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INTERNAL CHANGES IN INTERNATIONAL NEW VENTURES DURING INITIAL INTERNATIONALIZATION: FINNISH SMEs OPERATING IN DYNAMIC HIGH-TECH INDUSTRIES

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ABSTRACT

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The purpose of this qualitative research is to study how international new ventures change internally during initial internationalization. Based on the analysis of seven INV firms, a framework illustrating this change process, will be developed. This research will also develop earlier theories, and create a solid combination of existing theories to explain the phenomenon.

INV firms internationalize more rapidly and aggressively than traditional MNEs. At the same, external and internal drivers cause changes in INVs culture, resources, capabilities, strategic management, and output decisions inside the company. Organizational learning and resource acquisition through international business networks explain how INVs are able to cope with the dynamic high-technology industry and be able to adapt. Internationalization of INVs proceeds through several phases, which may be gone through rapidly due to the network effects and INVs' special characteristics.

The results of this research revealed that INVs internal change process proceeds through four phases; pre-incorporation phase, product development phase, internationalization and growth phase, and maturation phase. INVs culture, resources, capabilities, strategic management, and outputs change significantly during initial internationalization, and INVs develop from small start-ups into fully established companies.

TIIVISTELMÄ

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Tämä kvalitatiivinen tutkimus selvittää, kuinka INV-yritykset muuttuvat sisäisesti varhaisen kansainvälistymisen aikana. Seitsemän yrityksen analysoinnin pohjalta luodaan viitekehys, joka pyrkii kuvaamaan tätä muutosprosessia. Tutkimus pyrkii lisäksi kehittämään teoriaa aiheesta ja luomaan teoriapohjan, jota voidaan hyödyntää ilmiön tutkimisessa myös tulevaisuudessa.

INV-yritykset kansainvälistyvät nopeammin ja aggressiivisemmin kuin perinteiset monikansalliset yritykset. Samalla sisäiset ja ulkoiset muutosajurit ajavat yrityksiä muuttamaan kulttuuriaan, resurssejaan, kyvykkyyksiään, strategista johtamistaan ja lopputuotteitaan. Organisationaalinen oppiminen ja resurssien hankkiminen kansainvälisten verkostojen kautta selittävät, kuinka INV-yritykset selviytyvät dynaamisilla korkean teknologian toimialoilla ja pystyvät mukautumaan niiden tarpeisiin. INV-yritysten kansainvälistyminen etenee useiden vaiheiden kautta, jotka yritys saattaa käydä läpi hyvinkin nopeasti, johtuen verkostovaikutuksista ja yritysten erityisominaisuuksista.

Tutkimuksen tulokset osoittavat, että INV-yritysten sisäinen muutosprosessi etenee neljän vaiheen kautta; perustamista edeltävä vaihe, tuotekehitysvaihe, kansainvälistymis- ja kasvuvaihe, ja kypsymisvaihe. Yritysten kulttuuri, resurssit, kyvykkyydet, strateginen johtaminen ja lopputuotteet muuttuvat merkittävästi varhaisen kansainvälistymisen aikana.

Samalla INV-yritykset kehittyvät pienistä start-up-yrityksistä vakiintuneiksi organisaatioiksi.

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After four years of studies in international business and international marketing management, it was time for me to make my final contribution. I wanted to finish my studies in an ambitious way, and write a master's thesis about a topic that is both contemporary and challenging. I posed myself a question: "What is it that interests me and how can I contribute with the skills learned during the journey? After a few seminars and meetings with professors Olli Kuivalainen and Sanna-Katriina Asikainen, it was clear for me that I wanted to focus on international new ventures, as it had become a familiar and interesting field of research to me during the master-level courses.

The process of writing the thesis started in early 2015. Having a few final courses left in the School of Business and Management, I decided to still focus on those and leave the thesis in abeyance for a while. The process continued in August 2015, with a true ambition of graduating at the turn of the year. With valuable support of my supervisor, professor Olli Kuivalainen, I managed to put all the pieces together and the thesis was progressing nicely. Collecting data for the study was not easy, but I finally managed to have a group of companies to participate in the study, and the rest of the writing process was relatively liberating. I finished the thesis process in January 2016, being very satisfied with the final result.

I want to thank all the professors and people of the MIMM program for enabling a superior M.Sc. experience. A special thank will be addressed to professor Kuivalainen for incomparable support, as well as the case companies for being compliant to contribute in the thesis. I want to thank my family for supporting me during the studies, and the friends from whom I got support during the studies and in writing the thesis. Studying in Lappeenranta has been an instructive journey, and now it is time for me to move on towards new challenges.

Helsinki, 25th January, 2016

Joona Pulliainen

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1. INTRODUCTION

During the last decade, small and medium-sized enterprises (SME) have been of increasing interest among different parties. According to Nummela et al. (2006), "politicians, governmental bodies and academics have re-evaluated the significance of this group of firms, and currently regard them as significant sources of wealth and employment". In addition to SMEs, international new ventures (INV), or born globals (BG), have been an increasingly interesting topic among the academia and in public conversation in recent years. For example, in Finland, there have been many examples of BGs operating in the interactive entertainment industry, which have made it to the international spotlights. This is due to their ability to create an innovative business idea and acquire all the necessary resources from their business network, which enables them to become international rapidly and grow relatively fast. In addition, their products and/or services are often highly scalable, which enables them to reach wider scope in the market.

Where the academic literature has mostly concentrated on the reasons of internationalization of INVs (Jones & Coviello, 2005; see also Knight & Cavusgil, 2004; Oviatt & McDougall, 1994), very little has been studied about what happens to these companies during their start-up phase and initial internationalization. Furthermore, literature studying critical incidents and changes in INVs during their internationalization is rather limited. (Autio et al., 2000; Kuivalainen et al., 2012; Turcan & Juho, 2014) We know very little about continued corporate growth and survival of INVs beyond initial internationalization (Zahra, 2005; Sapienza et al., 2006). The reasons why some flexible and quick SMEs are able to become international rapidly have been studied and discussed widely in the literature (Jones & Coviello, 2005; see also Knight & Cavusgil, 2004; Oviatt & McDougall, 1994). Some research has also been conducted about the post-start-up phase of international new ventures, but it has mostly focused on less dynamic or even static industries.

There is a clear research gap concerning the post-start-up phase of international new ventures operating in dynamic industries, as Turcan and Juho (2014) suggest. Furthermore, Kuivalainen et al. (2012) propose a need for more research on the internal change in the rapidly and early internationalizing firms. There is a wide range of literature related to the internationalization and birth of international new ventures, but more research is needed to study what happens to INVs during and after their start-up phase and initial internationalization (Turcan & Juho, 2014). That justifies the topic selection of this research, makes it interesting, and enables the researcher to create novel knowledge on this field of academic research. In this master's thesis relevant literature is reviewed and utilized to illustrate the phenomenon of INVs and their internal changes during initial internationalization. Based on qualitative data, collected by the researcher, it is most likely possible to create novel insights of the initial internationalization phase of INVs.

This study seeks to provide both managerial implications and academic insights into the context of international new ventures, being one of the first attempts to explain how these companies change internally during initial internationalization. The focus of the study is on Finnish SMEs that operate in dynamic high-tech industries. A framework illustrating the internal change process in INVs, during initial internationalization, will be developed. This is done by analyzing the empirical data collected from seven Finnish INVs. The companies have been selected from the Tekes' (Finnish Funding Agency for Innovation) Young Innovative Company programme, using criteria that matches the research setting. Consequently, this paper hopefully arouses discussion on this specific field of research, providing a good starting point and basis for further research. In addition, it provides a theory base that can be utilized in the future.

1.1 RESEARCH QUESTIONS

The aim of this research is to study how international new ventures change internally during initial internationalization. The focus of the study is on Finnish SMEs that operate in dynamic high-tech industries. To achieve the aim of the study, the main research question is consequently:

"How international new ventures change internally during initial internationalization?"

