### 3.4 Research Strategy: Case study

The aim of this thesis is to identify the different types of knowledge which are influential on internationalization of SMEs and to investigate the role of different types of knowledge on internationalization of Small- and Medium-sized Enterprises. For the purpose of which research design is appropriate to fulfill the aim of this thesis the following aspects were considered: (a) the type of research question posed, (b) the extent of control an investigator has over actual behavioral events, and (c) the degree of focus on contemporary as opposed to historical events (Yin, 2009, p. 8).

According to the thesis research questions that are mentioned below, both “what” and “how” questions in this context are tend to be exploratory.

- What are the different types of knowledge which are influential on internationalization of Small- and Medium-sized Enterprises (SMEs)?
- How do different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises (SMEs)?

“How” questions are more likely lead to the use of case studies, histories and experiments as the preferred research methods. This is because such questions deal with operational links needing to be traced over time, rather than mere frequencies of incidence. While “what” question in this thesis is exploratory, still the other qualitative methods could be used to answer this question. But taking into account the contemporary set of SMEs and the fact that I access to the SMEs founders and managers and it is possible to interviews the persons involved in the internationalization of those enterprises make the case study option more suitable for the aim of this study.

Finally, according to Yin (2009), Case study is preferred in examining and studying contemporaray events, but when the relevant behaviors cannot be manipulated by researcher. According to all the reasons mentioned above, the case study is the best fit in order to meet the objectives of this thesis.

### 3.5 Research Design: Multiple-Case Study

When there are choices, here the various SMEs, multiple-case design is preferred over single-case design (Yin, 2009). The chances of doing a good case study will be better in multiple-case design. Also in the context of current study, I believe that the analytic benefits from having multiple cases may be substantial. Moreover, taking into account the research questions, in order
to come up with coherent results about the internationalization of SMEs I need to conduct the study on different types of SMEs to gain the broader and more comprehensive image of the internationalization process of SMEs and the role of knowledge in internationalization process.

### 3.6 Data Collection

As mentioned in section 3.2 a qualitative approach is chosen for conducting the empirical part of this thesis. Among the existing qualitative data collection types, interviews were selected for data collection. Interview as a qualitative data collection method has several advantages: It is targeted-focuses directly on the case study topics, insightful-provides perceived causal inferences and explanations, also allow researcher control over line of questioning, and for the case of this thesis, participants can provide historical information about how they started to go international (Yin, 2009; Creswell, 2007)

#### 3.6.1 Semi-Structured Interviews

There are different types of interviews such as structured, unstructured, semi-structured and group interview that could be used as a data collection approach in the qualitative research. The aim of this thesis is to explore the role of knowledge in internationalization of SMEs and understanding how different types of knowledge impact on internationalization. Based on the literature and theories, I have developed the conceptual framework in the previous chapter which guides me to conduct the interviews. Due to the complexity of knowledge, the type of interview selected should have a kind of structure (based on the conceptual framework), and at the same time provide enough room for the interviewees to express their points of view and allow the interviewer to follow up on interesting new information proposed by them; especially in the case of this study I assume that most of data that I need will be collect indirectly through the interviewees response to the questions. This analysis led to the selection of a semi-structured interview.

In semi-structured interview researcher has a list of questions on the specific topic to be covered, often referred to as an interview guide which will be discussed in the next section, but the interviewee has a great deal of flexibility in how to reply (Bryman & Bell, 2011, p. 467). In this type of interview questions may not follow on exactly in the way outlined in the schedule. Based on the replies and things said by interviewee, questions that are not included in the guide may be asked, but all the questions should be asked and similar wording will be used from interviewee to interviewee (Bryman & Bell, 2011). As they argue in this type of interview the process is flexible and the emphasis must be on how the interviewee frames and understand issues, and that is the why the interviewer views as important in explaining and understanding events, patterns, and forms of behavior. According to all above-mentioned, the nature of knowledge, and the complexity of internationalization process of SMEs, I believe that semi-structured interviews are fit the best for this research’s method of data collection.
3.6.2 The interview guide

The interview guide for the semi-structured type of interview includes an outline of topics to be addressed during the interviews, or it can be detailed sequence of carefully worded questions (Kvale & Brinkmann, 2009, p. 130). The interview guide designed for this research (see Appendix) is guided by conceptual framework (Figure 5) that was developed in previous chapter. As it was mentioned before, the conceptual framework here is representative of most important types of knowledge that were identified in theory chapter and the role that they play in internationalization of SMEs.

The interview questions can be evaluated regard to both the thematic aspect and the dynamic aspect. As Kvale & Brinkmann (2009) discussed, the questions can be evaluated thematically considering knowledge production, and dynamically with regard to the interpersonal relationship in the interview.

For the case of this study, I developed two interview guides, one with the project’s thematic research questions and the other with interview questions to be posed, which take both thematic and dynamic dimensions into account. As Kvale & Brinkmann (2009) mentioned, the researcher questions are usually formulated in a theoretical language, while the interviewer questions should be expressed in the everyday language of the interviewee (p.132).

The aim of this interviews is mainly to explore first, what is the role of knowledge in the company (is the company knowledge-intensive or not?), second what type of internationalization process did the company went through, and third, what are the role of different types of in the internationalization process of company. In order to reach to the aim of this study, the questions are categorized based on the abovementioned topics. The questions for each of the topics are also aimed to be open-ended. Follow-up and specifying questions are also designed to help interviewer for further understanding and to ensure the important issues would be addressed during the interview.

3.6.3 Interviews Procedure

The interviews were conducted within a one month period, consisted total sample of six Small- and Medium-sized Enterprises with the headquarters located in the city of Umeå. All the interviews were conducted face-to-face.

With the intention of finding the SMEs that their statuses are fitted to the selection criteria of this study, I contacted the Uminova and also Mats Nordström, the Head of Corporate Connections of the Business School (through my supervisor), in order to get the companies’ contact information.

In order to arrange the meeting with the firms, first I sent an email with general information about the thesis and after that I contact them by telephone to fix an appointment with the founders, CEOs or the person in charge of international activities of the firm. At this stage, I explained the aim of study in more detailed and we both agreed on the time of the meeting.
Before each interview, I explained briefly the aim of this research and the kind of data I required from them. In total six interviews were recorded and transcribed.

Also I had some informal conversations with the interviewees; and in two cases I had short visits from the companies. These allowed me to grasp the better understanding the interviewees and companies, how they work and what are their main concerns in running their small businesses (some of the relevant data are presented in the chapter 4).

**Table 14: Research and interview questions**

<table>
<thead>
<tr>
<th>Researcher Questions</th>
<th>Interviewer Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What types of knowledge have they used to initiate the idea?</td>
<td>Please describe the background of how the business idea was initiated?</td>
</tr>
<tr>
<td>What is the company’s specific competence and how did it contribute to development of the business in foreign markets?</td>
<td>Who else were in idea generation and what were their roles?</td>
</tr>
<tr>
<td></td>
<td>What is your specific competence and how it contributed to development of business idea?</td>
</tr>
<tr>
<td>What types of internationalization did they have?</td>
<td>When and how did you decide to start international activities?</td>
</tr>
<tr>
<td>How did different types of Experiential Knowledge affect SMEs to start the internationalization process?</td>
<td>How did you start internationalization process?</td>
</tr>
<tr>
<td></td>
<td>How did you choose the foreign target market?</td>
</tr>
<tr>
<td>How did they manage to be successful in international markets and how did they conduct a business? (exploring the role of knowledge)</td>
<td>To what extent did you rely on your experiences to go international?</td>
</tr>
<tr>
<td>Is the company knowledge-intensive or not?</td>
<td>To what extent are the chosen business contacts dependent on your previous experiences?</td>
</tr>
<tr>
<td></td>
<td>What were the main dilemmas for you to start internationalization and how did you figure them out?</td>
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<tr>
<td></td>
<td>What was the main factor(s) for your company success in abroad? (What is your main competency in compare with competitors that made you successful in that market?)</td>
</tr>
<tr>
<td></td>
<td>How is your relationship with customers do you depend on them for product/service development or do they depend on you?</td>
</tr>
<tr>
<td></td>
<td>How many patents does your company have?</td>
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</table>
3.6.4 Definition of Research Sample

For the purpose of this thesis, deep understanding of “The role of knowledge in internationalization process of SMEs” is needed; this is why qualitative research as an approach and semi-structured interviews as a data collection method are chosen. The definition of research sample plays and how to select the cases is perhaps one of the most important issue in the research. It is important to decide the target population that is to be used for this study includes those firms that will be represented in the study. The sufficient and relevant information that will allow the detailed analysis of the study is mostly based on the precision of this process.

3.6.5 Sampling Strategy

How to select the cases is perhaps the most important issue in the case study research (Ghauri & Firth, 2009; Eisenhardt, 1989). The sampling in the case study research must be distinguished from the sampling logic commonly used in survey. As Yin (2009, p.53) argues, the major insight in this type of research is to consider multiple cases as one would consider multiple experiments—that is to follow a “replication” design. This is far different from multiple respondents in a survey. The Replication logic is similar to multiple experiments as Yin argued. Upon exploring a significant finding from a single experiment (in the context of this thesis “case”) , an ensuring and pressing priority would be to replicate this finding by conducting a second, third, and even more experiments.

Eisenhardt, (1989, p. 537) also mentioned that the sampling of cases from the chosen population is unusual when building theory from case studies. Such research relies on theoretical sampling. In the theoretical the cases may be chosen to replicate previous cases or extend emergent theory, or they may be chosen to fill theoretical categories and provide examples of polar types. While the cases may be chosen randomly, random selection is neither necessary, nor even preferable (Eisenhardt, 1989). Purposive or theoretical sampling according to David & Sutton (2011), is the type of sampling in which the units are selected according to the researchers’s own knowledge and opinion about which ones they think will be appropriate to the topic area (David & Sutton, 2011, p. 232).

In this type of sampling, each case must be carefully selected. The concept of purposeful sampling is used in qualitative research. In purposive sampling method, the inquirer selects individuals or firms for study because they can purposefully inform an understanding of the research problem that central phenomenon in the study (Creswell, 2007, p. 125). This method ensures that the relevant characteristics being studied are covered in the sample and also all cases sharing some features that made them comparable in term of industry, type and similar features (Ghauri & Firth, 2009; Ritchie & Lewis, 2003). The firms were selected for this study is purposely selected to reflect the particular features of the selected group. This selection should be based on criteria that are consistent with the research problem. The cases should correspond to the theoretical framework; as a result, an important step in all of these replication procedures is
the development of rich, theoretical framework (Ghauri & Firth, 2009; Yin, 2009). The theoretical (conceptual) framework in this study is considered as a guideline to conducting the case studies, and as Yin (2009) describes, the vehicle for generalizing to new cases.

3.6.6 Size of Research Sample

As it was discussed in the previous section, the *purposeful sampling* has been chosen as a sampling strategy for this research. The firms selected for this study were purposely selected to reflect the particular features of the selected group. This type of sampling is characterized by having a small research sample which may vary depending on the research. Yin (2009) suggested that if all the cases take place as predicted, 6 to 10 case studies, in the aggregate, would have provided convincing support for the initial set of propositions. Nevertheless as Kvale & Brinkmann (2009) have stated, the interviews are conducted until *saturation* is reached which means that new data doesn’t bring new knowledge to the study.

In the case of this thesis, the aim is to investigate the role of knowledge in internationalization of SMEs apart from the role of Industry section or other factors which make SMEs’ field heterogeneous. The data collection reached saturation upon the sixth interview however the last (6th) interview was conducted in order to take precautions.

3.6.7 Selection Criteria

The target population of this study are Small- and Medium-sized Enterprises (SMEs). Based on the population to be studied, a set of criteria were established to determine the most appropriate respondents for the study. Table 4 presents the criteria that are important for determining the samples.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small- and Medium-sized Enterprises</td>
<td>Small and Medium-Sized Enterprises (SMEs) are defined by the European Commission’s Centre for Enterprise and Industry as any micro, small and medium-sized enterprises that has an overall headcount of less than 250 employees, and a turnover between 2 million Euro and 50 million Euro or a balance sheet total between of 2 million Euro and 43 million Euro (European Commission, 2005).</td>
</tr>
<tr>
<td>Internationalization</td>
<td>Internationalization is the process of increasing involvement in international operations (Calof and Beamish, 1995 Cited in (Ruzzier, Hisrich, &amp; Antoncic, 2006))</td>
</tr>
</tbody>
</table>
It is important to decide the target population that is to be used for this study including those firms that will be represented in the study. As Cooper (1984) mentioned, the next stage is to assess the accessible population, the population to which we can have access (Cited in Ghauri & Firth, 2009). The SMEs vary in terms of their technology (High-tech vs. Traditional) and also the way they go international (Born-globals vs. the ones which follow stages approach to internationalize). But as I mentioned before, the accessible population considering the time available for the study, financial resources for travelling, personal contacts and other practical issues are of great importance.

Due to limitations that I faced during the thesis work, the SMEs were chosen among the Swedish SMEs with the headquarters that located in Umeå.

3.7 Data Management and Analysis

Analyzing data is the heart of building theory from case studies, but interpreting and analyzing qualitative data is perhaps both the most difficult and the least codified part of the process (Ghauri & Firth, 2009; Yin, 2009; Eisenhardt, 1989). The analyzing part of the case study research is considered as most difficult and time consuming task because I believe that it is much dependent on researcher’s own style of thorough empirical thinking and as Yin (2009) argues it should be along with the sufficient presentation of evidence and careful consideration of alternative interpretations (Yin, 2009, p. 127).

Analyzing case study evidence will be more coherent and useful if the researcher knows what to look for. For the aim of this thesis, the role of different types of knowledge (please see section 2.5, Conceptual framework) is the main objectives and I am trying to answer to this question:

- How do different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises (SMEs)?

Overviewing the relevant literature and theories of internationalization of SMEs and knowledge management in previous chapter, made it possible to develop the coherent conceptual framework which the interview guide was based on that. Developing both thematic and dynamic interview guide made it possible for me to relate the evidence and collected data to the research questions and theoretical framework.

In order to achieve the abovementioned objectives, the following section will discuss the analytic strategy and techniques that I am using to analyze the case study evidences.

3.7.1 Analytic Strategy

The first and most preferred strategy is to follow the theoretical propositions that led to the case study (Yin, 2009, p. 130). The data collection plan for this thesis have been shaped according to
theoretical propositions and therefore this analytic strategy is the most preferred one for the aim of this thesis.

3.7.2 Data Management and Analytic Technique

As it was mentioned before, the analytic strategy is based on theoretical proposition (Yin, 2009). It means that the analysis will be conducted based on the theoretical framework and also the conceptual framework as a guideline.

As Creswell (2003, p.190) stated, the process of data analysis entails making sense out of text and image data and it involves preparing the data for analysis, conducting different analysis, moving deeper and deeper into understanding the data, and making an interpretation of the larger meaning out of the data.

Creswell (2003, p.191) described five steps as a generic analytic process for qualitative inquiries. To get to the ideal situation, I blend the generic steps with the specific research design steps of this study.

**Step 1- Organize and Prepare the data for analysis**

After the data collected from 6 interviews, each interview was transcribed immediately after the data was gathered. The transcription was done verbatim from the recorded interview and in some cases I added my observation during the company visit as a separate note in order to help me in the data analysis. The observations are highlighted and are not mixed with the data gathered during the interviews.

**Step 2- Read through all the data**

As Creswell (2003) described the first step is to obtain a general sense of the information and reflect upon its meaning. In order to meet this, in the Chapter Four I discussed the interviewees answered to make them more clear and also get the general impression of overall depth and use of information.

**Step 3- Begin detailed analysis with a coding process**

The coding is the process of organizing the material into chunks before bringing meaning to those (Rossman & Rallis, 1998, s. 171). Charmaz (2006) also stated the coding as “naming segments of data with a label that simultaneously categorizes, summarizes and accounts for each piece of data” (Charmaz, 2006, s. 43). In order to reach to the aim of study through empirical data, researcher can use of a clear operational definition which emphasizes the main category of information (Yin, 2009, p. 128 & 129). The intention of this study is to determine the different types of knowledge which are influential in the SMEs’ process of internationalization and also to discover the role of different types of knowledge in internationalization process of SMEs. To
address those objectives, the data is categorized based on the interview guideline questions as followed:

- Company background and Idea generation process
- Company competency
- Starting the international business
- Doing business in international markets
- Knowledge intensity

The above-mentioned categories are defined in the context of this thesis and their aim is to get the overall view of internationalization process of the SMEs. The research questions are connected to the interview guideline questions through the above-mentioned categories and the researcher questions that are presented in Table 3.

**Step 4- Use the coding to generate a description of the setting as well as categories**

In this stage, the researcher generates a description for all the categories and uses the coding to generate a small number of themes or categories. This will help the researcher to build additional layers of complex analysis beyond identifying the themes.

To get to the better understanding of the data gathered in the interviews and also in order to address the research questions precisely, this study is taking advantage of *Questioning* as an analytic technique. The purpose behind the use of questioning as Strauss & Corbin (1990, p. 77) argued is to open up the data: think of potential categories, their properties and dimensions. Also to get to build additional layers that help me as a researcher to get to the better interpretation of the internationalization process of SMEs and the role of knowledge in that process, the following Table is developed to analyze the data in a more solid way (Table 5). After decoding, understanding, and interpreting the the empirical data based on the theories discussed before, the Table will facilitate the data analysis process. The Degree of knowledge, Source of knowledge, and the level of firm’s knowledge intensity will be measured based on both the theoretical framework and empirical data.

**Table 16: Companies knowledge status**

<table>
<thead>
<tr>
<th>Company C-04</th>
<th>Technological Knowledge</th>
<th>Business Knowledge</th>
<th>Market-specific Knowledge</th>
<th>Knowledge intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea generation</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Source:</td>
</tr>
<tr>
<td>Source:</td>
<td>Source:</td>
<td>Source:</td>
<td>Source:</td>
<td></td>
</tr>
<tr>
<td>Starting the internationalization</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Source:</td>
</tr>
<tr>
<td>Source:</td>
<td>Source:</td>
<td>Source:</td>
<td>Source:</td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Degree:</td>
<td>Source:</td>
</tr>
</tbody>
</table>
The Table above, Table 5, was used for all the six cases under study to make it possible for me to compare the companies in terms of degree of different types of knowledge in different stages of internationalization and the sources of those knowledges. This approach facilitates the identification of similarities and differences between the SMEs’.

**Stage 5- Making an interpretation or meaning of the data**

“What were the lessons learned captures the essence of this idea” (Lincoln & Guba, 1985, cited in Creswell, Research Design, 2003, p. 194). In this stage the framework as a contribution of this study is presented based on the literatures, theories and the empirical data case studies.
4 Empirical Data

This chapter aims at presenting the data collected via the interviews. The chapter is divided to different sections based on the thematic interview guide. The aim is to grasp a complete picture of internationalization process of the companies under study with the concentration on the impact of different types of knowledge on the process. The data are supported with the researcher’s comments and descriptions in order to facilitate the process of data analysis.

The previous chapter presented a description on how the empirical data was collected, as well as an introduction about how the data will be managed and analyzed. In this chapter a more in depth description about the way the data was handled and analyzed is presented. The chapter is structured according to the thematic aspect of interview that was discussed in previous chapter. The questions developed from the methodological framework discussed in chapter two.

As it is discussed before the aim of this interviews is first handedly to explore what type of internationalization process did the company went through, second, what are the roles of different types of the internationalization process of company, and third, what is the role of knowledge in the company (is the company knowledge-intensive or not?).

Based on above-mentioned discussions, the chapter will begin with a brief overview of the background for the companies who agreed to be interviewed, and will continue with the presentation of the main findings from the interviews: starting from concepts related to internationalization process of the firms, followed by the role of different types of knowledge in the process, and finishing with the general role of knowledge (is the company knowledge-intensive or not?)

4.1 About The Companies

The background information of the companies that were interviewed in this study is very important in the terms of the company’s industry sector, the foundation time of the company, the idea generation process, and the current market of company. These background aspects alongside with the data about the internationalization process of the company will provide me with broader and better understanding of the internationalization process of the companies and the role of different types of knowledge in that process. The following section briefly overviews the background of the companies under study. Table 6 presents a brief overview of the companies and the section continues with the more in depth background information.
Table 17: The companies’ overview

<table>
<thead>
<tr>
<th>Interview code</th>
<th>Company’s origin</th>
<th>Year of creation</th>
<th>Year of internationalization</th>
<th>Industry sector</th>
<th>Interviewee position</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-01</td>
<td>Swedish</td>
<td>2007</td>
<td>2011</td>
<td>ICT</td>
<td>Founder/CEO</td>
</tr>
<tr>
<td>C-02</td>
<td>Swedish</td>
<td>2000</td>
<td>2000 (Global-based)</td>
<td>Health care</td>
<td>CEO since 2007</td>
</tr>
<tr>
<td>C-03</td>
<td>Swedish</td>
<td>1998</td>
<td>2000</td>
<td>Systems for secure communication (Lift industry)</td>
<td>Sales director</td>
</tr>
<tr>
<td>C-04</td>
<td>Swedish</td>
<td>2007</td>
<td>2008</td>
<td>Hair extensions</td>
<td>Operations manager</td>
</tr>
<tr>
<td>C-05</td>
<td>Swedish</td>
<td>2006</td>
<td>2008</td>
<td>Biotech</td>
<td>Founder</td>
</tr>
<tr>
<td>C-06</td>
<td>Swedish</td>
<td>1999</td>
<td>2002</td>
<td>Provider advanced simulators for operator training</td>
<td>Key accounts manager</td>
</tr>
</tbody>
</table>

4.2 Companies History and Profile¹

4.2.1 The company C-01

The company C-01 invents and develops software and solutions with a human centered approach to make information, environments and technology available to everyone. The company is based on Radio-Frequency Identification (RFID) technology and speech synthesis technology. The company was founded in 2007. The head quarter is located in central Umeå, and a sale office is located in Stockholm city.

Business idea initiation

The business idea originated in research at the Institute of Design at Umeå University in collaboration with the libraries in the Umeå region in the project Library 2007. The project was founded by European Union in the Umeå region and has worked on the development of the libraries and accessibilities to the libraries on both web and physical base. He (interviewee) was working with Umeå institute of design as interaction designer. The concept of this idea was one

¹ The part of general information is from the companies’ official website
of the solutions in the project. A team involved with the idea however they are not part of the company. The interviewee was the one who owned the idea.

His knowledge in User-oriented design alongside with his knowledge about the users’ needs led him to come up with the business idea:

“It was my user oriented design view that generated the idea, we asked the users about their needs, and the concept is developed, the technologies exist out there and we just combine it in a better way to answer users’ needs.”

4.2.2 The company C-02

Company C-02 was established in 2000 and currently operates in the Uminova Science Park in Umeå. Company C-02’s is based on resonator sensor technology. The company formation is the result of joint research by the professor and co-workers at the university in Japan, and the Centre for Biomedical Engineering and Physics at Umeå University in Sweden.

Business idea initiation

It was sort of a joint venture (research collaboration) between Umeå University and Nihan University in Japan, when business collaboration between a professor at Nihan University in Japan a professor at Umeå University shaped based on mutual interest. It took some venture capitalist to give the money to start the business. The idea was to develop the product for the health care sector based on the resonance sensitive knowledge. The basic technology was there, but since then there were lots of development. The Japanese influence is very low for the moment. It was for the first 4-5 years and since then they took it by themselves till here.

Company C-02’s business idea is to develop and market biomedical sensors and diagnostic systems with a particular focus on sensors for the health and medical market. The sensors can be used to diagnose several diseases and the core technology is patent protected. The term sensors and diagnostic systems also include digital transfer and handling of general results and data. The focus area is glaucoma where intraocular pressure is a central medical examination. The business model is based on the core competence in sensor techniques in general and piezoelectronic opportunities in particular.

4.2.3 The company C-03

The company C-03 was founded in 1998, by a man who worked in another kind of electronic communication system and he thought that lift communication had to be improved so he started the company.

The company C-03 sells and develops systems for secure and reliable communication. The company has two business units, one (bigger) is machine to machine communication, which is the way to communicate and secure communication between different machines in plant. The
other unit is lift communication. The company strengthens the customer's competitive edge by adding cost efficient and secure data transmission capabilities to their solutions. They are offering emergency lift communication, security for both for passenger and service personnel, according to EN81:1-2, EN81:28 and EN81:70.

**Business idea initiation**

The founder was working before with the alarms for the elderly, it is a same technology that is used in the lifts.

> "The founder worked with the same kind of products before so he had knowledge from the beginning and it was just to sell the product to the right customers, and of course the knowledge was very important. The founder had very good contact with a multinational lift company called KONE from Finland, one of the 4 main multinational companies in lift business. KONE told him that you have a good knowledge and you can develop a good lift phone for me, so if you manage to do that, we will buy it from you."

**4.2.4 The company C-04**

The company C-04 offers the hair extensions. The company provides different types of hair extensions for everybody. To offer a Swedish high quality brand, broadest possible range of hair extensions to be sold through our own factory and web shop directly to private customers or hairdressers worldwide.

**Business idea initiation**

The brand was first introduced in the year 2007 by a woman who looked for "the perfect hair extensions supplier". The aim was to produce Good quality, broadest possible product range, competitive prices, quick deliveries and the most important of all - good service to the customers.

> "It was my girl friend idea, she loves hair extension, and she almost was spending 20000Sek per year for that, so she decided to make it cheaper for herself. She sold some products to friends, and some of them for free, then she started the website for selling the products."

They started from their home. Since first day, in the bedroom and living room, and they decided to go bigger and build the brand.

**4.2.5 The company C-05**

In a short period Umeå has become one of the important Swedish centers for biotechnology and biotechnical research. Several biotech-oriented, researcher-owned companies have been established in Umeå and the surroundings of Umeå University in northern Sweden. Company C-05 launched during spring 2008 its first diagnostic kit for research purposes on neurodegenerative diseases. The company has close collaboration with research groups at many
departments at Umeå University and the company also collaborates with a number of Swedish and foreign biotech companies. Researchers at Company C-05 have earlier been involved in the development of the diagnostic S-100 assay, indicated for monitoring traumatic brain injuries and patients with malignant melanomas. S-100 is today used worldwide for these conditions.

**Business Idea initiation**

The business idea he has had several graduate students work in his lab, 4 or 5 people that defended their thesis. The last student spent four years on this protein that could be used to monitor the speed of the brain. They can monitor the speed that brain is going to die. It is useful for disease such as MS.

**4.2.6 The company C-06**

The company C-06 is producing training simulators. The company is in a close collaboration with Umeå University. In order to create the best training simulators, they are always collaborating with two parts in the development process: the machine manufacturer and a training organization. Their market can be divided into two different areas, all on a global market. The machine manufacturers use the simulators to boost their market exposure. Using a simulator for marketing of the real machine is very powerful, especially on large indoor exhibitions. Many of the partners also uses the simulators to train their customers operators, before the actual machine have been delivered. The training organizations, for example public schools, use the simulator for training of tomorrows operators. It could also be a large fleet owner that has their own training organization. They are using the simulator for operator screening, training of new operators and to improve and sharpen the skills of the existing ones.

**Business idea initiation**

C-06 was formed 1999 as an offspring from Umeå University. They saw true potential in training simulators and the first simulator for forestry machines reached the market in early 2001.

"It is started a little bit earlier than 1999, here in Umeå they had been discussing for few years how to take care of the things that is coming out from Umeå university. I think it was around 90 or 95 when Umeå University received a money from government to build up something about simulators and after some years, the manager here with some companies here around Umeå started a joint venture between University, the third party and us. We started to develop few simulators for forestry industry. The few guys that were entrepreneurs helped to connect these companies and develop the business. They had a big knowledge in computer science."

They have delivered more than two hundred systems worldwide up to now, offering the market fifteen different training simulators together with seven partners.
4.3 Prior to entering the internationalization Phase

The aim of the interviews was to gather data that lead me to explore the role of knowledge in internationalization of SMEs. In the previous section, the background of the companies and the idea generation were discussed. Those information help me as a researcher to reach to the better and more in depth understanding about the context in which the business idea was initiated and the current situation in which the companies are running their business in international markets. Following the main objectives of this research, this section will present the different aspects discussed with the companies about pre-internationalization phase. Pre-internationalization phase in the context of this thesis refers to the competencies and knowledge that companies gained, and/or market situations that led them to decide to go international.

The following section presents the question regards to companies specific competences.

4.3.1 Specific Competences

In order to understand the internationalization process of enterprises and the type(s) of knowledge that has led them to start international activities, the interviewees were asked to describe what their specific competence are and how those competences contributed in development of their business. The question (question no.6 in the interview guide) intended to grasp the type(s) of knowledge that allow the company to go international. This would allow me to discover the role of knowledge in decision making for starting international activities. The data gathered from this question alongside with the companies’ background and the idea generation information that presented in the previous section also help me to understand the internationalization process in the context of different types of knowledge, and to understand the context from where the company was started.