To answer the main research question comprehensively, there is a need for studying and comparing the initial and end condition of the chosen companies, in the chosen timeframe. As the focus of the study is on internal change, it is also essential to find out the drivers of internal change, and how the changes affect companies' performance. Based on data analysis and findings, a framework will be developed to illustrate the evolvement of internal change process in INVs during initial internationalization. The following three supportive questions are placed to delineate the main research question:

Sub question 1. "What are the key drivers of internal change in INVs during their initial internationalization, and what is their impact on internationalization?"

Sub question 2. "How does the change process of INVs evolve during initial internationalization?"

Sub question 3. "How have internal changes affected the performance of the firms?"

1.2 THEORETICAL FRAMEWORK

The theoretical framework of this research is conducted from the literature review. It illustrates the central phenomena, concepts, and contexts of the study. Two meta theories, the Resource-based View (RBV) and the Organizational Learning Theory, are used to underlay the forthcoming models and/or theories of internationalization. These theories create a solid basis for the theoretical part of the research. The RBV explains the importance of resources for gaining sustainable competitive advantage, and the Organizational Learning Theory explains how learning develops organizational knowledge and organizational capabilities. Internationalization is explained through various models and theories of internationalization. Uppsala Model and the Network Approach are more focused on explaining internationalization of MNEs, but they also provide supportive elements explaining the phenomenon in the INV context. INV theory, in turn, seeks answers directly for INVs' existence and rapid internationalization. As a combination these three models and theories provide a solid base to understand INV internationalization, which helps understanding the changes occurring in INVs. The degree of internationalization (DOI) can be defined with external measures, being time, scale, and scope of internationalization. This is essential in order to recognize different internationalization pathways, through which INVs internationalize.

Oviatt's and McDougall's (1994) classification of pathways is used as a basis in this study, when explaining early internationalization and initial internationalization of INVs. In this study, the involved INVs are Finnish SMEs operating in dynamic high-tech industries, which creates the context for the study. The context is assumed to have impact on the business of the firms, as it is developing with a rapid speed and changing constantly. The external change drivers are further assumed to affect on the internal changes undergone by the firms. Internal drivers also play a role in the change process during initial internationalization. Consequently, changes occurring in INVs during initial internationalization are assumed to be resulting from a mixture of both external and internal drivers, as well as their organizational resources and capabilities. The firms' capabilities to flexibly adapt and change according to the market needs is assumed to have performance implications for the INVs. The initial internationalization phase also has impact on further internationalization of the firms. If the performance during initial internationalization has been good, it is assumable that continued internationalization will occur after initial internationalization. However, the actual continued internationalization is delimited out of the scope of this research. The actual evolution of the internal change process during initial internationalization is illustrated on the right side of the framework with a brace.

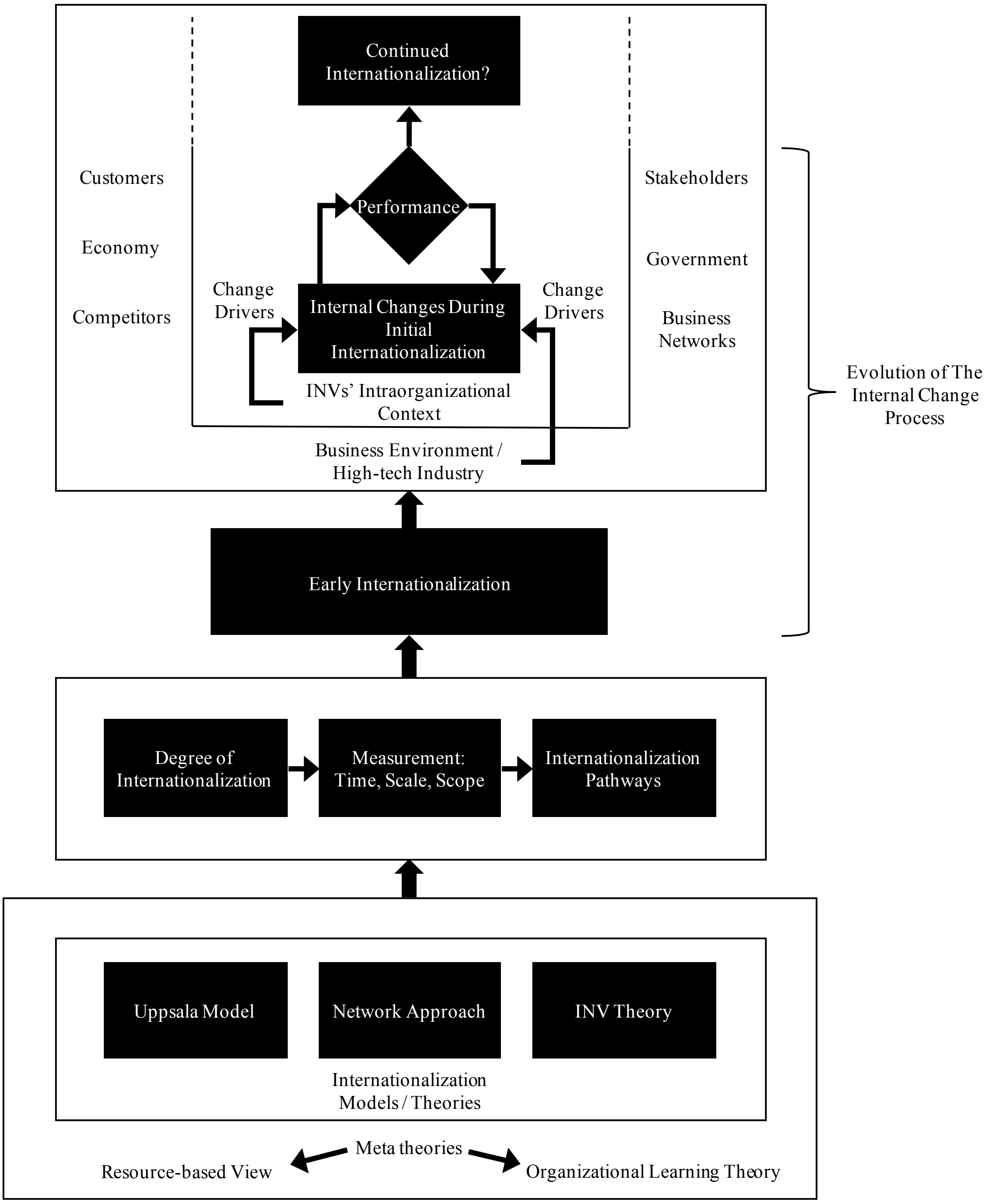


Figure 1. Theoretical framework of the research

1.3 DEFINITIONS AND DELIMITATIONS

This research will focus on INVs, which have passed the phase of initial internationalization. In addition, the thesis will only focus on for-profit organizations. The focus of this multiple case study will also be limited to Finnish SMEs that operate in dynamic high-tech industries. This methodological delimitation enables the researcher to study the phenomenon more accurately, and the results are likely to be more valid when a group of somewhat similar companies is studied. As international new ventures are highly connected internationally through their networks, it might be possible to generalize the results of the research internationally, or in countries with low psychic distance to Finland. However, legislations, cultural aspects, company forms, etc. might delimit this study to be valid only in the Finnish business environment. A relatively large sample in this qualitative study, compared to many qualitative studies on this field of research, may enable comparison and generalization of the results. Finally, the framework inducted from the results of this study will hopefully guide future research and open discussion on what happens in INVs during their internationalization.

In the following list, the crucial terms related to the study are described and defined shortly to indicate the precise meaning of each term used in the study. This will improve readers' understanding of the terminology in the study and prevent misunderstandings. Most of the definitions are based on the academic literature and prevailing understanding about the terms, but some definitions are based on the author's own consideration.

International new venture (INV): Knight and Cavusgil (1996) argue that international new venture (INV) and born global (BG) can be considered to be synonymous terms. Consistently with their view, in this thesis no distinguishing is made between them. Therefore, INV or/and BG is defined as "a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries (Oviatt & McDougall 1994, 49).