When answering this question, the different companies had different responses to some extent.

C-01 response to the question indicates the role of Technological knowledge that is referred to by “oriented design knowledge” together with the knowledge about the customers’ needs that gained through market studies. The latter could be considered as a Market-specific Experiential Knowledge since it gained through the observation of potential customers’ need and studying the market. The following quote is the statement that was made by interviewee from C-01:

“It was my user oriented design knowledge that generated the idea before I started the designing, I went to the people to whom we were going to sell the idea and ask them how does it work today and how could it work based on your possibilities and abilities and ask them about the problems that they have. We (the founder together with the research team) asked the users about their needs and the concept is developed as one of the several solutions, the technologies existed out there and we just combined it in a better way to answer user needs.”

So according to what he stated, his Technological Knowledge on oriented design alongside with his ability to recognize the customers’ needs are considered as his core competencies that contribute to development of business idea. But from business aspect, he mentioned that he had a personal consultancy company before but it wasn’t the serious experience and he didn’t consider
it as a remarkable experience. What he believed that help him to launch the business idea as a product to the market was C-01 partnership with the bigger company which they get help from in business side of the company. According to what he said, the partner company provides them with the knowledge about the business beside the place and other tangible resources.

“[…] I started together with them because they know business and I know the technical part.”

Based on his quote, business knowledge here could be considered as both General and International Experiential Knowledge since the partner has international activities as well as domestic business.

C-02 responded to this question differently. The C-02’s CEO didn’t considered his competencies as an academic knowledge, but his several years experiences in commercializing products in the Scandinavian markets as well as UK.

“My competence was more in my commercial and industrial background; I don’t have an academic background. I have been part of commercializing product and take it into market for four years (as a CEO).”

Taking into account the background information of C-02 and the process of idea initiation for this company, the role of Technological Knowledge is crucial in this company since they are sorted as a high-tech company with a unique technology. But his knowledge on commercializing of the products with experience in different countries could be considered as a General and International Experiential Knowledge.

C-03 answering to this question mostly highlighted the role of Technological Knowledge as a core competency that helped the company to develop its business:

“[…] the founder worked with the same kind of products before so he had knowledge from the beginning and it was just to sell the product to the right customers, and of course the knowledge was very important. The founder had very good contact with a multinational lift company called KONE from Finland, one of the 4 main multinational companies in lift business. KONE told him that you have a good knowledge and you can develop a good lift phone for me, so if you manage to do that, we will buy it from you […]”

But as it is perceived from the statement above, his rich business contacts facilitated the business development for him and his company. Although the market was in Sweden (at that time) but the creditability of the customer as one of the biggest multinational companies in the lift industry and also the profitability of the deal (he mentioned that KONE had 50% of Swedish market share at the time) made it easier for the company to start internationalization process.

In another part of the interview, the interviewee from C-03 mentioned to the fact that:
“C-03 was founded in 1998 by a man who worked in another kind of electronic communication system and he thought that lift communication had to be improved so he started the company [...].”

The similar work experience that the founder had before starting the company and the interviewee statement that remarked the need for improvement in the lift communication facilities at that time, all could be considered as a *Market-Specific Knowledge* about the customer needs by definition. This type of knowledge alongside with his *Technological Knowledge* and his business contacts gathered as a strong basis for developing the business idea.

C-04 was founded by a woman and her boy friend. They started the company in their home and developed the business rapidly. There are interesting facts about the competencies of this couple as a founder of the small business in the hair extension industry section. The boy friend made the following statement in the answer of the question that what are your competencies that contribute in the business development of the idea:

“ [...] She (the girl friend) is very good at knowing what is good product and how it should be, she is also very good at customer relationships because she has a work experience at hotels, she knows how to handle the customers very well. I also had my own business, I was a farmer, and being the farmer is very hard to keep and save the money, you should calculate all the time, so I learned how to keep the money and how to invest them correctly to return the benefit. We didn’t have any International Knowledge before but know the company is selling in 8 countries […].”

Both founders seem to rely mostly on their experiences in order to develop the business. The *Technological Knowledge* about the product and how it should be came mostly from the experiences that she had from using the same products as it was mentioned in previous section, she spent around 20,000 SEK per year on the similar products for personal usage. She gained a good *Market-specific Knowledge* (customers’ needs) because she is one of the customers. Also her past experiences in hospitality industry helped her to be able to establish good relationships with the customers and turn it to be one of their most important competencies that make their business successful. The past experiences as a farmer, as he described thoroughly, helped them to be successful on running a company as a beneficial business. His past experiences were not exactly related to the current industry section that they are active in it right now, but those experiences provided him with the Knowledge such as allocating resources efficiently and managing the resources in order to have a successful business.

C-05 is kind of different in the term of business development and internationalization process. C-05 classified as a diagnostic company, producing new chemical kits to enable diagnostics of specific diseases and so far launched one assay. The product (assay) is unique in the world and his firm is the only one which has this kind of biotech product. That is the core competency that the whole company is established around it. The assay is a result of years of research in the lab
with several graduate students involved. The last guy (who is currently the CEO of the company) used four years on this protein that could be used to monitor the speed of the brain. They can monitor the speed that brain is going to die. It is useful for disease such as MS.

As it was discussed above, several years of advanced research in biotech with focus on diagnostic drugs, as we can considered it as High-Technology Knowledge, is the core competency of C-05 and the reason that they could develop their business. The Technological Knowledge on different stages and phases in order to get necessary approval for the assay and of course the huge amount of investment for years of research came together as a C-05 company, launching a unique protein to the market. Their specific competency is their product that is based on several years of advanced lab research and several doctoral theses. Their competency is their knowledge as scientists that led them to invent a unique product (assay) in the world for the brain damages diagnostics.

And finally C-06 competencies consist of the close collaborations between the C-06 and university in one hand and C-06 with industrial companies in the other hand. The interviewee described it as following statement:

“[…] the possibility that we have been very close to the big multinational companies here in Umeå and also being close to Umeå University. The cooperation that the University has with 6 or 7 other universities in the world make it a top leader when it comes to simulating and also I think that we have a good culture in Sweden that comes really useful when it is about the business. For example in my company I can go and say directly to my boss that you are wrong about this or that and he won’t fire me for that. We will have a discussion and if I am right, he will change and if I am not right I have to change but he will not get upset or fire me because I have a wrong opinion, I am able to criticize anyone in the company and question anyone doesn’t matter what is your position, this culture helps us to find out better solutions in a shorter time.”

There was an interesting point in the above quote about the Swedish way of doing business. The interviewee believed that Swedish open culture about the criticism at a work place has made it possible for them to reach to the best possible solutions in a short time.

4.4 Starting the Internationalization Process

The interview questions were designed to go through the internationalization process of the firm with the special focus on the role of knowledge in the process. This logical path is supposed to lead the researcher to the answer of the research question. After understanding the main competencies of each company that led them to further development of their business idea, in the following section, the designed questions’ aim is to grasp more information about the way that companies start to go international, the reason behind it, and how they chose the foreign markets.
Of course the questions are knowledge-oriented to discover the role of knowledge in above-mentioned aspects of internationalization process in each firm.

The answers for questions 7, 8, and 10 from interview guides will be presented and discussed in the following section. The results will help me to understand the reasons behind internationalization of the company and the role of knowledge in the starting of this process.

During the interviews, I found out that there are different reasons for each company to go international and start the business in foreign markets. As it will be discussed later in this section and in more detail with the analytic point of view in the next chapter, the reasons differ in terms of opportunity- or necessity-based.

For instance, in answer to the question “When and how did you decide to start international activities?”, C-01, they found out accidently that there is another application that could be imagine?? For their product, this spark opened up the new markets for the company and it turned to be the only product that the company has in the international market as it is not limited to the language. As the CEO stated:

“The first market was Swedish libraries, we had a product and we sold a few but not enough, but we were thinking about the other usage of the product and by accident we realized that it can be customized for the solution for museum as well, we grew slowly, hired a sales man in Stockholm and head of sales in Umeå. The sales man in Umeå has had international experience i.e. Norway, Denmark where the language and culture is very close and we found it easier to start internationalization from Denmark and Norway.”

The role of head of sale was remarkable in the internationalization of the company because he had an international experience and his International Knowledge and his courage were the main reasons that they decide to start internationalization according to what the interviewee mentioned in another part of the interview. The main reason for C-01 to start international activities was based on the opportunities that they discover in the market. He believes that the current market is big enough for them not to go fast on internationalization. They prefer to wait for the suitable opportunities in the foreign markets and meanwhile, they need to empower themselves to be ready to be able to invade new foreign markets.

To answer to this question that how did they start the internationalization process, the interviewee remarked again the role of the company’s head of sales and his international experiences within Scandinavian markets. There are two main reasons beside the mentioned one that had a great role in internationalization: the new concept of the product that was not language dependent and made it easier for the company to sell it in foreign markets, and minimum cultural and language barrier in Denmark and Norway markets in comparison with other foreign markets. He mentioned that:
“The salesman international experience and the concept of the product which is not language dependent (especially the museum version). It is not a big deal to customize the product with other countries requires. I think that there is not much to adapt in term of product and business idea. We start with resellers in the foreign markets.”

Questions related to this part of the research following by the question about how the companies find and choose their first foreign market(s). C-01 responds to the question by the following statement:

“[…] from our partner, especially in Finland. For the markets in Norway and Denmark we go straight to the libraries and museums and present the products to them as well.”

So based on the above statement, they rely on their partner international networks at a first stage, as he mentioned in the interview, the Finnish market is a bit different with the Norwegian and Danish market due to the language and cultural barrier that are more bold in Finnish market than the other Scandinavian markets. There was where they took advantage of International Knowledge of the partner. He believes that the C-01 experiences in domestic market helps them to be more successful in other Scandinavian markets especially Norway and Denmark. They started the internationalization with the reseller in each market.

C-02 had different reasons to go international. As the CEO stated, even from the very first stages, the founder realized that the business must be global based. It could be because of the concept of the product that is based on very high-tech and unique technology in the health care sector. They believed that this technology has the potential to be sold in all around the world. In response to the question about how they decide to start international activities, the CEO stated:

“Even from the very beginning when they saw the potential of this technology, the former manager of the company realized that this must be in global base. So it was already from the beginning. Then we have discussed the steps. We started with EU, then North America and after that Asian part of the world.”

So the difference between C-01 and C-02 could be interpreted as the concept of the products based on the technology they have and also to what extent the current or potential domestic market is sufficient for the stakeholders.

C-02 plan for internationalization was based on the external partner helps before the current CEO (interviewee) joined the company. Similar to C-01, they had an agreement with the British partner to commercialize and launch the product to the international markets. But things didn’t go exactly the way that they had planned! As the CEO stated:

“[…] it was an agreement before between C-02 and British Partner Company for commercializing the product and launching the product to the market. They developed, manufactured and sold it all around the world. It was a quite big company but for
different reasons they didn’t put that much effort for this, and when I arrived, I realized that they didn’t hurry and they didn’t put enough effort to commercialize the product. So that’s why we ended the collaboration and started up the development and manufacturing in Sweden and distribute it to all around the world.”

Before his arrival the C-02 was trying to use the International Knowledge and capacities of external partner in order to take the next step for internationalization of the product, but as mentioned earlier in this chapter, he has a commercial and industrial background and it seems that the stakeholders decided to use the internal source of International and Commercial Knowledge in order to expand the International Knowledge. So despite C-01 that took advantage of the partner experiences in international markets, the C-02 preferred to employ a competent person to take care of the process. It is important to mention that not that every company can do this due to the limited budget of SMEs.

C-02’s foreign target markets are based on their patents. They also sell the products to the markets which they don’t have patent but as he mentioned, it is easier for them to go to the markets which they have patents like Spain, Germany or China Hong Kong.

The case of C-03 in terms of decision for starting internationalization activities was different with what was discussed for the past two cases. The C-03 was forced to go international because the situation that they had in domestic market. As it was mentioned in previous section, the C-03 business started as a supplier of lift communication facilities for KONE, one of the main 4 multinational companies in the sector. As the interviewee discussed, the KONE had 50% of Swedish market share and it was big enough for the small company like C-03 at that time. But the issue was they only had KONE as a customer and it was too risky for the company to rely on just one customer. He described the situation as it is coming in the following statement:

“KONE owned 50% of the Swedish market share, the other companies didn’t want to buy the product as KONE, and so he had the best customer in Sweden but only one.”

So unlike the C-01 and somehow C-02, the C-03 forced to find the markets outside Sweden in order to ensure the company survival. The interviewee argued the situation that company and the founder faced on that time as follow:

“[…] so he was forced to find the customers outside Sweden since it was very risky to only have one big customer. It was impossible to find a Swedish customer since they didn’t want to buy the same lift phone as KONE. Therefore the only solution was to develop the business outside Sweden.”

Their internationalization process began more necessity-based rather than opportunity-based.

But it was not so easy to start international activities for a small company like C-03 with limited resources. So they decided to start from neighbor countries, since there are less cultural and
language barriers. They needed more International and Market-specific Knowledge in order to expand their market to other EU and US markets.

“The Small companies try to sell to their neighbors, Finland, Norway, and Denmark... for a little company it is easier to sell to companies with the same culture because you know how the customers will react. Right now our business is limited to EU since we still don’t dare to sell to South America or US or China. It is because we don’t exactly know how it works in those countries and we don’t have money to try to know this. In the future we have to go to those markets. This is a security product so you cannot sell this kind of products to countries that cannot afford it such as Africa; we have to sell the product in rich countries.”

C-03 started the international activities from markets which had a greater psychic distance as Johanson & Wiedersheim-Paul (1975) have describe (as noted in section 2.3). As it is perceived from the statement above, they need more International and Market-specific Knowledge in order to start business in a market that are not quite similar to the Swedish market. They started the internationalization activities from the Scandinavian countires and after maintaining enough resources and gaining enough Market-specific Knowledge about other European markets, they expanded their international activities to those European countries.

C-03 customers are just amongst distributors which means that C-03 never sell to the end-users. The production part is in Sweden and the major part is in China. The product development is getting done in Sweden and then they will sell it to the large distributors in EU.

C-04 case was interesting in terms that the decision for internationalization of the company was totally different with all above-mentioned cases. For C-04, doing business in the international market was not so much different with doing business in the domestic market.

“After one year of establishment, we went international. The internationalization was very simple through the website. We translated the site to different languages. First we used Google Translator but it didn’t work well, so we hired the person(s) for both translation and customer relations. We don’t have any sale subsidiaries, just take the order form website and send the product to the customer directly.”