High-tech industry: According to Steenhuis and de Bruijn (2006), the definition of high-technology is ambiguous, i.e. there is no consistent definition of high-technology. Firstly, they define high-technology through the level of complexity of the product and the process by which the product is produced. Secondly, they define high-technology through the newness aspect that describes the duration of product life cycles. In other words, some companies are faced with a requirement to continually update their products and/or processes. Complexity expresses a more or less static view on high-technology, whereas newness provides a dynamic element.

To conclude, the level of high-technology depends on both the product and process complexity, as well as the need for continuous update of products and processes. Thus, Steenhuis and de Bruijn (2006) define different levels of technology as expressed in the table 1 below. Accordingly, high-technology industry is about when an average complexity of products and processes is high, and product development rate is high.

Table 1. Technology classification (Steenhuis & de Bruijn, 2006, 1083)

	Process complexity	**Product complexity**	**Product development rate (newness)**
Low technology	Low	Low	Low
Low-med technology	High	Low	Low
	Low	High	Low
	Low	Low	High
Med-high technology	High	High	Low
	High	Low	High
	Low	High	High
High technology	High	High	High

International entrepreneurship (IE): International entrepreneurship is a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations (Oviatt & MacDougall 2000, 903).

Internationalization: The process of adapting firms' operations (strategies, structures, resources, etc.) to international environments (Calof & Beamish 1995, 116).

Internationalization pattern: Jones and Caviello (2005, 292) suggest that "internationalization may be captured as patterns of behavior, formed by accumulation of evidence manifest as events at specific reference points in time". Conducted from this idea, Kuivalainen et al. (2012) suggest that "an internationalizing SME may go through a number of patterns which form part of a distinct (and sometimes stereotypical) internationalization path/pathway". Thus, pattern is related to the behavior of firms which, in turn, constitutes the actual internationalization pathway.

Internationalization pathway/path: Kuivalainen et al. (2012) suggest that internationalization path/pathway is related to the "how" question about the internationalization process. Thus, "a pathway can be understood as consisting of several phases or stages during which a firm follows or shows a certain behavioral pattern related to its internationalization" (Kuivalainen et al., 2012).

Organizational change: The difference in form, quality, or state in an organization over a selected time period (Nummela 2004; Van de Ven & Poole 1995, 512).

Organizational learning: Nevis et al. (1995, 73) define organizational learning as "the capacity or processes within an organization to maintain or improve performance based on experience".

Degree of internationalization (DOI): Various measures are used to assess the degree of internationality. However, Zahra and George (2002) identified three themes under which the DOI can be measured: first, scope (diversification vs. concentration); second, scale (or extent/intensity); and third, time. Through these three themes, DOI can be defined as the firm's internationality measured through scope, scale, and timing of its international activities.

Initial internationalization: The literature has no commonly agreed definition for the initial phase of internationalization. However, there is a need for creating a border between new and adolescent firms, as well as defining the initial phase referred in this paper. Life-cycle models describe the evolution of INVs by dividing their life-cycle into phases, such as "the actual start phase", "international growth", and "consolidation". Here the evolution proceeds from inception to a phase where internationalization has become business as usual. (Gabrielsson et al., 2008) Bantel (1997), for example, defined adolescent firms being from 5 to 12 years old, and having survived the initial critical years. Biggadike (1979) defined new firms being eight or less years old, whereas Cesinger et al. (2000), and Coviello and Jones (2004) noted six years being more widely used as a cut-off point. In this research, a timeframe from 0 to 9 years is used to define the initial internationalization phase of INVs. In other words, initial internationalization starts from the incorporation and it ends at the latest of 9 years after incorporation.

Early internationalization: According to Kuivalainen et al. (2012), understanding on precocious internationalization varies, and different researchers have used time limits from two years (Rennie, 1993; Moen and Servais, 2002), three years (Knight & Cavusgil, 2004), and even five years after founding (Acedo & Jones, 2007) to define the concept. Early and precocious internationalization are partially overlapping concepts, and in this research early internationalization is defined to last up to three years after incorporation.

Psychic distance: "The sum of factors preventing the flow of information from and to the market" (Johanson & Vahlne, 1977).

1.4 LITERATURE REVIEW

In this chapter, earlier literature on internationalization, degree of internationalization, characteristics of international new ventures, and organizational change will be discussed shortly to create an overview of the literature review. This chapter aims to illustrate the existing literature on the given fields of research to give both the researcher and reader a clear vision of what has been written before and what should be studied more. The literature review is utilized to create the theoretical part of the master's thesis.

The resource-based view has been widely used to explain how firms can achieve superior performance compared to other firms in the same market, and it argues that performance results from acquiring and exploiting the unique resources of the firm (Wade and Hulland, 2004). Internationalization models and theories, on the other hand, explain how companies of different type typically acquire these resources. The Organizational learning theory is another theory that can provide help in understanding change of INV firms. The theory has been largely contributed by Argrys and Schön (1978). In their work, they developed the concepts of single-loop and double-loop learning, and they have later made several contributions on the field of organizational learning. Huber (1991) presented the four constructs of organizational learning (knowledge acquisition, information distribution, information interpretation, and organizational memory) and explained how learning can occur through these constructs.

In 1977, Johanson & Vahlne contributed with their model of MNE internationalization, called the Uppsala model or the stages model. This model explained how traditional MNE companies internationalize through gradual knowledge acquisition and commitment of resources to foreign markets. From the creation of the Uppsala Model, the business environments and the nature of companies have changed, and companies have become more as members of their local and international networks (Johanson & Mattsson, 1988). To supplement and challenge the ideas of Johanson and Vahlne (1977), various theory-creating studies have been made and new theories have emerged to explain internationalization. The appearance of networks in international business environment resulted into creation of different network approaches. These models take into consideration the effect of networks and partnerships in the internationalization process of companies. Johanson and Mattsson contributed in this era with their Network Approach in 1988, as the business environment had changed from the creation of the Uppsala Model and the model had faced quite a lot of criticism. Their Network Approach explicates the improvement of communication, and the increasing availability of knowledge and resources, which has enabled more companies to become international from their inception. Whereas the Uppsala Model assumes that knowledge can be acquired mainly through operations abroad (Johanson & Vahlne, 1977), the Network Approach now explains the importance of networks in acquiring necessary knowledge and resources needed to do business in foreign markets (Johanson & Mattsson, 1988).

Network approaches and INV firms have been later studied in a growing manner, as networks have been widely noted to be influential in the internationalization process. However, studies assessing directly INV firms' networks are still limited. Many of the studies focus on the relation of INV networks and foreign market entry. (Coviello, 2006) There, Coviello and Munro (1995, 1997) have made research, studying both positive and negative network impacts on the entry mode decisions. Holmlund and Kock (1998), Chetty and Blankenburg Holm (2000), and Chetty and Campbell-Hunt (2003) have all implemented a similar approach but the focus has been more on SMEs instead of INVs. Still much more research on INV networks is needed as noted by, for example, Arenius

(2002), Andersson and Wictor (2003), Sharma and Blomstermo (2003b) and Autio (2005). These researchers have recognized networks generating social capital for INVs, which is a resource enabling entrepreneurial firm mobilization. (Coviello, 2006)

As a continuum for the different network approaches, born global research took place in the internationalization literature. Oviatt and McDougall (1994) contributed in the research on born global companies, and their studies advanced the literature towards a theory of international new ventures (INV). The intention of their paper was to "describe the phenomenon and to present a framework explaining how International New Ventures fit within the theory of the Multinational Enterprise" (Oviatt & McDougall, 1994, 48). Also, Knight and Gavusgil (1996) studied born global firms and challenged the traditional internationalization theory. Oviatt's and McDougall's (1994) paper strives for explaining why certain types of companies manage to skip some of the basic steps of the Uppsala Model and are international from inception. These companies are known as international new ventures, which possess certain characteristics, skills, and knowledge that may enable relatively fast internationalization compared to traditional large companies.

Oviatt and McDougall (1994) found that some of the SMEs are actually international from their inception. They argued that changing economic, technological, and social conditions have created such conditions where markets link countries together more efficiently. Reduced transaction costs and better availability of knowledge have shortened the time of internationalization, and made it possible for companies to skip stages of knowledge acquisition and international commitment, presented in the Uppsala Model. Oviatt and McDougall (1994) argued that flexibility and quickness are critical factors for becoming a successful global start up. These factors, among others, enable new global ventures to externalize the acquisition of resources and collection of key intangible assets, such as special knowledge.