The C-04 has fairly high knowledge about the customers’ needs and wishes. One of their core competencies, as it was discussed before, is having a close relationship with their customers and good knowledge them that could be considered as a Market-specific Knowledge.

It is also remarkable that the founders didn’t have any kind of International experiential Knowledge before but the company is selling the products in 8 countries at the moment. Also the founders didn’t have related educational background. In part of his answer to the questions that how you manage the marketing strategies, the following statement was made by the interviewee:
“I just learned from other companies’ brand building and marketing strategies by looking at them and reading about them, the companies such as Coca Cola and Red Bull. The profit is very important and also quality. I believe that people just have to do it by their own. We worked a lot during the first year; at the nights we packed the orders…”

The past experiences brought him an insight about the business that made him successful in his current business.

The internationalization process started gradually from the neighbor country, Norway, but it grew fast. It seems that one of the most important barriers for C-04 for going international was language, because their business is highly dependent on the customer relations. The internationalization process followed as he stated in the following quote:

“The first foreign market was Norway; we found Germany a bit harder because the Germans were not used to buy the products from foreigners. It was harder for us. Now we have one German employee that work on the Germany market (language mostly). At first we translated via Google translate but it didn’t work out well, so we hired a German translator who also works on the marketing strategies for Germany. The Marketing is through Face Book, blogs and links in other websites, all of them through the web. We tried exhibitions and newspaper advertising but they didn’t give so much back. The web is better mostly because we can always track how much money we can get back for example for 100000SEK investing on advertisement.”

Obviously his business insight gained from his past experience as a farmer (discussed in previous section) has had a direct impact on the way they run their business internationally.

In choosing foreign target markets, the psychic distance was important for them but apparently due to the language barrier, the more important criterion was how wealthy the target market was, since the product is expensive and categorized as a cosmetic product and thus the customers need to be able to afford it. It all could be perceived from his statement:

“Scandinavia was easy, the same language. Finland was also good because they are rich and they can buy the product. Germany is not too far away and most of German have money and also use lots of hair extension products. They have an experience on Spain, they have friend in Spain that’s why they try Spain but it is not that much successful because the people cannot afford it.”

The case of C-05 is different with the other cases in the sense that their product is highly demanded worldwide and at the moment there is no available alternative for this product on the market. This makes a great difference in the C-05’s process of internationalization in comparison with the other cases. C-02 and C-06 are also producing high-tech products but there are alternatives available in the market for those products.
Bearing in mind the above-mentioned point, the interviewee’s answer to the questions is presented below; in response to the question on when and how they decided to start internationalization, the following statement was made by the founder of the C-05:

“Right now they are mainly selling in Sweden and their significant part of Swedish market is in Gothenburg and beside that they are going to sell to Europe to several big pharmaceutical companies. Those companies are very eager to use this assay to demonstrate that their cure for brain disease is useful and effective because this assay can be use as a measure to show how much the drugs have effect on the brain function and progression of the disease.”

What could be concluded from this quotation is that the customers are eager to have this product. The role of Technological Knowledge in C-05 is remarkable since they have developed a unique product in all the possible ways. This is the essence of most of the biotech firms.

The process of internationalization for C-05 was started from Sweden. Before they were allowed to go international, they had to obtain a certification in Sweden to prove the quality of their product. The development of the product is done in Stockholm and it is then exported to other countries.

“We need to have the certification here in Sweden. As soon as we get that certification that is the confirmation of the quality, it is easier to say that this test is accepted and we can sell it. We are producing in the lab in Stockholm and we are exporting to the other countries. We cannot do it in any other place because it is too tricky. It is a lot of standardization and the regulations in Sweden are also tight.”

In response to the question “How did they choose the foreign target market?” the founder of C-05 stated:

“There are differences in the market; I mean who is the actual buyer of the product? Is it a patient? Is it a doctor? Is it a hospital or is it a community and regulatory networks that are very different in different countries. We are dealing with this kind of stuffs. We are negotiating with the communities right now, the owners of hospitals, and now we are considering having some sellers in Germany, France and Italy. We find our customers from the people that are selling the similar assays and the chemical assays for patients in different countries. We are not approaching the buyers ourselves, but more or less we deal with resellers and distributors in different countries.”

In order to clarify more, I asked about the reason they have chosen some markets before the others as their product is a kind of medicine that could be use by all humans around the world:

“They (Germans) are significant consumers of these types of drugs, for example there are 84 million people in Germany and they are eager to monitor and measure their brain
function and the same for Italy and partly in France also. They are known to spend a lot of money in this kind of products and assays.”

They have chosen their target markets according to their Market-specific Knowledge. Although they have considered some market-specific factors in their decision making process for going international, the following statement should also be taken into account while analyzing this case:

“[…] the customers more or less find us, that’s a way we find our customers because it is such a specific kit. They are not so many doctors that are able to have access to the facilities and the specialization that we have.”

As it seems their situation is not totally matched with the normal supplier/customers equations. The role of International Knowledge seems not to be as remarkable as the other cases. This will be discussed further in the following sections.

In answering the question on when and how they decided to start internationalization, the following statement was made by the C-06:

“In 2002, in very small amount. The first market was Brazil, now we are selling to Australia, Asia, North America, but in the beginning it was one simulator for early adopters.”

The following statement, in response to the question “How did you start internationalization process?” sheds more light OR clarifies the case more:

“Our business idea is to work with big multinational companies like Volvo and..., we using their sales departments, so we are using their networks instead of building our own because that costs a lot of money. We are trying to use the networks our partners already have. It is sometimes good and sometimes bad but at the moment it is cheaper and less risky for us. We don’t have a subsidiaries or something like that, we sell to the customers of our partners, and we go together with the product for example to Brazil with the whole team. We have no offices, what we sell, depending on the customers, if we think he is capable to do it by himself, we let him do it, if not we go there and help him. So we might help him few times in the beginning and after that let him do it himself. All the production and product development is in Sweden.”

As it was discussed during the interview, it took 3 years for the company to develop the final product that is ready to launch to the international markets. During these three years they gained lots of valuable experiences (mostly concerning the technological aspects of the product) that provided them with enough experience before entering the international markets. Their business model depends on their industrial customers. They use their customers’ networks and end users, so their product can be considered as a complimentary product for the big industrial companies’
products such as Volvo. The product development is based in Umeå but services such as training courses in the forms of before- and after-sales services are conducted in the customers’ sites.

The last question for this section was about how C-06’s foreign markets were chosen. The discussion above about C-06 business model and its cooperation with its partners clarifies the response to this question better:

“We choose our customers according to our partners and the networks that they have.”

As a result of the business model, which is based on the partnership with the giant multinational companies, the C-06 target markets are being chosen through their partners’ networks and target markets.

### 4.5 Doing Business in International Markets

After understanding the background of the companies and the reasons behind their decisions to start international activities, the questions of this section are mostly focused on the main dilemmas that case companies were faced during their activities in foreign markets and the ways they solved those issues, the role of previous experiences in the internationalization process and finding business contacts, and the companies’ main success factors in doing business abroad. The answers will provide a good understanding of the role of knowledge in the internationalization process of the companies. Information from this section together with information from the previous sections will help me to reach a comprehensive image of the companies’ internationalization process from a knowledge-based point of view.

#### 4.5.1 Past Experiences

When answering the question: *To what extent you rely on your past experiences to go international*, the companies were clear on the role of their past experiences but it was not the same case for all of them.

C-01 believed that the company’s experiences in Swedish market are useful for them in order to conduct the business in the Scandinavia because they have similarities in market or as he described it: “Nordic countries are sisters”. But in his opinion the domestic experiences in Sweden market cannot support them sufficiently in doing business in other part of the world such as US.

“I think Nordic countries are sisters and if we want to go abroad like the UK or US we need more experiences both in Swedish market and in Nordic countries. We want to grow slowly, and we believe that current market is big enough for the current situation. Maybe in a long term we want to expand to other countries.”

Based on statement above, the C-01 past experiences and their networks provided them a good *International and Market-specific Knowledge* for the Nordic countries markets, but from their
point of view, it is not enough to invade the new markets with totally different culture, habits and languages.

The CEO of C-02 didn’t consider his international experiences in European markets such as UK, Denmark and other Scandinavian markets as a remarkable international experience in comparison with the current market status of his company which is quite worldwide. He made the following statement to answer the question:

“To be honest I didn’t have that much international experience. I have been working in European countries such as UK, Denmark, and Scandinavian countries. I didn’t have experience for Global market but many things are quite similar i.e. how to do things. In our case our product first needs to be approved, so we can be allowed to sell it in the country. We need registration. We have consultant that tell us for example for Germany you need this and that and for UK you need this and that. Especially for medical device it is a huge difference between for example US, Canada and EU. In US there is quite tough situation to register product in North America, it takes a lot of time and effort and money to register product there. In Japan also is the same. We have distributors that help us with registration, administration and regulatory issues.”

As he described, he had quite enough International Knowledge about European countries but didn’t consider it as remarkable when it came to global business. On the other hand he admitted that many things were quite similar. Thus it can be assumed that his International Knowledge in EU was considerable and adequate to run the worldwide business in the context of this study. This company has also been using consultants and expert distributors for every new market upon entering. The consultants are among the most competent people in the industry section that have complete knowledge about the market situation, rules and regulations, and customers’ behavior in that specific market; which are considered as Market-specific Knowledge by this study.

An interesting argument about the question on the past experiences was pointed out by C-03:

“The Swedish market experience wasn’t that much useful for them to go abroad. In Europe, you have three regions; the Nordic region, Mid-Europe, UK, France, Germany, and the Mediterranean like Spain, Italy…and it is three ways to do business, three different planets. You can’t do business in Italy the way you do in Germany or Norway. We like to start the business with Iran based on the relationship that we have found two years ago, and if the person knows the market well, we would like to start the business with Iran, and it is the same for other countries as well.”

It is an interesting quote for several reasons: It sides with the quote by C-01 that the domestic market experiences could be useful when the companies initiate international activities in Nordic region. On the other hand it provides the fact that the European Union is not quite homogeneous in terms of market specifications. Carrying out international business in Italy for C-03 is not the same as it is in Norway or Germany. According to his statement about Iran market, they need to
find a person to provide them with the Market-specific Knowledge in the country. It can be concluded that C-03 has recognized the necessity of different knowledge in order to run his business in the three different European regions he had mentioned earlier.

C-04 didn’t mentioned specifically about the role of past experiences, but the following quotes could demonstrate what they had gained from first year of running their business in Swedish market before they started their international business:

“[…] we focused very much on the branding and packaging. We try to satisfy customers. About the brand and brand building, we learned that it is really important. We focused on brand and packaging. We rely on word of mouth and try to satisfy the customer so that they do the marketing for us by telling the friends and others about the product. We use quality, and Face Book, word of mouth and blogs.”

He also mentioned that:

“We just try to serve the best to the customers. Good service, fast delivery and perfect after (sale) service.”

Selling in 8 countries 4 years after establishment indicates their ability to identify and provide their customers’ demands quite well. This could be also considered as Market-specific Knowledge. It was also evident from the interview that they put lots of effort in establishing good relation with the customers, even before they buy the products which provides them with rich knowledge about each customer. They continuously get feed-backs from customers and modify and improve their products and services based on those.

“To what extent did you rely on your experiences to go international?” was the question that the founder of C-05 described it as followed:

“The common patent to behave in this diagnostic world is that if you are a single scientist in a lab like we are. We have more or less invented the thing and then documented that we have done that by producing doctoral thesis on the topic, but those bigger companies do not really adopt such technologies until we have proven that it is functioning, so we need to do lots of investigations before it get acceptance. But we had collaboration with about thirty labs in Europe, in fact the major labs in Europe that are dealing with these types of assays. We have published that thirty labs in Europe has been testing the assay and approved it.”

Obviously the whole concept of C-05 is based on the years of experiential studies and researches in the lab. As it revealed during the interview he, the founder, also had the experience in running a biotech company before. They had the mistake and they sold the entire kit to the Italian company. That experience provided him with more knowledge about how the business is working in biotech industry.
The case of C-06 but differs with the case of C-5. The representative of C-6 believed that three to four years of experience that his company had before starting the international business, had a great impact on their success and also reputation in international markets.

“It took three to four years to develop the product, the first time took much more time, and then I think it is better to start in your own country, because it is cheaper, you don’t have a language problem and distance problem. During these three years, we figured out most of problems about the products in Sweden instead of doing it in Brazil or China that is much more farther than Umea forests to try the simulators. Domestic experiences absolutely helped us, when you get feedback from US or China it costs a lot to go there and fix it, those experiences is more technical than international. The way we do business is pretty much the same in all the countries. The laws and registration and how you suppose to do the business, we learned it during the way.”

The experiences before going international, allowed them to test and troubleshoot their product in the most effective and efficient way. According to his quotation, this procedure if it was supposed to take place in the customers’ sites, would have cost much more and also would have altered their reputation. The reputation and trust are the most important issues for C-06 as I will discuss it thoroughly later on this chapter. About the International-Knowledge, the marketing manager of C-06 discussed that they have decided to learn it during the way of doing business in international markets. It seems that the International Knowledge is not considered as a barrier for company internationalization process.

4.5.2 Main Dilemmas and Solutions

The next question was asked from interviewees in the same direction of the previous one. The question is: what were the main dilemmas for you to start internationalization and how did you figure them out?; The answers to this questions provide the researcher with deeper understanding of the issues and dilemmas that case companies could be faced during doing business in foreign markets. The information will help me as a researcher to gain a better understanding of the role of different types of knowledge in development of international business for SMEs.

C-01 responded as:

“[…] size is a very important factor, I think that it is better to build the market here in Sweden and get enough experience and confidence to go to the other markets such as US. We need supports and partners when it comes to the foreign markets. We are not really focused on a specific market yet, we mostly wait to find good opportunities. Start locally, use local resources and grow gradually. We believe that it is much bigger step to go outside Nordic countries. Wait for the opportunities to find and also want to grow first in Sweden to be big enough to go to the markets such as US.”
Based on above-mentioned statement from the CEO and my observations during the interview, they biggest issue or dilemma is lack of confidence to go to the other international markets beside Nordic countries. The further analysis will be discussed in the next chapter but just to make a brief explanation for the statement above, it seems that another main dilemma for them is limited resources that prevent them to expand their business outside the Scandinavian market. Finding a good partner that has comprehensive Market-specific Knowledge is one of also a dilemma because it costs a lot for companies to do the market research for the specific customers’ behaviors and rules and regulations in target markets. In the case of SMEs, since the resources are tight and limited, it is one of the main concerns to find the proper partner in the foreign markets. Similar dilemmas will be present and discussed further for the other cases.