In the early 21st century, researchers' focus had broadened from traditional large multinational companies to include entrepreneurial firms as well, and accelerated internationalization was studied even in the smallest and newest companies (Oviatt & McDougall, 2000). Oviatt and McDougall (2000) combined two paths of research, entrepreneurship and international business. They explained the role of entrepreneurship in the internationalization process, and contributed with the international entrepreneurship theory (IET).

The international expansion of new ventures has later been studied a lot. Zahra et al. (2000) have studied the role of international diversity, mode of market entry, technological learning, and performance in the international expansion of new venture firms. Originally the genesis of international entrepreneurship was marked with McDougall's (1989) comparison of domestic and international new ventures. Later Oviatt & McDougall (2005) formulated the definition of international entrepreneurship based on the earlier definitions, and presented a model of how the speed of entrepreneurial internationalization is influenced by various factors.

Research on the field of international entrepreneurship has since become a largely studied phenomenon in the academia. The state of international entrepreneurship research was reviewed by Coviello et al. in 2011. Hånell et al. (2013) reviewed the international entrepreneurship research by reviewing empirical studies performed between 2003 and 2011. Nordman and Melén (2008) contributed on the field of international entrepreneurship research, and their paper explores how founders' and managers' levels of international knowledge and technological knowledge are related to born global companies' discovery and exploitation of foreign market opportunities. Nordman and Melén (2009) also made a longitudinal study to explore which internationalization modes born global companies use in their initial and continued internationalization. Turcan and Juho (2014) studied the corporate growth of international new ventures beyond start-up, and suggested that more research is needed in this field. Their paper can be seen among the first attempts to generate early theoretical constructs to guide international entrepreneurship research in the area of post-start-up phase of international new ventures.

As there are various types of international new ventures, which have followed different paths of internationalization, multiple studies have been made to recognize and categorize these companies into different internationalization pathways. Even though Johanson's and Vahlne's (1977), and Oviatt's and McDougall's (1994) works can be seen as providing certain types of internationalization pathways, research on the field of internationalization pathways or patterns has mostly begun in the 21st century, and most of the studies have been conducted in the very recent years. Furthermore, the studies are mostly focused on SMEs and family-owned businesses, and Northern Europe has been a pioneer on this field of research. Johanson and Vahlne (1977) recognized that the characteristics of gradual internationalization process, within the frame of economic and business factors, influence the pattern and pace of internationalization of firms. Johanson's and Vahlne's (1977) Uppsala Model can be seen as a one type of pathway for internationalization, which can be applied for large companies. Oviatt and McDougall (1994) presented their four-class categorization of international new ventures and more detailed categorizations have been made since.

There is still no unified group of pathways, as the definitions and categorizations vary based on the determinants and measures used to study and define the degree of internationalization. There are several stereotypical pathways of SME internationalization, which are defined through determinants, such as timing of entry, geographic range, and intensity of commitment to foreign markets (Kuivalainen et al., 2012). Pathways describe the level of internationalization which, however, does not necessarily steadily increase over time (Kuivalainen et al., 2012). There are multiple options for internationalization, such as retrenchment or de-internationalization (Benito & Welch, 1997), rapid internationalization after a long period of domestic focus (Bell et al., 2001), or internationalization that occurs in a long run as a long-term pathway of internationalization (Jones & Coviello, 2005).

According to Kuivalainen et al. (2012), the longitudinal development of internationalizing SMEs, as well as performance implications of internationalization pathways are under-researched. Furthermore, there are only a few studies that look beyond the internationalization and focus on what happens to internationalizing SMEs after that (Zahra & George, 2002). It is also ambiguous whether certain internationalization pathways play a role in determining long-term survival, success and growth (Kuivalainen et al., 2012).

The actual internal changes in INVs during internationalization have been studied earlier by Nummela (2004) and Nummela et al. (2006). Those are the only studies that are parallel to this master's thesis. In those studies, both Finnish and Irish companies' changes were discovered, and it was found out that changes in SME internationalization are more multidimensional than expected. Level of changes varies considerably and different changes are closely intertwined. (Nummela et al., 2006) Nummela (2004) also created a framework for studying changes in INVs during internationalization. This frameworks' functionality was also verified in Nummela et al. (2006).

1.5 RESEARCH METHODOLOGY

This research is conducted as a qualitative multiple case study, which includes both a theoretical and an empirical part. As the topic is under-researched, there is no unified understanding on which theories should be used to explain the phenomenon. This makes it challenging to determine a certain theory base that is used throughout the study. Thus, systematic combining is used in the process of conducting this research. The theory, framework, empirical world, and the cases will evolve during the process. This type of research method is referred as "an abductive approach" to case research. (Dubois & Gadde, 2002) The theoretical part of the research will be conducted by using carefully selected academic literature that addresses the main phenomena. As the understanding on the topic evolves during the process, suitable and supplementary theories will be applied to explain the empirical findings. The selected theories will be justified by explaining their importance carefully.

The empirical part of the research is done by using a qualitative research method. It is based on data gathered from seven companies' key decision makers. The data will be gathered using semi-structured interviews which are guided by the interviewer. All of the interviewees are founders of their companies, having deep understanding of the past evolution of the companies. Six of the interviewees are Chief Executive Officers and one is Technical Executive Officer. The case companies will be selected to match the definition of INV, and all of them need to have gone through the initial internationalization phase.

1.6 STRUCTURE OF THE THESIS

This study composes of five different parts being introduction, literature review, research methodology, research results and analysis, and conclusions and discussion. The structure of the paper is organized in a logical manner, which is easy to follow and construe. The first, introduction chapter, opens up the background of the research and justifies the topic selection, and discusses the aim and research questions of the thesis. A theoretical framework is created and explained to illustrate the phenomena, concepts, and context of the thesis. The research methodology is shortly discussed to create an understanding of the methods used to execute this research. The introduction chapter also includes important definitions and delimitations of the thesis, as well as an overview of the literature review.

The actual literature review, or the theoretical part, of the thesis combines carefully selected academic literature about the topic. It is begun by discussing organizational change literature in general, which is followed by discussion on meta theories that explain organizational change. Understanding these meta theories, being the Resource-based view and the Organizational learning theory, is important in order to perceive the background of the following models in the theoretical part. Organizational change is followed by discussion on internationalization models which are based on the earlier theories. External business environment is discussed as it is assumed to cause certain impacts and challenges for organization and internal change of companies. The theoretical part is ended by discussing measurement of the degree of internationalization, as well as the internal environment of INVs. Discussion on the internal environment will wrap up the earlier theories and explain their importance in understanding how INVs may change internally during initial internationalization.

The third part of the thesis discusses the research methodology in more detail, presenting the research questionnaire, sampling, and analysis of the data. The fourth part focuses on analyzing the data and revealing the empirical results of the qualitative study. Finally, the fifth part of the thesis includes conclusions and general discussion on the study. This chapter will also present the theoretical and managerial implications, evaluation of the reliability and validity of the study, and limitations and suggestions for the future research.

2. INTERNATIONALIZATION AND THEORIES OF ORGANIZATIONAL CHANGE

Organizational change is a widely studied phenomenon among the academia. Due to the complexity of the phenomenon, research addresses this complexity from numerous more or less complementary or contradictory perspectives. There is no all-encompassing perspective, but different views and theories share researchers into different schools of organizational change research. Theories themselves need to balance between scholarly quality and practical relevance. (Jacobs et al., 2013; Pettigrew et al., 2001)

Jacobs et al. (2013) conducted a field research in order to develop a theoretical framework of organizational change, integrating organizational behavior and strategic approaches of organizational change. Organizational change is often associated with consultants launching new change "products", as well as failure in the first place (Jacobs et al., 2013; Sorge & van Witteloostuijn, 2004). Failure in organizational change is widely driven by the large number of mergers and acquisitions, of which 70% fail in the post-integration phase and circa 30% fail before consummation (Dikova et al., 2010; Muehlfeld et al., 2012; Brakman et al., 2013) Most of the organizational change projects do not deal with mergers and acquisitions, which decreases the risk of failure. Still, some small-scope change projects are exposed to failure due to poor planning and execution. (Jacobs et al., 2013) In the change process, during INVs' internationalization, planning is important but considering the speed of internationalization in many cases, careful and comprehensive planning might be challenging.

There are three prevalent perspectives in organizational change research: micro perspective, meso perspective, and macro perspective. Micro perspective analyses the psychological aspects of organizational change. (Jacobs et al., 2013) According to Jacobs et al. (2013), micro perspective studies on organizational change cover for example attitudes to change (Vakola & Nikolaou, 2005), perceptions of change (Weber & Weber, 2001), and uncertainty strategies (DiFonzo & Bordia, 1998). Meso perspective studies issues related to the organizational context of organizational change (Jacobs et al., 2013). Meso perspective studies on organizational change cover for example research on group processes and social identities (van Leeuwen et al., 2003). Macro perspective looks at organizational change from the point of view of sociology's organizational ecology. It studies structural reproducibility and organizational inertia, the effects of change on organization's competitiveness, and mortality hazard of organizations (Jacobs et al., 2013). Focus of the macro perspective is on how these issues work out in populations of similar organizations, and there Hannan and Freeman (1984), Hannan et al. (2004), and Hannan and Baron (2002) have made important research.

Organizational change is related to fit and misfit, which are key drivers of organizational performance, as explained in the contingency literature of organization sciences (Lawrence & Lorsch, 1967; Parker & van Witteloostuijn, 2010). Miles and Snow (1994) define fit as "the alignment of an organization's internal features with that of its external environment, to enhance performance". INVs are in a special position, when regarded from the point of view of fit and misfit. These firms' internal environment is often changing rapidly in order to reduce misfit and gain growth, added to the fact that the global market (external environment) is highly competitive and constantly changing. This setting offers both opportunities and threats for INVs to utilize their internal strengths and overcome their weaknesses in a rapid and flexible way. The unified framework, created by Jacobs et al. (2013), is presented in figure 2 below.

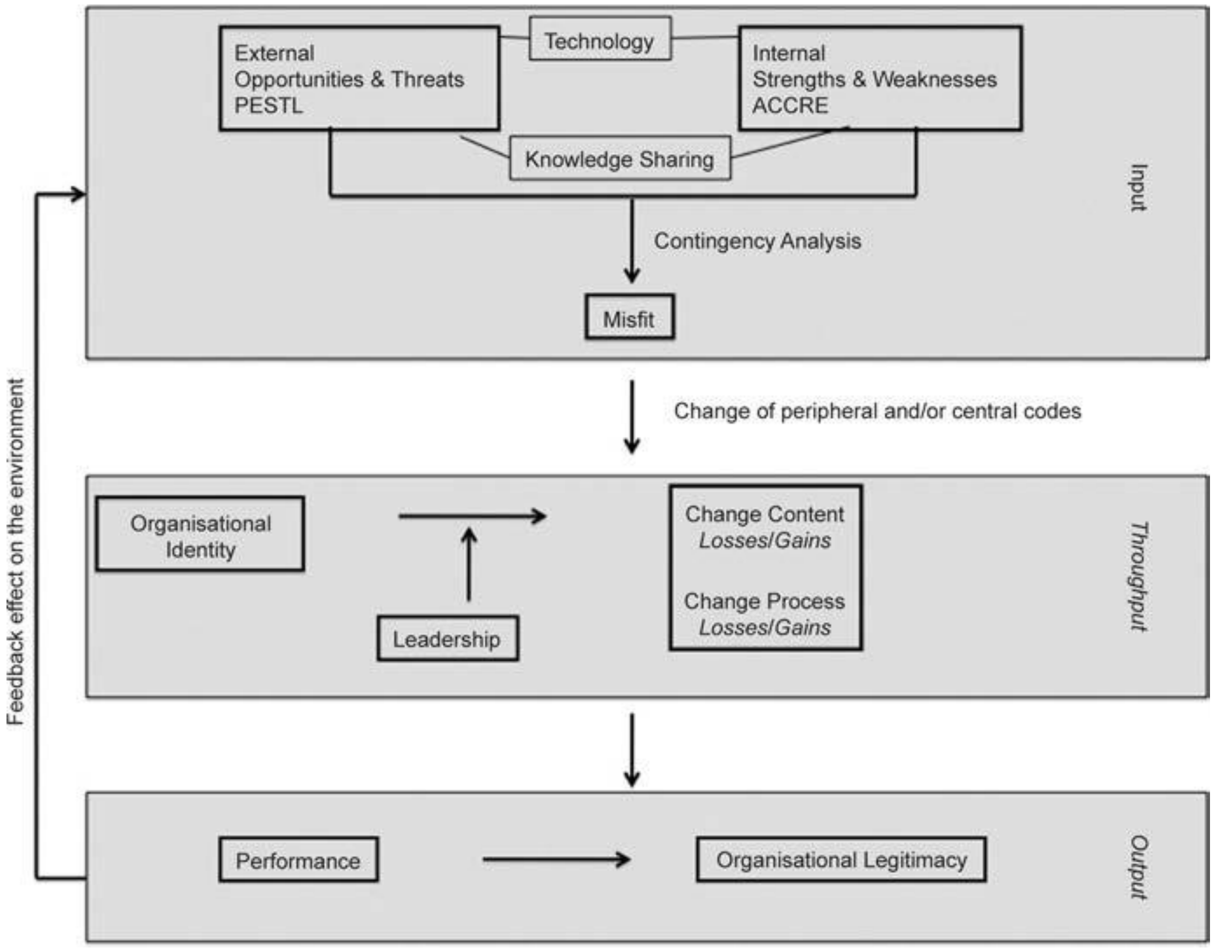


Figure 2. A unified framework of organizational change (Jacobs et al., 2013, 777)

Change of INVs during initial internationalization could be explained by various theories and approaches. However, an evaluation of the applicability of different theories is needed to create an integration of theories that explain the flexible and rapid changes with a limited availability of resources in INVs. No theory is all-encompassing explaining the phenomenon. In this paper, internal change of INVs is approached through the resource-based view (RBV) (Wernerfelt, 1984; Barney, 1991a) and organizational learning theory (Argyris & Schön, 1978; Huber, 1991). In order to explain internal change effectively, these two views are used to supplement each other, which is also supported by Smith et al. (1996). This enables approaching INVs through the resource-based view, but it also recognizes the impact of the dynamic environment and experience-based evolvement of INVs. According to Huber (1991), narrow conceptions on any phenomenon decrease the chances of encountering useful findings or ideas, which supports creation of a broader theoretical incorporation in this case.

2.1 THE RESOURCE-BASED VIEW AND ORGANIZATIONAL CHANGE

The RBV explains an issue of how firms can achieve superior performance compared to other firms in the same market, and argues that performance results from acquiring and exploiting the unique resources of the firm (Wade & Hulland, 2004). In this paper it is assumed that increased experience may generate growth in the resource base of a firm, which explains the early and rapid internationalization of INVs through networks. The RBV argues that sustained competitive advantage is generated from the unique bundle of resources at the core of the firm (Conner & Prahalad, 1996). The term “resources” is defined as “anything that can be thought of as a strength or a weakness” of the firm (Wernerfelt, 1984, p. 172). In more detail, firm’s sustainable competitive advantage originates from its valuable, rare, inimitable, and non-substitutable resources (Barney, 1991a, 1997; Penrose, 1966; Rumelt, 1984; Teece et al., 1997; Wernerfelt, 1984). The resources of INVs are often characterized with properties, such as intangible, embedded, and knowledge-based (Peng & York, 2001). In spite of the minimal experience and limited resources of INVs, these companies are able to create competitive edge from combination of sources and theories, such as R&D (intellectual property and patents; the resource-based view), membership in the network (external resources; network approach), flexible responsiveness to the environment (dynamic capabilities), and learning (the organizational learning theory) (Jaw et al., 2006). Once some of these factors changes, due to internal or external drivers, it logically causes changes in other areas as well.