C-02 made the following statement in answer to the question:

“First we need to find the partners in different countries. We go to international conferences and for example if there is a conference in Barcelona, we can meet from all over the world, so we go around and discuss with them. The most important issue for us is approval of products in different countries. For example Germany, they required to have the unit (product) calibrated every 24 months and no other counties ask for such a thing. In US we have to get approval that the product is safe for the patients. For the German market we developed the calibration unit that is placed in the institute in Berlin that we send the products to that institute every other year for calibration.”

Two main dilemmas and their solution were mentioned here; one was to find proper partners in different markets as it was the case for C-01 as well. One can wonder why it is a major dilemma for SMEs’ to find proper partners in different markets. Again finding the partner is important in this case as well as C-01 case. I will try to answer this question in the next chapter. The second dilemma was obtaining required approval and authorizations for the product in each target market. C-02 resolved this issue by employing consultants and local distributors in order to gain the essential knowledge needed about each country’s laws and regulations in order to obtain the approval to launch their product.

C-03’s director of marketing made a clear and thorough statement on the dilemmas they have faced while doing business in new foreign markets:

“The first problem was to know what market, knowledge, habits, what kind of products the market wants. You have to adapt and customize the products to the market specific needs. There is different ways to choose the components and accessories; it is not the same for example in Italy and England. The entire EU has the common norms and ground, but they have also different habits, e.g. instead of installing like this, we want another kind of installation, and we have to fight against local competitors. The local competitors don’t need to adapt the products; they already are adapted by the local market needs.”
As a small company, we have to see the possible potential markets. One thing is very important for this company; they hired the sales managers from different background like French and Italian, because it is impossible to sell products in a Swedish way to other markets. You need to be closer to your market. Because I and my Italian colleague come from different backgrounds from different parts of Europe, we are able to understand the markets more. Because we are coming from another countries and they are closer to the customers. For internationalization, it is important to have customers form the local markets to understand the market behaviors and mental model.

The second biggest problem is what kind of partner we will have, how to choose him or her. You have to meet several possible partners. If you start the business with the partner, it takes two years before you understand it is not the suitable partner. So you spent lot of money and lot of time, then there is a problem to how break the contract, how to find a good one and you lost several years and huge money.”

C-04 didn’t face any significant problem regarding international activities that is probably because their business is mostly web-based and it is in some ways similar for all markets. The following statement by the interviewee presents one of their main dilemmas in doing business with Norway:

“We don’t have that much issues regarding international markets. Just for example in Norway, we had a problem because it is not part of EU and that’s why the mails stuck in the custom for one or two weeks and the customer should receive it in the post office and they have to pay extra price for the tax, 25%. They have to pay it to the government. Now they are used to it but in the beginning the customer were pissed. We solve the problem; we reduce the price for Norwegian market but still some complaining from customers.”

But as it has been mentioned in this chapter and also in the theoretical chapter about SMEs, one of the most important issues that most of SMEs are facing is limited resources. This issue could also be perceived from C-04 statements from the way they tried to figure out this issue:

“We have a market strategy, focusing on low-cost but very effective marketing strategy. I want that customers be completely satisfied, at the same time, I want to make money, and I focus to make loyal customers. I just learned from other companies’ brand building like Coca Cola and Red Bull. The profit is very important and also quality. I believe that people just have to do it by your own. We (he and his girlfriend) worked a lot during the first year, at the nights we pack the orders [...]”

The main dilemmas for C-05 in order to be successful in the internationalization process were mostly related to the reimbursement system in different markets. They were trying to increase their Market-specific Knowledge in different markets by attending in some oriented-courses that were designed for biotech companies’ internationalization.
“The reimbursement system is different and we are not really familiar with the systems in different countries, in fact we have passed some courses about how to internationalize your business, the reimbursement patterns are very different, if you have a health care situation that is completely private, I assume that a patient him/herself is going to pay for that assay if the doctor suggest it, the patient should pay it for it, but in other systems like Sweden the hospital is taking care of it, so to look further to details to how to maximize the market situation. The course was named: Go Global. We had lectures about the different markets such as US and the rules and regulations in those markets. For example in US we need to have some kind of notice from FDA that we are allowed to sell it. And we have to say it cannot use for the patient, the product should be labeled Research Use Only. They will monitor the outcome of the assay.”

On the other hand C-06 had faced the psychic distance issues in a greater extent. The language barrier was the most important issue that they were dealing with. Besides that, the need for their product was not felt in some markets as he stated that some markets were using the alternative options instead of choosing their product:

“The main issues and dilemmas we are facing with are the countries that they have lack of knowledge in English, like China, France, and Germany. We have a language problem. The second one I think is that some markets they don’t see the need, they have different solutions instead, they just pick a human instead of simulators. Some problems with customs sometimes but the language barrier is the biggest one.”

4.5.3 Main success factor

The last question for this section was: “what was the main factor(s) for your company success in abroad? (What is your main competency in comparison with competitors that made you successful in that market?)”. This question has shed more light on the firms’ process of internationalization and the role that knowledge could play in managing a successful business abroad. C-01 responded to the question with a brief statement:

“The product is kind of unique, we have the competitors but the product is unique in the way that it works. In the libraries we don’t have competitors but in the museum we have.”

The main success factor for C-01 was mentioned to be the uniqueness of the product. Through the interview I figured that the product was unique but not in the terms that no one else could copy it or make a better one but in the way it worked. So we both agreed that in order to be the
market’s leader in the target markets their company had to grow fast and gain more market share in those foreign markets as well as working on the product development constantly to keep it unique in both technical and customer services aspects.

C-02 also made a similar quote as C-01:

“The main success factor is that it is very innovative product and very new technology in this field, the clinician likes it because it is so easy to use and it hasn’t been such a product before. We have competitors but many of them are based on the old technology. Our technology is quite unique, advanced and user friendly. So I believe that the technology is main success factor and also I think Swedish quality is quite well-known, so it makes it easier for us in comparison with the similar products that come from for example Italy or Spain. “

The uniqueness of technology, albeit together with the quality and ease of use for the customers, has made the product successful in the foreign markets. The technology that is used for C-02’s product is much more advanced in comparison with the technology used by C-01, however they have relatively benefited from the same competencies.

The case of C-03 differed from the previous two cases; the interviewee described the main success factors of his company as below:

“To find the right market. Because let’s say about Italy, if I have a good product, but my distributors is not a good one, it is ruined. We try to find the best distributor in the market which is covering whole the market and has all the customers. But it is very difficult to choose. Choosing the partner is mostly relies on the past experiences, you can feel and see it in your partner eyes. We made lot of mistakes and learned from that, it is very difficult to choose the right partners.”

Finding the right market and the right partner are the main success factors for C-03. As he mentioned in his statement, the past experiences and the lesson-learned from those experiences all have come together as an insight that enables the company to choose the right partner and market. In his opinion this is the main success factor for his company.

C-04’s first response to the question was brief:

“We have various kinds of products and we change it all the time, so we can answer to all different markets’ needs.”

In order to acquire more detailed and in-depth answers, I developed the conversation more deeply into their marketing strategies and priorities in marketing activities. As it was claimed, they try to serve the best to the customers; good service, fast delivery and perfect after-sale services. As mentioned earlier, C-04’s marketing strategies are focused on the most effective and low cost techniques and strategies. Relying on the blogs, words of mouths, and establishing the
best relationships with the customers along with making a loyal customer could all be considered as C-04’s success factors abroad.

I was also offered to visit the company site and I could observe that the company’s main focus was on customer relations and marketing through the web. They had few employees who were mostly concentrated on marketing through the web and customer relationship both before and after sale. They owned a small private studio where they took pictures of products. The staffs also worked as models to make the banner and other advertising stuff. It was interesting know that his girlfriend (one of the founders) designed and developed the website which is the main and only gateway for them to the market; all the orders were coming through the website which was available in 8 languages. As it seemed they knew how to invest the limited resources on the company’s main competencies in order to maximize the profit.

C-05 founder’s elaboration in answering the question about their main success factor in the foreign markets was as followed:

“This assay is unique and the only one in the world, but as soon as people realizes that it is a very good assay which it is then might be competitors for sure. But the anti-body that we are using is specific and no one can copy that!!”

It was interesting for me as a researcher to conduct these interviews and listen to the businessmen talking about their way of running their business. One of the aspects that caught my attention was the companies’ success factors from the interviewee’s point of view. C-06 explained his company’s main success factors as below:

“I think in some countries it is good that you are not a US-based company, it works in some countries. The more important one is our reputation, most companies around the world think that we are honest, and we try to build the trust, because truly we don’t want to fool our customers, we don’t want to trick them, it is one of our key value, we always want to have a long-term relationship with the customers and we never fool them. We are trying to listen to our customers, what they say about our competitors, we even try the competitors’ machine to see what their advantages are. Sometimes we win and sometimes we lose.”

If we also take a look at C-06’s business model, we would recognize that trust is very important factor for the company survival.

The last question of this section was about the companies’ past experiences on choosing their business contacts; “To what extent are the chosen business contacts depend on your previous experiences?” As it could be perceived from the earlier discussions in this chapter, one of the most important dilemmas that most of the cases under study were dealing with was finding a right business partner.
“Right now we are dealing with the libraries and museums and we directly go to the museum and libraries and present our products.”

This is C-01 response to the question, however by looking back to the data that was gathered for question number 10 in previous sections, it was also mentioned by the CEO that they took advantage of their partner networks to go to the Finnish market. So they are also using their partner international networks and knowledge beside their own-built networks to sell their products.

In the case C-02, the role of external consultant as a source of international business knowledge and experiences was more distinct:

“I personally don’t have that much experience in the specific field, but we have consultants who are working for us. One has been in this field for many years, so he brought us to his own networks and we use his experiences and network contacts to develop and conduct our business. For me it is more like how can I find a person who knows a lot about the market so we can hire him and use his knowledge and experiences.”

Alongside of using consultants as a source of knowledge and experiences, they also tried to build up their own business networks:

“We have been part of the conference in Barcelona in 2009. We were in conference in Berlin last year and also in Paris. We build up our own experiences and meet up with the customers. This year it will be in Vienna and also we plan to go to the congress in Abu Dhabi next year. We will meet up with people from Middle East and Asia who we haven’t met in Europe.”

C-03 made an interesting statement about the situation they had been facing and how they had managed it. The quotation is interesting because it brings up some of the most common issues that the SMEs are dealing with.

“There is no education for the business that we are doing. There is impossible to learn it in the university. We can feel very lonely because nobody knows. We should try ourselves, and we can’t afford mistakes so it is very risky. The only way that we have found to be useful is the club here in Umeå for the exporting companies. People from different companies gather to discuss the problems together. They are like an association that meet 5 or 6 times a year and discuss the problems, we ask for advice from other companies and we have found it very useful. Everybody thinks that we as companies know everything but we are alone. We don’t know lots of solutions and because it is not a game and it deals with the investors’ money, it is stressful. Sharing experiences and knowledge among the companies is very useful. This project was started three years ago by chamber of commerce. We believe that they are not competitors; and we don’t share the same market, so we find it useful to share experiences and knowledge. And because
this region is poor in comparison with other parts of Sweden, we’ve found it more useful to have collaboration instead of fighting.”

Apart from the problems that he mentioned above, it seems that the meetings and gatherings of the companies of the same region, which usually face the same kind of obstacles, is an effective way to solve the problems concerning internationalization and the issues around it.

It was stated by C-04 in several occasions that it was the customers who contacted them to order a product:

“[…] some contacted with us, others we found on the internet, and from friends and the networks they have”

Therefore the experience in web-based marketing, social networks and words of mouth supplied C-04 with new customers and business contacts.

In the case of C-05, business contacts were exclusively based on his career as a scientist:

“We spent our life as a researcher and we have a lot of contacts with a lot of researchers. Within two weeks we are going to the meeting in Lund and in which we are going to visit more than 100 researchers. All of them deal with same things, we will be there talking and listening to those people so this will more or less describe the future potential of the market for us”

The last interviewee’s, C-06, response to the question was more focused on the role of trust and reputation for the company’s development.

“We are trying to make it like we have only one partner in each industrial sector, we don’t work with their competitors. And the reason that we do that is because to be able to develop the best simulators, we need the partners to open themselves up. They have to give us their heart. For them is too hard to give that assets to us because this is what they are living on, they should give us everything. And instead we give them everything, we sign lots of different documents but documents don’t matters, trust and the feeling that we don’t want to fool anyone is very important. The reputation is very important. For example with my marketing staffs, I go to their weddings and ceremonies, we are like a family. In the end it is people, people have the same need, need for success and as long as you are able to build the trust, you are able to touch their heart and also do a business together. Trust and commitment are very important.”

It is also of great importance at this point to highlight the role business models for companies’ priorities and the way they run the business.
4.6 Knowledge Intensity

Knowledge Intensity concept and its role in internationalization of SMEs was discussed thoroughly in chapter 2. In this chapter I will briefly discuss the concept of Knowledge Intensity in the context of this thesis which will be followed by data presentation in Table 7.

‘Knowledge Intensity’ is an important factor in the internationalization context. It is defined as the extent to which a firm depends on the knowledge inherent in its activities and outputs as a source of growth (Melen, 2010, p. 148; Autio, Sapienza, & Almedia, 2000). Melen (2010) study on the impact of knowledge intensity on internationalization of SMEs shows both the direct and indirect effects of a firm’s Knowledge Intensity on its knowledge development in foreign markets. Knowledge Intensity has also impact on firm’s international growth through its positive effect on the firm’s knowledge development as Autio et al. (2000) has expressed. This improves SME’s use of its International Knowledge and indirectly affects SME’s development of specific customer knowledge (which can be considered as a part of Market-specific Knowledge discussed earlier).

Bearing in mind the concept of Knowledge Intensity, the following section presents the results for the questions I designed in order to reach to better understanding of Knowledge Intensity in the case companies. It is necessary to mention here that Knowledge Intensity is not an easy factor to measure in the company. There are several studies that spent hours of advanced research in order to achieve a better understanding of the concept and the aim of this thesis is NOT to measure the Knowledge Intensity of the firms under study or making any contribution on the subject. The purpose behind including this concept in the conceptual model and interview guide was to use the existing KI as a facilitator to answer the study’s main questions more inclusively i.e. the role of knowledge in the different SMEs.

Questions 13, 14, and 15 of the interview guide will be presented and discussed in the following section.