According to Wernerfelt (1984), it is possible to estimate the minimum resource commitments necessary to enter a certain product market. And by analyzing firm’s resources, it is possible to find the optimal product-market activities. As explained earlier in the Network Approach and INV theory, INVs don’t necessarily have the resources needed to enter certain markets or commit certain activities. In order to meet the minimum requirements for certain activities or markets, an INV needs to lean on its networks to change its resource base. Resources that cannot be easily purchased, that require an extended learning process, or result from a particular corporate culture are often more likely to be unique and more difficult to imitate (Barney, 1991a).

The RBV rests on an assumption that competitive capability-producing and rent-earning resources controlled by firms are heterogeneous and relatively immobile (Barney, 1991b;

Peteraf, 1993). The immobility of resources, as well as inimitability and non-substitutability, is caused by a variety of isolation mechanisms (Rumelt, 1984). These mechanisms include co-specialization of assets (Teece, 1986), causal ambiguity (Lippman & Rumelt, 1982), unique historical conditions (Barney, 1991a), social complexity (Barney, 1991a; Dierickx & Cool, 1989), and tacit knowledge and skills (Polanyi, 1967; Reed & DeFillippi, 1990). Resources being totally immobile and static would make it difficult for INVs to acquire more resources and experience to enhance performance. As mentioned earlier, organizational learning theory may provide an answer to this dilemma. Organizational learning and the RBV both aim at creating and sustaining competitive advantage. It would be thus logical to identify organizational learning as a strategic resource of a firm, and include it as a part of the RBV. (Smith et al., 1996) In order to do that, we need to discuss limitations of the RBV, which make incorporation of organizational learning and the RBV challenging.

Firstly, the RBV is lacking ability to explain sustainable competitive advantage derived from interactions of multiple resources. However, successful INVs are often advanced in combining multiple resources and creating competitive edge from alternative sources. The RBV is too much focused on the strategic potential of individual resources. (Smith et al., 1996) This is why Smith et al. (1996) are agreed that the definition of resources, and in more detail, "resource bundles" (Barney, 1991a), needs clarification. Secondly, the RBV is built on a static understanding of building a competitive advantage, which delimits its usability. According to Smith et al. (1996), the RBV is focusing too much on the result of building competitive advantage, instead of seeing it as a process. Lack of time aspect has made the RBV defective, as it is not able to explain the impact of time-dependent resources, such as organizational learning (Smith et al., 1996). Thirdly, the RBV leans on a deficient definition of sustained competitive advantage, making it somewhat implausible. Sustained competitive advantage is now dependent on whether competitors duplicate the firm. (Smith et al., 1966) But how can it be proven that the firm is duplicated or not? The RBV should consider the time aspect of sustainable competitive advantage. Durability of sustained competitive advantage should be understood being dependent on the pace at which the underlying competitive resources, competitive capabilities, or core competencies depreciate or become obsolete, due to new technology and innovations (Wheelen & Hunger, 2010). In addition, the definition of sustained competitive advantage does not recognize the dynamic nature of processes that are related to organizational learning or continuous improvement (Smith et al., 1996). These limitations of the RBV are supplemented by the organizational learning theory in the following chapter.

2.2 THE ORGANIZATIONAL LEARNING THEORY AND ORGANIZATIONAL CHANGE

Organizational learning can be divided into four constructs: knowledge acquisition, information distribution, information interpretation, and organizational memory. Knowledge acquisition is the process of obtaining knowledge. Information distribution is the process of sharing knowledge from different sources, leading to new information or understanding. Information interpretation is the process giving distributed information one or more commonly understood interpretations. Organizational memory equals to the means of storing knowledge for future use. (Huber, 1991) Learning is defined as it follows: “An entity learns if, through its processing of information, the range of its potential behaviors is changed” (Huber 1991, 89). This means that changes that are consequences of learning do not necessarily have to be behavioral. Learning may also result in new insights and awareness that doesn’t cause behavioral changes. Thus, being consciously aware of the differences and alternatives, and choosing only one of the alternatives, can be seen as a crucial element of learning. (Huber, 1991) The chosen alternative doesn’t have to change behavior, but it rather changes the cognitive maps of understanding (Friedlander, 1983). It is assumed that “an organization learns if any of its units acquires knowledge that it recognizes as potentially useful to the organization”, and this learning doesn’t have to be experienced by every component of the organization (Huber, 1991, 89). Although, it is argued by Huber (1991) that organizational learning becomes more effective when more components of the organization obtain this knowledge and recognize it as potentially useful.

What is the impact of organizational learning on INVs and how can it explain internal changes during initial internationalization? As a firm constantly learns about its customers, markets, networks, itself, etc., it simultaneously gains more knowledge to guide commitment of resources to foreign and domestic markets, as suggested by the Uppsala Model later. This knowledge itself changes the resource base of the organization, and makes it more aware of the opportunities and threats. Using the knowledge in decision-making is then assumed to change some aspects of the firm's business causing changes in others, and so forth. Organizational resources and capabilities develop through learning, but they can also be acquired from outside the organization in order to accelerate the learning process. Thus, there are various alternative ways of learning. Huber (1991) suggests knowledge acquisition consisting of five sub processes (or ways of learning), being congenital learning, experiential learning, vicarious learning, grafting, and searching or noticing.

Organizations always have some knowledge at the moment of inception about their initial environment, and about the processes of carrying out the entrepreneur's intentions. This valuable knowledge is communicated to new members of the organization. For new organizations, both the institutionalized knowledge and the context specific knowledge are inherited knowledge. (Huber, 1991) During the interval between the organizations inception and incorporation its founders employ vicarious learning, grafting, or searching on behalf of the actual organization. Consequently, congenital knowledge is a combination of the knowledge inherited at organization's conception and the additional knowledge acquired before the birth of the organization. Congenital knowledge has a great influence on the future learning, as it determines what an organization searches for and experiences, and how it interprets what it encounters in the future. (Huber, 1991) Congenital knowledge is central for INVs, because it pretty much defines the resource and competence base of the organization at its incorporation. This is when continued learning and resource acquisition become essential in order to skip steps of the gradual models of internationalization.

Experimental learning occurs after the birth, when knowledge is acquired through direct experience. This learning may result from intentional and systematic efforts or unintentionally and unsystematically. (Huber, 1991) Experimental learning literature is varied, but Huber (1991) recognized five mechanisms of experimental learning: organizational experiments, organizational self-appraisal, experimenting organizations, unintentional or unsystematic learning, and experience-based learning curves. Organizational experiments refer to availability and analysis of feedback as a source of enhancing experimental learning. Intentional organizational learning can be facilitated by increasing the accuracy of feedback about cause-effect relationships, or by ensuring the collection and analysis of feedback. Organizational self-appraisal approach focuses on member interaction and participation as a critical part of learning. Here, improving the mental health and relationships of organizational members are important objectives of learning. According to Huber (1991), organizational self-appraisal can also include information gathering about "problems, concerns, and needed changes from organizational members, organizing this information, sharing it with the members and involving the members in choosing, planning, and implementing actions to correct problems identified" (Lewin, 1946; McNamara & Weeks, 1982; Argyris, 1983; Trist, 1983; Peters & Robinson, 1984).

Organizational experiments and organizational self-appraisal can be seen as directed toward enhancing adaptation, where maintaining organizational experiments is directed toward enhancing adaptability. Maintaining adaptability requires organizations to operate as experimenting or self-designing organizations. According to Huber (1991), this means that they should "maintain themselves in a state of frequent, nearly-continuous change in structures, processes, domains, goals, etc., even in the face of apparently optimal adaptation" (Nystrom et al., 1976; Hedberg et al., 1976; Starbuck, 1983). According to Hedberg et al. (1977), operating in this kind of a mode is effective and essential for survival in an environment, which is unpredictable and changing rapidly.

Unintentional or unsystematic learning occurs at any time in any place, as a by-product of other activities committed by the members of the organization. It is unorganized, unstructured, and unintentional, and apart from more systematic and organized intentional learning. (Baskett, 1993; Cahoon, 1995) Unintentional learning happens in many ways, such as through observation, repetition, social interaction, and problem solving. (Cahoon, 1995; Rogers, 1997) Experience-based learning curves refer to the positive effects of experience on performance. In manufacturing organizations, gained experience about producing a new product decreases their production costs and production time per unit. This can also be proven mathematically through use of experience curve or learning curve. (Huber, 1991)

Vicarious learning (acquiring second-hand experience) means searching information about what corporate competitors are doing and how they do it, which is associated with the term “corporate intelligence” (Fuld, 1988; Gilad & Gilad, 1988; Porter, 1980; Sammon et al., 1984). Vicarious learning is close to what is understood as benchmarking. Firms use various types of channels to acquire information about their competitors, such as consultants, trade shows, professional meetings, vendors and suppliers, publications, and networks of professionals. However, in highly competitive and fast-changing environments, mimicking is not efficient. (Huber, 1991) Thus, for INVs, vicarious learning may not be useful or efficient, but obviously it still appears even there. As explained in the RBV, sources of sustainable competitive advantage must be inimitable. For INVs operating in dynamic high-tech industries it might be easier to fulfill this requirement of sustained competitive advantage, considering that mimicking does not happen on a wide scale or it is not efficient.

In order to acquire new knowledge, not available in the organization earlier, firms acquire and graft new members who possess some valuable knowledge. Grafting can be done on a small-scale basis by acquiring individuals, or on a large-scale basis in case of an acquisition of another organization. Grafting is often a more rapid way of acquiring knowledge, compared to experience-based learning, and more complete than imitation.

Searching and noticing is the final process of information acquisition, and it is quite common among managers on a day-to-day basis. Searching occurs in three forms, being scanning, focused search, and performance monitoring. Scanning refers to wide-range sensing of the external environment. Organizations scan the environment in order to avoid a situation where the lack of fit between the organization and its environment becomes too great (Wilensky, 1967; Fahey et al., 1981). Scanning can occur as high vigilance, active scanning, routine scanning or just being alert for non-routine but relevant information. Focused search occurs when organization’s members or units actively search for opportunities and possibilities in a narrow segment of internal or external environment. Focused search is done when the current alternatives are not satisfying, or there is a need to resolve a problem or capitalize an opportunity. Performance monitoring is a method used for focused and wide-range sensing of organizational effectiveness or the requirements of stakeholders. Noticing refers to unintended acquisition of any information about external or internal environment, or performance. (Huber, 1991)

The knowledge, acquired through the processes explained above, is distributed in the organization and it defines the occurrence and breadth of organizational learning. Organizations develop new information and solutions to problems and challenges by piecing together information from all around the organization. However, organizations often have limited information systems and processes, which causes that organizations do not necessarily know where the knowledge is situated inside the organization. Here, an efficient and wide distribution of knowledge can enhance the operations, and result in a broader organizational learning. According to Huber (1991, 102), "The extent of shared interpretation of new information is affected by the uniformity of prior cognitive maps possessed by the organizational units, the uniformity of the framing of the information as it is communicated, the richness of the media used to convey information, the information load on the interpreting units, and the amount of unlearning that might be necessary before a new interpretation could be generated".

Organizational memory is the third construct of organizational learning. Organizational memory is argued to be poor in many organizations, due to the factors that contribute to inaccurate learning and incomplete recall (Kahneman et al., 1982; Nisbett & Ross, 1980; Starbuck & Milliken, 1988). Personnel turnover creates remarkable losses for the human components of organizational memory. Poor anticipation for future needs of information causes important information not to be stored, or it is stored in a difficultly retrievable manner. In addition, organizational members with needs of information have challenges finding the information possessed or stored by other members. These challenges and effectiveness of organizational memory are affected by member attrition, information distribution and organizational interpretation of information, the norms and methods for storing information, and the methods for locating and retrieving stored information. (Huber, 1991).

3. INTERNATIONALIZATION MODELS AND/OR THEORIES

There are multiple theories and models explaining internationalization of different types of organizations. In order to explain internal change during the internationalization process in INVs, three theories are chosen into closer examination. A constitutive and widely cited theory was created by Johansson and Vahlne (1977), and it is known as the Stages Model of Internationalization, or the Uppsala Model. Uppsala Model is a process model of internationalization, which does not directly explain internationalization of INVs, but focuses more on MNE internationalization. Nonetheless, it can be used to supplement the INV literature, as it explains firm's gradual knowledge acquisition about foreign markets and resource commitment into new markets. To supplement and challenge the ideas of Johanson and Vahlne (1977) various theory creating studies have been made and new theories have emerged. Network approaches (Hägg & Johanson 1982; Hammarkvist et al. 1982; Johanson & Mattsson 1985, 1986, 1988) explain the impact of business networks on the internationalization of the network members. Network approaches do not directly explain INVs' internationalization either. In this paper the Network Approach is used to supplement the INV literature by explaining firm's ability to build and maintain a loyal business network, which is essential for INVs in order to acquire resources and internationalize rapidly. International new venture theory (Oviatt & McDougall, 1994) strives for explaining why certain types of companies have managed to skip some stages of the traditional internationalization theories and become international from inception. These companies are known as international new ventures, which possess certain characteristics, skills, and knowledge that may enable relatively fast internationalization compared to the traditional MNEs.

In the following sections the chosen theories, explaining internationalization, will be discussed to illustrate the phenomenon of internationalization and its effects on internal change in INVs. Firstly, the Uppsala Model (Johanson & Vahlne, 1977) will be discussed to underlay the forthcoming theories. Secondly, network approaches of internationalization (Hägg & Johanson 1982; Hammarkvist et al. 1982; Johanson & Mattsson 1985, 1986, 1988) will be discussed to explain the impact of business networks on internationalization. Finally, the theory of international new ventures (Oviatt & McDougall, 1994) will be discussed as a revising theory that explains internationalization in the context of INVs, having supportive elements from the previous theories.

3.1 UPPSALA MODEL – THE STAGES MODEL OF INTERNATIONALIZATION

Theoretical base of the Uppsala Model (Johanson & Vahlne, 1977) is in the behavioral theory of the firm (Cyert & March, 1963; Aharoni, 1966) and theory of the growth of the firm (Penrose, 1966). Johanson & and Vahlne (1977) conducted their theory-creating study by doing empirical observations from their studies in international business at the University of Uppsala. The Uppsala Model explains the gradual internationalization process of organizations as a product of a series of incremental decisions. The process evolves as a firm gradually acquires, integrates and utilizes knowledge about foreign markets and operations, and simultaneously increases its commitment of resources to foreign markets. This interplay causes a causal process of gradual internationalization. (Johanson & Vahlne, 1977) Internalizing the acquired knowledge can be seen as an internal change in intangible resources and capabilities. Furthermore, this enables the firm to scale and gain scope advantages, through added resource commitment in foreign markets.

The model assumes that lack of knowledge about foreign markets and operations is an important obstacle to the development of international operations, and that this essential knowledge is possible to be acquired mainly through operations abroad (Johanson & Vahlne, 1977). This slows down the speed of internationalization, making it gradual. By market knowledge Johanson & Vahlne (1977) mean "information about markets, and operations in those markets, which is somehow stored and reasonably retrievable – in mind of individuals, in computer memories, and in written reports". This is similar to what we know as explicit knowledge. In addition, knowledge in the Uppsala Model is considered to be vested in the decision-making system, and the model does not pay regard to the individual decision-maker (Johanson & Vahlne, 1977).

Johanson's and Vahlne's (1977) observations indicated that Swedish firms often develop their international operations in small steps, instead of making large investments at single points in time. They perceived that companies normally follow cyclic stages in their internationalization, starting with sporadic export, later establishing a sales subsidiary, and ending up to foreign production through foreign direct investments (FDI). This kind of successive development was also perceptible in new countries, where the firms entered. In addition, the Uppsala Model suggests that companies start their export activities by entering first countries with low psychic distance. (Johanson & Vahlne 1977) This interlink between the time order of establishing international operations and the psychic distance has also been perceived in earlier studies by Hörnell et al. (1973), and Johanson and Wiedersheim-Paul (1974). The psychic distance can be defined as "the sum of factors preventing the flow of information from and to the market" (Johanson & Vahlne, 1977).