Question 13: *How is your relationship with your customers (do you depend on them for product/service development or do they depend on you?)*. In answering this question, all of the companies admitted the fact that there was always a mutual relation and dependency between the company and its customers. However this question aimed at finding out the degree of dependency in terms of the core technology or platforms of the products. Table 7 summarizes the responses of each company. *Degree of Dependency* in context of this thesis is defined as the degree that company’s main product(s) (main concept and platform) is dependent on the customers’ opinion after buying the product. To clarify more, we can look at the company C-02 which produces high-tech products in health care industry; the product is based on very advanced technology, as the CEO of the company described:
“We receive lots of feedbacks and we consider those feedbacks for the future developments but the technology is advanced and customers depend on us. The concept is the same, just maybe some small changes in accessories or something like that.”

Both sides depend indeed on each other however he believed that the customers were more dependent on the company since they, the company, posses the technological system and product. Nevertheless they have a very good relationship with their customers but it refers more to the specific deals rather than the whole product.

In distinction with the previous case, C-04, which is produces hair extensions, stated that they would change their product according to the customers’ need and wishes:

“We depend on the customers. We get mail all the time from the customers; we listen to the customer voice and change the products all the time according to what customers want.”

Company C-05 launches a unique assay in the world that relies on several years of advanced research. This product is highly demanded by the customers who are highly depend on this product. C-06 also depends on the interactions with the customers, but the core technology is high-tech which makes the customers more dependent on the company:

“It is partnership and interaction, but mostly they are depending on us. We have a good pre-sale and after sale services, I fly wherever I need to support the customers.”

The next and last question was about the number of patent the company owned and aimed at complementing the content of this research about the Knowledge Intensity level of the companies. This will be more discussed in the next chapter.

Table 18: The degree of dependency and number of the patents for each company

<table>
<thead>
<tr>
<th>Interview code</th>
<th>Industry sector</th>
<th>Degree of Dependency to the customers</th>
<th>Number of Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-01</td>
<td>ICT</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>C-02</td>
<td>Health care</td>
<td>Very low</td>
<td>4 patent families. And some specific patents for some diseases</td>
</tr>
<tr>
<td>C-03</td>
<td>systems for secure communication (Lift industry)</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>C-04</td>
<td>hair extensions</td>
<td>High</td>
<td>0</td>
</tr>
<tr>
<td>C-05</td>
<td>Biotech</td>
<td>Very low</td>
<td>0</td>
</tr>
<tr>
<td>C-06</td>
<td>provider of advanced simulators for operator training</td>
<td>Low</td>
<td>0</td>
</tr>
</tbody>
</table>
5 Analysis and Discussion

This chapter is aimed at analyzing the data presented in the Chapter 4 in order to answer the research questions presented in Chapter 1. The chapter starts with the analysis and discussion of the data and how it is related to the different theories and the literature review.

In order to analyze the empirical data, this thesis follows the stages that discussed in Section 3.6.2. Analysis was conducted by coding the interviews and categorization of the codes (Table 8). The Table 8 also shows how the interviewer questions are connected to the researcher questions and how they are categorized to address the research questions. The codes were interpreted and three types of knowledge were extracted based on both the data and theories. The main characteristics of each company were put together with regard to three types of knowledge. The next step in analysis was to find out if there were any differences or similarities between the companies when it came to internationalization process. By using the aforementioned results a framework was developed. The framework presents the role of each Knowledge in the internationalization process. The following chapter will go through the analysis steps and the suggested model will be presented at the end of the chapter.

5.1 Different types of Knowledge

The first purpose of this study is to answer to the first question of the research:

➢ What are the different types of knowledge which are influential on internationalization of Small- and Medium-sized Enterprises (SMEs)?

Part 2.4 from Chapter 2 of the study was concentrated on the knowledge-based perspective of internationalization and in that section I went through the most important and premium studies about the knowledge in the SME’s internationalization context. Several studies on the different types of knowledge categories were reviewed; and the role of knowledge in internationalization of Small- and Medium-sized Enterprises was discussed thoroughly. The chapter ended with determining and classifying the different types of knowledge that were used as a basis to develop the conceptual framework.

As it was discussed in the previous chapter and it was presented in Table 3, the interview guide was designed in knowledge-based context. The aim was to discover different types of knowledge and the way they affect the internationalization process of the firms under study. In order to reach to that aim, the study investigated the firms from the idea generation phase to the phase the firms are active in international markets. Note that these phases are defined in the context of current study to facilitate the data analysis process for the researcher. The questions were designed in a way to draw out the different types of knowledge which firms’ took advantage of them in order to be successful in each phase.
### Table 19: Research questions, researcher questions and coding

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Researcher Questions</th>
<th>Interviewer Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ What are the different types of knowledge which are influential on internationalization of Small- and Medium-sized Enterprises (SMEs)?</td>
<td>Company background and Idea generation process</td>
<td>Please describe the background of how the business idea was initiated?</td>
</tr>
<tr>
<td></td>
<td>What types of knowledge have they used to initiate the idea?</td>
<td>Who else were in idea generation and what were their roles?</td>
</tr>
<tr>
<td></td>
<td>Company competency</td>
<td>What is your specific competence and how it contributed to development of business idea?</td>
</tr>
<tr>
<td></td>
<td>What is the company’s specific competence and how did it contribute to development of the business in foreign markets?</td>
<td></td>
</tr>
<tr>
<td>➤ How do different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises (SMEs)?</td>
<td>Starting the international business</td>
<td>When and how did you decide to start international activities?</td>
</tr>
<tr>
<td></td>
<td>What types of internationalization did they have?</td>
<td>How did you start internationalization process?</td>
</tr>
<tr>
<td></td>
<td>How did different types of Experiential Knowledge affect SMEs to start the internationalization process?</td>
<td>How did you choose the foreign target market?</td>
</tr>
<tr>
<td></td>
<td>Doiing business in international markets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How did they manage to be successful in international markets and how did they conduct a business? (exploring the role of knowledge)</td>
<td></td>
</tr>
<tr>
<td>Knowledge intensity</td>
<td>Is the company knowledge-intensive or not?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>How is your relationship with customers do you depend on them for product/service development or do they depend on you?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How many patents does your company have?</td>
</tr>
</tbody>
</table>
Based on what was discussed on the Chapter 2, after studying different perspectives on types of knowledge that play role in internationalization, I classified knowledge, which is useful for the firm’s internationalization, into two main types: one type is Objective knowledge, which can be taught and is the same as what Johanson & Vahlne, (1977) defined. The other type is Experiential knowledge which consists of Technological knowledge, International knowledge and Market-specific knowledge.

The data gathered from the interviewees were presented in the previous chapter in detail. Here I will present some of them in order to provide a better understanding of the different types of knowledge that the cases use to run their business.

5.1.1 Technological Knowledge

Technological Knowledge refers to the experiential knowledge about the technology upon which the firm’s products are built (Nordman & Melen, 2008, p. 175). It can also be referred as knowledge of operation; I regard this knowledge to be purely technological and devoid of any business element. The Table 9 presents some of the quotes form interviewees which refer to the Technological Knowledge in the companies under study.

<table>
<thead>
<tr>
<th>Company</th>
<th>Interviwees’ quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-01</td>
<td>“[…] it was my user oriented design view that generated the idea […]”</td>
</tr>
<tr>
<td>C-02</td>
<td>“[…] it was a professor in Japan who was very successful within the resonance sensor technology and the professor in Umeå, they liked each other and decided to commercialize the business idea.”</td>
</tr>
<tr>
<td>C-03</td>
<td>“[…] the founder worked with the same kind of products before so he had knowledge from the beginning and it was just to sell the product to the right customers, and of course the knowledge was very important.</td>
</tr>
<tr>
<td>C-04</td>
<td>“[…] She is very good at knowing what good product is and how it should be.”</td>
</tr>
<tr>
<td>C-05</td>
<td>“I have had several graduate students work in my lab, 4 or 5 people that defended their thesis. The last guy was ..., he used four years on this protein that could be used to monitor the speed of the brain…we can monitor the speed that brain is going to die. It is useful for disease such as MS. I was a supervisor […]”</td>
</tr>
<tr>
<td>C-06</td>
<td>“[…] the manager here with some companies here around Umea started a joint venture between University, the third party and us... They had a big knowledge in computer science.”</td>
</tr>
</tbody>
</table>

Data gathered from interviewees conceive the major role of Technological Knowledge in the creation, development and success of SMEs in both domestic and international markets.

Back to the theories on Knowledge-based perspective of internationalization, and based on the literature, Internationalizing firm should put great effort into developing its knowledge of foreign markets and customers and as Melen (2010) argues correctly, if an SME has invested in its development of Technological Knowledge, it will have an easier time developing knowledge about foreign customers. The firm’s Technological Knowledge can also help it develop
knowledge from its previous experiences of operating abroad. Therefore, developing Technological Knowledge can make it easier for a firm to understand how to do business abroad (Melen, 2010, p. 159).

The data shows that all the SMEs, should possess a Technological Knowledge in order to start the internationalization process. Moreover Technological Knowledge plays an important role in SMEs’ knowledge development. Next section will discuss more on the role of Technological Knowledge on the internationalization of SMEs.

5.1.2 Market-specific Knowledge

The next type of knowledge that has been identified from the data is Market-specific Knowledge. As it was defined in Chapter 2, Market-specific Knowledge refers to the type of knowledge which includes knowing about customers, competitors and market conditions in a specific foreign market, as well as knowing about government and institutional frameworks in that particular country market. By looking at the data from previous chapter, the role of Market-specific Knowledge in the SMEs’ development and going abroad is apparently crucial. Here I only present some of the quotations that refer to the importance of this type of knowledge for SMEs internationalization process (see Table 10).

Table 21: Market-specific Knowledge quotations

<table>
<thead>
<tr>
<th>Company</th>
<th>Interviwees’ quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-01</td>
<td>“[...] I went to the people to whom we were going to sell the idea to, and ask them how does it work today and how could it work based on your possibilities and abilities and ask them about the problems that they have. We (the founder together with the research team) asked the users about their needs [...]”</td>
</tr>
<tr>
<td>C-02</td>
<td>“[...] We have consultant that tell us for example for Germany you need this and that and for UK you need this and that. Especially for medical devices, it is a huge differences between for example US, Canada and EU. In US there is quite tough situation to register product in North America, it takes a lot of time and effort and money to register product there. In Japan also is the same. We have distributors that help us with registration, administration and regulatory issues.”</td>
</tr>
<tr>
<td>C-03</td>
<td>“[...] in Europe, you have three regions, the Nordic region, Mid Europe, UK, France, Germany, and the Mediterranean like Spain, Italy…and it is three ways to do business, three different planets. You can’t do business in Italy the way you do in Germany or Norway [...]”</td>
</tr>
<tr>
<td>C-04</td>
<td>“[...] She is very good at knowing what good product is and how it should be”. Also based on the data from interview, she (founder of C-04) has a great knowledge about what the users of their products need and what they want.</td>
</tr>
<tr>
<td>C-05</td>
<td>“[...] The reimbursement system is different and we are not really familiar with the systems in different countries..., For example in US we need to have some kind of notice from FDA that we are allowed to sell it. And we have to state that it cannot be used for the patient, and that the product should be labeled Research Use Only. [...]”</td>
</tr>
<tr>
<td>C-06</td>
<td>C-06 business model is based on the relationship with the large companies and use their networks and customers. In that way, the Market-specific Knowledge that they need to have is mostly related to the cultural and language differences in order to communicate with customers.</td>
</tr>
</tbody>
</table>
5.1.3 Business Knowledge

In Chapter two, it was mentioned that one of the important types of knowledge is International Knowledge which is defined as a kind of Experiential Knowledge about conducting business within an international setting. International Knowledge is about managing relationships with foreign counterparts.

Based on the information gathered from interviewees, I recognized that the International Knowledge, based on the definition above, could be considered as a part of the knowledge of “How companies run and manage their businesses”. None of the interviewees mentioned the International Knowledge in the context of this thesis as an independent knowledge that made it possible for them to be successful in international markets. However, their most concerns were finding a right partner(s) to use their Market-specific Knowledge and networks in the foreign markets. Managing relationships with foreign counterparts is indeed an important part of the knowledge that the companies need to have in order to be successful but it is not enough. I realized that the knowledge about how to run the business, manage the resources, relations and other aspects of the business plays a major role in doing international business. In the previous chapter, I mentioned the term General Knowledge in some part referring to the know-how of business, commercializing the products and the knowledge about i.e marketing strategies and techniques.

Bearing in mind the aforementioned discussion, I reviewed some related literature on this type of knowledge. Johanson & Vahlne (1977) distinguished between General Knowledge and Market-specific Knowledge. The former concerns the marketing methods and common characteristics of certain types of customers, irrespective of their geographical location depending on similarities in the production process. This kind of knowledge can often be transferred from one country to another (Johanson & Vahlne, 1977).

International Knowledge refers to experiential knowledge about conducting business within an international setting. As Melen (2010) argues, the International Knowledge is important because it gives the firm knowledge about its own resources to engage in operations abroad. In doing so, such knowledge enhances the firm’s ability to understand common characteristics among customers, irrespective to their geographical location, and to interact with foreign counterparts in a successful manner.

Relying on all the discussion above, this thesis defines Business Knowledge as a combination of knowledge concerning marketing methods and common characteristics among customers, irrespective to their geographical location, and the experiential knowledge about how to find the right partner, managing both the international and domestic network alongside with the knowledge about how to interact with foreign counterparts in a successful manner.
To briefly sum up this section, this thesis identified three main types of Experiential Knowledge that affect the internationalization process of the Small- and Medium-sized Enterprises. These three are:

- Technological Knowledge
- Business Knowledge
- Market-specific Knowledge

5.2 The Role of Different Types of Knowledge in Internationalization of Small- and Medium-sized Enterprises

The aim of this section is to answer to the second question of this thesis:

➢ How do different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises (SMEs)?

In the last section, I identified the main three types of experiential knowledge which are effective on SME’s internationalization process. In this section the goal is to get the better understanding of the impact of different types of knowledge on the companies under study. In order to reach that goal, the degree of each type of knowledge in the companies during the different phases of internationalization will be discussed. Based on the data from interviewees, the researcher questions (see Table 8) will be argued to analyze the data in the best possible way.

Note that in the analysis part, the companies are analyzed on different stages. These stages are Idea generation, Starting the internationalization activities, and International stage which the company has business in different markets abroad. These stages are just defined in the context of this thesis to help me as the researcher to grasp a better understanding of the process and also facilitate the analysis process for me.
5.2.1 Companies’ Knowledge Status

Table 11 shows a brief presentation of different types of knowledge status in different phases of the company’s internationalization process. All the information is based on the data gathered from interviews.

**Table 22: Companies’ knowledge status**

<table>
<thead>
<tr>
<th>Company C-01</th>
<th>Technological Knowledge</th>
<th>Business Knowledge</th>
<th>Market-specific Knowledge</th>
<th>Knowledge intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea generation</td>
<td>Degree: High</td>
<td>Degree: Low</td>
<td>Degree: High</td>
<td>Medium</td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: -</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the internationalization</td>
<td>Degree: High</td>
<td>Degree: Medium</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: External</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Degree: High</td>
<td>Degree: Medium</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: External</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company C-02</th>
<th>Technological Knowledge</th>
<th>Business Knowledge</th>
<th>Market-specific Knowledge</th>
<th>Knowledge intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea generation</td>
<td>Degree: High</td>
<td>Degree: Low</td>
<td>Degree: Low</td>
<td>Very high</td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: -</td>
<td>Source: -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the internationalization</td>
<td>Degree: High</td>
<td>Degree: Medium</td>
<td>Degree: Medium</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: External</td>
<td>Source: External</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td>Source: External</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company C-03</th>
<th>Technological Knowledge</th>
<th>Business Knowledge</th>
<th>Market-specific Knowledge</th>
<th>Knowledge intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea generation</td>
<td>Degree: High</td>
<td>Degree: Low</td>
<td>Degree: Low</td>
<td>High</td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: -</td>
<td>Source: -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the internationalization</td>
<td>Degree: High</td>
<td>Degree: Medium</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company C-04</th>
<th>Technological Knowledge</th>
<th>Business Knowledge</th>
<th>Market-specific Knowledge</th>
<th>Knowledge intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea generation</td>
<td>Degree: Medium</td>
<td>Degree: Low</td>
<td>Degree: High</td>
<td>Low</td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: -</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the internationalization</td>
<td>Degree: Medium</td>
<td>Degree: Medium</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td>Degree: High</td>
<td></td>
</tr>
<tr>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td>Source: Internal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As it was pointed out in previous chapter under the title ‘Specific Competences’, all of six cases stated the fact that their competencies are based on the different types of knowledge that they have. Thus, as mentioned in chapter 2, competitive advantage has come to be seen as knowledge-based and not raw materials; consequently firms create and sustain competitive advantage by protecting valuable knowledge through preventing its migration and reducing its imitability (Liebeskind, 1996, cited in Prashantham, 2005, p. 39-40, Demsetz, 1991, p. 172, Kogut and Zander, 1993, p. 627).

As it was discussed in the literature before, Johanson and Vahlne considered lack of market knowledge as a significant obstacle to firms’ internationalization. They argued that the main source of that knowledge is the firm itself, through its experience of foreign operations, and as recently emphasized network relationships (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 2003). Relying on the data I gathered through interviews, it is obvious that the latter approach is dominant in the context of this thesis. In other words, all of the cases under studies took advantage of their international networks and partners in order to grasp a market knowledge.

In fact the data indicates that the knowledge is not a barrier to the internationalization process of SMEs but it is a driver of an accelerated internationalization process. While the literature review showed that the earlier models (U- and I-Models) have considered knowledge as a barrier to
internationalization, in that sense that acquiring market knowledge or the firm developing knowledge as an innovative process influences the internationalization process in an incremental way. For the cases under study in this thesis, some of them could be considered as Born Global, which are being driven by knowledge in that it is largely present in knowledge-based industries, and competitive R&D levels are driving a faster and earlier internationalization process (Brennan & Garvey, 2009, p. 129).

Regarding the Technological Knowledge, as it was pointed out in the literature, I assumed that all the SMEs should possess a Technological Knowledge in order to start the internationalization process. Moreover, Technological Knowledge plays an important role in SMEs’ knowledge development. Internationalizing firms should put great effort into developing its knowledge of foreign markets and customers and as Melen (2010) argues accurately, if an SME has invested in its development of Technological Knowledge, it will have an easier time developing knowledge about foreign customers. The firm’s Technological Knowledge can also help it develop knowledge from its previous experiences of operating abroad. Therefore, developing Technological Knowledge can make it easier for a firm to understand how to do business abroad (Melen, 2010, p. 159). The data from cases also proves the importance of Technological Knowledge in the SMEs business development. The information shows that the Technological Knowledge for the cases under study is considered as a basis for developing the other types of knowledge and consequently developing their business beyond the borders of their home country. In the same direction, Nordman & Melen (2008) argued that Technological Knowledge has a positive impact on the early internationalization of the investigated firms in the study (Nordman & Melen, 2008).

From the literature that was discussed in chapter two, Oviatt and McDougall highlighted another type of knowledge, knowledge-intensity, which plays a separate role from resource regulation, that of an enabling resource leading to the firm’s globally mobile offerings in the marketplace (McDougall et al., 1994 cited in Prashantham, 2005). They believe that, in addition to market knowledge, there is an emphasis on the role of (Technological) knowledge-intensity in internationalization; consequently software and biotechnology firms, to cite two popular examples, have been noted for their proactive and early internationalization (Prashantham, 2005, p. 40).

Based on the discussion above, the interesting fact about the degree of Technological Knowledge and companies business development is the difference between companies with the lower degree of Knowledge Intensity and the ones with the higher degree of Knowledge Intensity is evident as shown in Table 11. The firms with the higher level of knowledge intensity rely on their product(s) to invade the foreign markets; they create the desire and want for the potential customers. The demand for their products existed however they the first providers of this demand in the market based on their Technological Knowledge. To give some examples, interviewee from the case C-06 stated the fact that in some markets they have problems because the users of industrial machines haven’t realized the essence of using their product as a
simulate to help them to optimize their usage from those machines. The interviewee for the case C-05 mentioned the other fact that proves the following conclusion: the customers contact us as soon as they realize what is the benefits and usage of our kits! The C-02 also brought up the similar quotation:

“I believe that internationalization of our company is based on the Technological Knowledge, the technology as a door opener for this company. The customers listen to us and in the first place they don’t believe that such a product exists but we have scientific publications and also demonstration for our products which convince the customers”.

As he correctly mentioned, the technology is “door opener” for these companies. On the other hand, the companies such as C-04 or C-01 that don’t have a high level of knowledge intensity, have to possess the fairly high knowledge about the market, customers’ needs and the gap between the current products on the market and the customers need to be able to commercialize their products in the foreign markets. So the Technological Knowledge alongside with Market-specific Knowledge is together considered as a door opener to the international markets for these companies.

All of the cases underlined the use of partnership and business networks in their international marketing and commercialization of the products. C-01 started the internationalization by using its partner’s network in Finland. For the C-02, the partnership with British partner didn’t work well and the current CEO with the specialty in commercialization changed the firm’s approach toward international markets. The C-03 started the international based on the partners in different markets and as they highlighted, the main dilemma for them was finding a right partner. In the case of C-04 the networks of friend and words of mouth was used as the most effective marketing strategy for the company. C-05 mentioned the network of scientist and their opinion about their assay as a measure to estimate the potential market for their ground breaking kit. And finally, C-06 business model is based on the partnership with the giant industrial companies in each industry section.

Most of the cases are taking advantage of their networks and partners in order to get to the better understanding about the Market-specific Knowledge in different markets; C-02 by using the consultant who is expert in the target market, C-03 by choosing the best possible distributor who has the overall and comprehensive knowledge about the country of target and similar trends for the other cases.

The importance of Market-specific Knowledge is evident by looking at Table 11. At the beginning of internationalization most of the cases, 4 out of 6, had a high level of Market-specific Knowledge, and the other two that possessed the medium level of Market-specific Knowledge were very high-tech companies in the biotech and health-care industries. For the latter ones, their technology is absolutely door opener in the foreign markets and beside that, the Market-specific Knowledge is mostly concentrated on the different rules and legislations they
need to pass in order to launch the products into the target market. Those companies don’t have that much problem in finding customers as they have unique high-tech products which have been launched in the market for the first time.

And finally the role of Business Knowledge that is defined in the context of this thesis is significant, especially in the firms which do not posse the “Very high” level of knowledge intensity. The data shows that SMEs’ experiential Business Knowledge helps them to gain the Market-specific Knowledge through finding right partners and networks in different foreign markets. Back to the definition of Business Knowledge, which is defined by this study as combination of knowledge concerning marketing methods and common characteristics among customers, irrespective to their geographical location, and the experiential knowledge about how to find the right partner, managing the network both international and domestic alongside with the knowledge about how to interact with foreign counterparts in a successful manner.

The above-mentioned knowledge is vital for the SMEs in order to be able to enter to the foreign markets and being successful in those markets. The limited resources of SMEs make the role of Business Knowledge even more significant. Appropriate marketing strategies, choosing right partners and using correct networks are all the factors which can be reached appropriately through having enough Business Knowledge.

5.3 A Suggested Model for the Role of Knowledge in Internationalization Process of SMEs

In this section, the purpose is to illustrate the main finding of this study about the role of different types of knowledge in internationalization process of SMEs. At the end of second chapter the conceptual model was presented; the model which was used as a driver to design this research. As it was described in the same chapter, the conceptual framework was just developed in order to facilitate the research design for the researcher. As the nature of exploratory qualitative studies, they are undertaken in the cases when much is not known about the subject of study. Based on the empirical data, literature and theories that were discussed, the following section will present the finding of this study in an integrated and coherent framework.
The role of knowledge in internationalization of SMEs

The model above (Figure 6) presents the different types of knowledge and the role of each type in the internationalization process of the SMEs.

As is presented in Figure 6 the Technological Knowledge is regarded as foundation and basis for the enterprise. All the firms need to posses the minimum level of Technological Knowledge in order to perform successfully. On the other hand “past experiences” has been always present among founders or CEOs of the firms. These experiences can include one or more kind of the three aforementioned knowledges depend on the background of the person(s). As was shown in Figure (A & B) the Technological Knowledge and knowledge gained through past experiences lead to the generation of business idea (High-tech or Low-tech) and consequently creation of the firm. Usually the knowledge from those past experiences helps the founder to understand the need(s) in the market that hasn’t been met by the existing products yet. The Technological Knowledge provides the solution to answer to the gap in the market.

The role of Business Knowledge in this step is more about finding a right partner and/or business networks that could helps firms with development of its business (D). The successful partnership or any kind of interaction with the other business actors cannot be successful without the impact of firm’s business idea. Hence both the firm’s Business Knowledge and business idea (C & D) make it capable of finding the right partner or/ network that provides the firm with the Market-
specific Knowledge ($E$). These interactions with other certainly have lots of other advantages for the firm which has limited resources and lots of obstacles to face but in the context of this thesis the focus is on the knowledge-based view to the internationalization process of the firm.

*Market-specific Knowledge* makes it possible for the firm to get the better understanding of competitive situation in specific foreign market, as well as knowing about governance structures, rules, regulations, norms and values in that particular country market. Note that the partners and business networks are not the only sources of gaining Market-specific Knowledge. The aim of this study is not to identify the different sources of different types of knowledge in the firm but to try to understand the role and impact of the three types of knowledge on internationalization process of SMEs.

Alongside with the Market-specific Knowledge, firm’s Business Knowledge plays an important role in firm’s activities in international markets. It provides firm with the marketing strategies and business knowledge about the customers, competitors and other business actors in the foreign markets that the firm takes advantage of them to survive and develop in the foreign market competitive landscape. Moreover Technological Knowledge could considered as firm’s backbone that make the firm’s product or/and service compatible in the market.

$F$, $G$, and $H$ are presents the role of all the three types of knowledge in firm’s starting of international activities. They make the firm capable of proposing the higher value proposition than the competitors in the foreign target markets.

After starting the international activities, the firm’s knowledge will expand through the foreign market experiences and those experiences are the source of the firm knowledge expansion. $G_R$ and $F_R$ in Figure 6 are representatives of these reverse impacts. The reverse impact could be most significance when it comes to the firm Business Knowledge and Market-specific Knowledge. During the experiences in foreign markets, due to the voice of customers and market feedbacks Technological Knowledge can be subject of changes as well, but it is not considered as a permanent reverse impact to show in the model.

The data gathered from empirical studies revealed that there is a difference between the high-tech firms with the very high level of knowledge intensity and the other firms under study. The technology plays a significant role in the former’s internationalization process: it is a door opener to the foreign markets. Therefore the role of Technological Knowledge to get those firms to the international markets is more highlighted than the Business Knowledge. Those firms will gain the Business Knowledge mostly during the international activities.

Also the *business model* of the firms plays a major role on determining which type(s) of knowledge is considered as a firm’s competitive advantage. For example for the case C-04 the Business Knowledge plays more important role than the Technological Knowledge in making the firm successfully in the international market while the competitive advantage of the C-02 and
C-05 are their Technological Knowledge and for the firm C-06 is their Technological Knowledge alongside with their Business Knowledge which make them able to build trust between their firm and the giant industrial firms in order to benefit from their international and Market-specific Knowledge. As for case C-03 conducting international business was based on a combination of all three types of knowledge.
6 CONCLUSIONS

It is tried in this chapter to provide a clear overview of the main findings if the research. The conclusions derived from the data analysis are presented as well as perceptions on further studies.

6.1 Research Findings and Contributions

The purpose of this study was to identify different types of knowledge which are influential on internationalization of SMEs and to investigate the role of different types of knowledge on internationalization of Small- and Medium-sized Enterprises. In essence the thesis has questioned about what types of knowledge are influential on internationalization of Small- and Medium-sized Enterprises (SMEs). The main objective was to understand how these different types of knowledge affect the internationalization process of Small- and Medium-sized Enterprises.

In order to reach this purpose, the research used qualitative approach and multi-case study research design. Six semi-structured interviews, based on the rich literature review, were conducted with small Swedish firms that involved in the international activities. The aim of this section is to present the main finding of the study and the contributions that the thesis makes to the existing literature.

6.1.1 Research Findings

Three types of experiential knowledge were extracted in response to the first research question: Technological Knowledge, Business Knowledge, and Market-specific Knowledge. The definition of each types of knowledge is as followed:

*Technological Knowledge* or knowledge of operation is defined as the “experiential knowledge” that every firm produces its products by without the inclusion of any business factor.

*Business Knowledge* is defined as combination of knowledge concerns marketing methods and common characteristics among customers, irrespective to their geographical location, and “experiential knowledge” about how to interact with partners and other business actors in a successful manner both in international and domestic scale.

*Market-specific Knowledge* is defined as “experiential knowledge” concerns customers, and competitive situation in specific foreign market, as well as knowing about governance structures, rules, regulations, norms and values in that particular country market.
These three types of knowledge play crucial role in the internationalization of the SME. Using the empirical data and the theoretical framework, a model has been developed, Figure 6, which illustrates the role of knowledge in internationalization of SMEs. The model shows the direct impact of Technological Knowledge together with the past experiences in business idea generation of the firms. These past experiences can include one or more types of experiential knowledge. Rely on the business idea, the firm uses its Business Knowledge to find the right partner, develop a business network and interact with the business actors in a successful manner. For the SME with limited resources, these are considered as a main source of Market-specific Knowledge. In the other words, through partnership, networking and interaction with the other business actors firm gains the knowledge that is needed to expand the business to the specific foreign market. And finally all three types of knowledge together are providing firm to start the international activities. After starting the international activities, the firm’s knowledge will expand through the foreign market experiences and that is shown in Figure 6 by reverse impacts on Business Knowledge and Market-specific Knowledge. Also there is the reverse impact from business partners and networks towards Business Knowledge. Working as a partnership and taking advantage of business networks help firm to improve its Business Knowledge especially in terms of how to find right partners and networks.

To sum up this section, the thesis defined three types of experiential knowledge which play the major role in internationalization of SME. The model developed to illustrate the role that each of those three types of knowledge plays in internationalization of SMEs. It is essential to notice that there is no unique prescription that covers all types of SMEs. For example in the case of high-tech companies with the high level of knowledge intensity Technological Knowledge may play more significant role than Business Knowledge in firm business development in foreign markets. Hence the result of this study must be understood in the context of the industry, the company and the people involved.

6.1.2 Theoretical Contributions

This thesis has contributed to the field of international business regarding Small- and Medium-sized Enterprises and the internationalization of those enterprises from knowledge-based point of view. Despite the important role of knowledge in internationalization process of SMEs, there are somewhat fragmented theories and discussions about the different types of knowledge which are influential in that process in existing literature. One of the most consistent classifications of the knowledge in this context was presented by Johanson & Vahlne (1977) (See section 2.4.3). They classified knowledge based on the way in which knowledge is acquired. One type objective knowledge, can be taught, and the other experience or experiential knowledge that can only be learned through personal experience (Johanson & Vahlne, 1977, p. 29). Although in their recent work Johanson and Vahlne (2003) highlighted networks relationships as source of knowledge beside the firm experiences through foreign operations, lack of recognizing knowledge concerns aspects such as business actors, partnership, and networking was evident. By broadening a critical knowledge for the SME to be successful in the process of internationalization and
involving a knowledge concerns partnership, networking, and interacting with other business actors as part of SME’s Business Knowledge, this thesis contributes to the literature of SMEs internationalization. In line with aforementioned discussion, I divided firm’s experiential knowledge to three separate categories: Technological Knowledge, Business Knowledge, and Market-specific Knowledge.

The three types of knowledge were used to investigate the role of knowledge in the internationalization process of SMEs. In existing literature of SMEs internationalization, experiential knowledge of foreign markets has been considered as essential for firm internationalization. Different role are defined for the knowledge in the context of internationalization of SME: knowledge as regulator of the resources committed to a foreign market by the firm (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 2003), knowledge as an enabling resource leading to the firm’s globally mobile offerings in the marketplace (McDougall et al., 1994 cited in Prashantham, 2005), and knowledge as a main source of firm’s competitive advantage also expressed by some scholars (Demsetz, 1991, p. 172; Kogut and Zander, 1993, p. 627; Liebeskind, 1996; Prashantham, 2005) are some of the major notions about knowledge. However none of the discussions about knowledge has expressed thoroughly about the role of knowledge in internationalization of SMEs. The findings of this thesis by widening the set of knowledge types and by exploring the the role of each types of knowledge contributes to the work of researcher with the knowledge-based perspective to internationalization of Small- and Medium-sized Enterprises.

6.1.3 Managerial implication

The findings reported in this thesis suggest some practical implications for small- and Medium-sized firms. These implications do not only address local small firms, but also international small firms. Just as firms have international activities, they need to consider the role and importance of different types of knowledge in order to have a successful manner. In this respect, it is important to bear in mind that all three types of knowledge, Technological, Business, and Market-specific, are essential for the firm in order to be able to develop the business and succeed in the international markets. More particularly the findings have shown the importance of business networks and partnership for SMEs in order to manage their business in the foreign markets. Beside the relative technological knowledge, and general business knowledge that every firm needs to run its business, the firm needs to know how to find the best possible partner and how to join to the business networks since they are the main sources for the market-specific knowledge-the vital type of knowledge for SME in order to survive and growth in the foreign market.

Therefore managerial awareness of the fact that knowledge is the main source of competitive advantages of SMEs and also the role of each types of knowledge in the process of internationalization of the firm can prove important for the firm to progress and develop.
6.2 Suggestions for further research

This study tried to grasp a better understanding of set of knowledge types that are influential in the internationalization process of SMEs. However the scope of this thesis was mostly focused on the business environment, while the researches stated that interaction between small firm and socio-political actors has effect on business development of the firm (Bengtson, Pahlberg, & Pourmand, 2009). In the same study the authors discussed the knowledge that concerns aspects such as political decisions, political actors involved in the decisions and understanding the needs of the connected actors; and considered high level of this knowledge as a prerequisite for small firms in order to have an influential interaction with the political actors. Hence further studies can be conducted with more focus on the social and political aspects beside business aspects of knowledge.

Furthermore, as it was mentioned before, there is no unique prescription for all the SMEs, but there could be future studies with focus on the role of knowledge in Born-global SMEs versus traditional ones. There are differences between these two types of SMEs that need more research in that area.

Knowledge-intensity (KI) is the concept that is not well-elaborated in existing literature of SMEs’ internationalization; while, as the result of this study showed, it has a significant impact on the internationalization of the firm and the role of different types of knowledge differ between the firms with the high level of knowledge-intensity and those with the low level of knowledge-intensity. Maybe quantitative research approach and probably incorporating a much larger sample of respondents could help to explore the role of KI in the internationalization of SMEs.

And finally, this study has made it evident that the companies’ business models have major impact on their pattern of internationalization. For example the SME which is based on the World Wide Web (WWW) follows a different process of internationalization in comparison with one that is not based on WWW; therefore there is room for further research in this area.
7 TRUSTWORTHINESS AND LIMITATION

The following chapter reflects the research trustworthiness, also known as research quality, as well as the limitations of the study.

7.1 Validating the Accuracy of Findings

The concept of validity is explained by a wide variety of terms in qualitative studies. This concept is not a single, fixed or universal concept, but “rather a contingent construct, inescapably grounded in the processes and intentions of particular research methodologies and projects” (Winter, 2000, p.1). Although some qualitative researchers have argued that the term validity is not applicable to qualitative research, however they have realized the necessity of some kind of qualifying measure for the qualitative research (Golafshani, 2003, s. 602).

As it was discussed in Section 3.1 my work is based on “realist constructivism” paradigm which is a combination of positivism and (social) constructivism; but defining types of validity in terms of procedures is generally labeled by instrumentalist or positivist (Maxwell, 1992, s. 281). In the article “Understanding Reliability and Validity in Qualitative Research” N. Golafshani has stated that the traditional criteria for validity find their roots in a positivist tradition, and to an extent, positivism has been defined by a systematic theory of validity (Golafshani, 2003, s. 599).

Joppe (2000, cited in Golafshani, 2003, p. 599) provides the following explanation of what research validity is: “Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are.”

Since any kind of validity in qualitative research should begin with the perception and understanding of researcher from conception of validity in order to be productive, I will try to elaborate my personal understanding of validity regarding this research.

I am not a pure positivist but more of a constructivist. In am in basic agreement with the Maxwell point of view who conceives understanding as a more fundamental concept for qualitative research than validity (Maxwell, 1992, s. 282). Similar to Maxwell (Maxwell, 1992), as it is the case of this study as well, the qualitative inquiry provides an insight about different typology categories of validity which in its own terms follows the same path and goal of qualitative research.

As a qualitative researcher, we observe and absorb every possible event that takes place in our surrounding. It is inevitable to avoid experiencing or stepping out of one’s self experiences. Since the world and its diversity puts forward different perspectives for each event and experience thus it is likely to have equally valid interpretations and understandings from different perspectives. These experiences remain entirely bound to the personal experiences of the observer.
In order to measure the validity of qualitative research Maxwell defined three categories. This chapter will be followed by a short presentation about each category.

7.1.1 Descriptive Validity

The first concern of every qualitative researcher is the accuracy of the empirical data. In the other words it has to be ensured that the researcher is not making up the data or distorting the things he/she saw and heard. In the context of this study the most relevant question to ask is: “if I (researcher) report that an informant made a particular statement in an interview, is this correct? Did he or she really make that statement, or did I mis-hear, mis-transcribe his or her words?”

All the later validity categories that will be discussed later are dependent on this primary aspect of validity (Maxwell, 1992, s. 286). In this study all interviews were recorded by two different sound recorders in order to prevent any possible distortion. Each interview was transcribed verbatim immediately after the data was gathered. Also in some cases that the interviewee’s response was not clear enough, I contacted them by phone to confirm the data in this way I made sure that all the data was gathered correctly with high accuracy.

In descriptive validity there is also an issue what is called secondary descriptive validity by Maxwell (1992) which refer to

7.1.2 Interpretive Validity

The validity of research does not only concern providing a valid description of the events and behaviors in the setting of the study; but also what these events, concepts and behaviors mean to the people who are involved in the study. In the other words, the participants’ perspective about the phenomena under study and the terms that are used in the research should be the same as what the researcher and the study aim to reach. Maxwell (1992) has called this sort of understanding interpretive and the type of validity associated with this as interpretive validity because this aspect of understanding is most central to interpretive research (Maxwell, 1992, p. 288,289).

In order to obtain the interpretive validity, I sent the brief explanation of the research’s objectives and the key terms of the research to the interviewees via email prior to the interview. I also described briefly the aim of study, the background, and also what I meant by the terms of knowledge and internationalization before each interview session.

7.1.3 Theoretical Validity

Theoretical validity refers to an “account’s validity as a theory of some phenomenon” (Maxwell, 1992, s. 291). Rely on those two aspects he defined two aspects of theoretical validity:

- The validity of concepts themselves as they are applied to the phenomena;
- And the validity of postulated relationship among the concepts.
The first one is closely match with what is generally known as construct validity. As Yin (2009) has defined, construct validity refers to “establishing correct operational measures for the concepts being studied” (p.34). To make sure that this study have met the test of construct validity, Table 8 “Research questions, researcher questions and coding” in Chapter 5 illustrates the relation among different steps of study and the way that original objectives of this study has been addressed through different steps of the study. The research questions are related to the interview guide while they have been categorized based on the firm’s internationalization phase and knowledge status. Table 11 in the same chapter shows the firms’ knowledge status in the context of internationalization process. The aforementioned discussion assured that the theoretical validity measures have been fulfilled in this study.

The second aspect of theoretical validity includes, but not limited to, what is generally called internal validity (Maxwell, 1992). As Yin (2009) has argued internal validity is not exploratory study such as this study, but the second aspect of Maxwell theoretical validity is more than just the internal validity. It matches with what Runciman calls “explanation” (Maxwell, 1992, s. 291). In the current study the data was coded and explained thoroughly in order to establish the relationship among data and to show how certain conditions lead to other conditions.

7.2 Reliability

The objective of this test is to ensure the same findings and conclusions are achieved if another investigator follows the same procedures that the study has followed and conducted. This means that with the same case study conducted all over again, the same results are arrived. The goal of reliability is with other words, to minimize the errors and biases in the study (Yin, 2009).

The prerequisite to allow other researcher repeats the same case study is to documents the procedures followed in the earlier case. Ritchie & Lewis (2003) stated some questions that might be asked to assess the reliability of the research. I am using the main criteria in each question to discuss the reliability of this research.

The sample design in this thesis was based on the defined criteria (See section 3.5.8) which were designed based on the study target population. The empirical data was collected through interviews. The procedures of data collection are thoroughly discussed in Chapter 3. The data analysis was conducted by coding the interviews and categorization of the codes. The codes and frameworks for connecting the data to the main research questions were illustrated and systematically discussed in chapter 5. All the interpretations derived from the data are supported by theories in order increase the reliability of the paper.

Based on all the aforementioned discussions and the fact that all the research process and procedures are thoroughly explained, I consider this research as a reliable qualitative research which makes replication possible for others.
7.3 Limitation

Due to the pragmatic considerations such as time and money the number of cases which were selected for the study was limited. I tried to select the SMEs based on the selection criteria defined carefully for my study in order to make it more objective; however there are unavoidable natural constraints in every study as it was the case here as well. The financial resources for travelling, personal contacts and other practical issues are of great importance. Hence it was not possible for me to travel all around the country to collect the data from SMEs. It was tried to select the firms in a systemic way to avoid the subjectivity and to make the result more reliable however the period of the data collection (one month) is not enough which calls for studies that can focus on this issue without the time and geographical barriers. The results of such studies can probably be generalized in a larger scope and provide new aspects of the phenomenon.

Moreover, the field of Small- and Medium-sized Enterprises is not homogenous field. The SMEs differ in terms of technology, the industry section, and their approach towards internationalization. Although I tried to include various types of SMEs in terms of industry and technology, but the limitations of this study did not let me to study different types of SMEs thoroughly. I believe that this study can be a start point for further studies in this field which will broaden the role of knowledge in the field of SMEs- or even multinational companies’ internationalization.
8 References


The role of knowledge in internationalization of SMEs
Siavash Ali Madadi Jani


9 Appendix - Interview Guide

The following interview guide is used as an aid while conducting interview in order to ensure that all aspects of the study are taken into account. Based on the replies and things said by interviewee, questions that are not included in the guide may be asked as well.

The interview guide is not handed out to the interviewees.

Basic Information:

1. What is your name?
2. When was the company created?
3. Since when have you been involved with the company?

Knowledge- and Internationalization-related questions:

4. Please describe the background of how the business idea was initiated?
5. Who else were in idea generation and what were their roles?
6. What is your specific competence and how it contributed to development of business idea?
7. When and how did you decide to start international activities?
8. How did you start internationalization process?
9. To what extent did you rely on your experiences to go international?
10. How did you choose the foreign target market?
11. What were the main dilemmas for you to start internationalization and how did you figure them out?
12. What was the main factor(s) for your company success in abroad? (What is your main competency in compare with competitors that made you successful in that market?)
13. How is your relationship with customers (are you depend on them for product/service development or they depend on you?)
14. How many patents does your company have?
15. To what extent are the chosen business contacts dependent on your previous experiences (knowledge)?