Johanson and Vahlne (1977) strived for explaining why internationalization of traditional companies follows the pattern described earlier. They suggest that it is caused by a process of incremental adjustments to changing conditions inside the firm and in its environment. These changes expose new problems and opportunities for the firm. As these discontinuities are unprecedented for the firm, it is lacking routines for the solution and each case is solved singly. What also makes problem solving more challenging is the lack and difficulty of acquiring knowledge about foreign markets and operations, which is argued by Johanson & Vahlne (1977) to be an important differentiator between international and domestic operations. In INVs the adjustments to changing conditions are more rapid, due to the network effect and use of modern communication, making them face new situations faster. This, in turn, increases the learning effect, creates new routines, and gives them the ability to solve problems and utilize opportunities even better. The process of learning and acquiring new knowledge, however, is is similar to the traditional one, but it's proceeding much faster.

Based on their studies, Johanson & Vahlne (1977) created, what they call a dynamic model, in which the same basic mechanism explains all steps in the internationalization. In the model the outcome of one decision constitutes the input of the next decision. The model makes a distinction between the state and change aspects of internationalization variables, which forms the main structure of the model. According to Johanson & Vahlne (1977) the present state of internationalization can be seen as one important factor explaining the course of following internationalization. The state aspects in the model are the resource commitment to foreign markets (market commitment), and knowledge about foreign markets and operations (market knowledge). The change aspects, in turn, are decisions to commit resources (commitment decisions), and the performance of current business activities (current activities). The outcome of Johanson's and Vahlne's (1977) work is the basic mechanism of internationalization illustrated in figure 3 below.

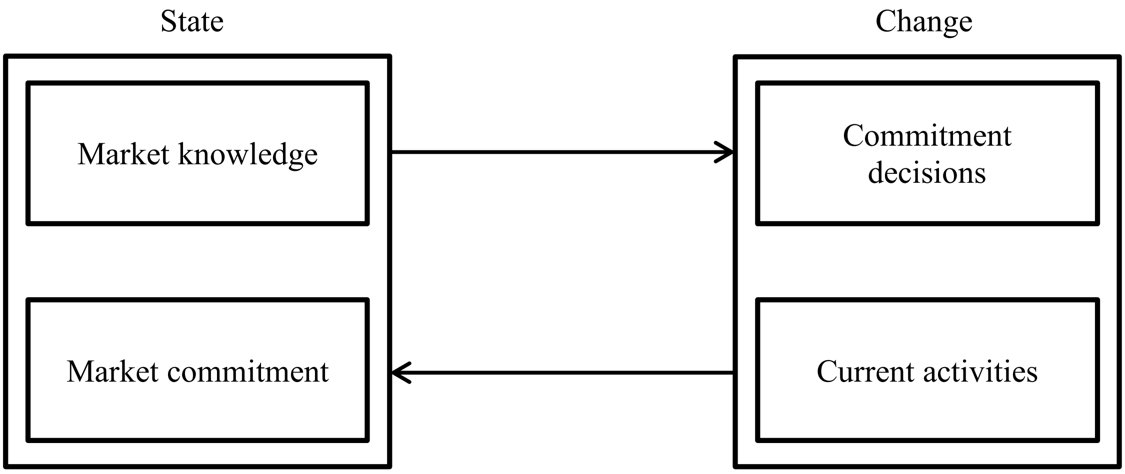


Figure 3. The Basic Mechanism of Internationalization - State and Change Aspects (Johanson & Vahlne, 1977)

According to Johanson & Vahlne (1977), there are some assumptions that are made in the model. Firstly, market knowledge and market commitment affect both commitment decisions and the way of performing activities. These, in turn, change knowledge and commitment (cf. Aharoni, 1966) creating a cycle. Secondly, the firm strives for increasing its long-term profit, which is assumed to be equivalent to growth (Williamson, 1966). Thirdly, the firm strives for keeping its risk-taking at a low level. And finally, the state of internationalization affects firm's perceived opportunities and risks, which influence commitment decisions and current activities, and vice versa.

Market commitment in the model comprises the amount of resources committed and the degree of commitment. The degree of commitment rises the more resources are integrated with other parts of the firm. (Johanson & Vahlne, 1977) Need for integrating resources may require internal changes in the organization of activities. The commitment of resources is higher the more specialized the resources committed to a certain market are. Resources in domestic country can be employed to development and production of products to other markets, which is also regarded as resource commitment. The amount of resources committed is the investment made to certain market, including marketing, organization, personnel, etc. (Johanson & Vahlne, 1977)

Commitment decisions are assumed to be initiated by the knowledge of opportunities and problems in a certain market. Evaluation of possible alternatives is based on knowledge about market environment and performance of various activities. Knowledge in turn is understood as knowledge about present and future demand and supply, competition, channels of distribution, payment conditions, transferability of money, which may vary from one country to another (Carlson, 1974). As explained later in the INV concept, development of communication technology and global market have made knowledge better available. Still decisions are made with limited knowledge. In dynamic environments, where INVs often operate, there is not always even time for searching perfect knowledge, but decisions have to be made more or less by intuition. According to Penrose (1966), objective knowledge can be taught and experiential knowledge can only be learned through personal experience. Experiential knowledge has emphasis on change in the services and activity of the human resources. Experience is something that cannot be transmitted, but it causes change in individuals and is tightly associated with them. (Penrose, 1966) Knowledge, as well as and increasing experience of individuals, being an important part of a firm's resources, may be a substantial object of internal change in INVs. This is due to the rapid development and growth of INVs, which forces its personnel to constantly cope under new circumstances.

The change aspects in Johanson's and Vahlne's (1977) model include current activities and decisions to commit resources to foreign operations. These aspects illustrate how a firm can change its commitment to foreign markets, and change its operations abroad, when essential knowledge has been acquired to do so. Current activities are seen as the prime source of experience, which increases as the firm repeats its current activities. The more the current activities are repeated the more effective are the consequences. On the other hand, the time lag between current activities and consequences may be long, and the longer the lag the higher the commitment. This illustrates the cyclic learning process and change in firm's resources during the internationalization process. Johanson and Vahlne (1977) explain the slowness of internationalization with an argument, that acquiring experienced workforce to boost current activities might be difficult or impossible. INV are, however, able to acquire alternative resources from their business network, which makes them able to skip some steps of the traditional stages models.

The second change aspect in the Uppsala Model is decisions to commit resources to foreign operations. These decisions are changes in commitment, which are dependent on what decision alternatives are known and how they are chosen. The decisions are made based on knowledge on perceived problems and opportunities on the market, which makes them dependent on experience. (Johanson & Vahlne, 1977) This illustrates how internationalization decisions (change) are driven by either internal drivers, such as increased knowledge and available resources, and/or external drivers, such as opportunities or threats in the business environment. Johanson and Vahlne (1977) distinguish between an economic effect and uncertainty effect of additional commitment. They argue that the first is associated with increases in the scale of operations on the markets, whereas the latter relates to market uncertainty and inability to estimate the present and future market and market-influencing factors. They say that market uncertainty is possible to decrease only through interaction and integration with the market environment.

Considering all the aspects in Johanson's and Vahlne's (1977) model, it makes sense that MNEs internationalize gradually as the cyclic process proceeds. However, times have changed from the establishment of their model and the development in communication technology and globalization of the markets have made rapid internationalization possible for smaller new ventures. The Uppsala Model has been criticized by many researchers, even though it has been generally accepted as a valid description in the research community (Johanson & Mattsson, 1988). According to Reid (1983), the Uppsala Model is to deterministic and general, and it can be explained by heterogeneous resource patterns and market opportunities. Therefore, firms will use various modes of international transfers. According to Reid (1983) a transaction cost approach is superior to the experiential learning model. According to Hedlund and Kverneland (1984) the establishment and growth strategies on foreign markets are changing towards more direct and rapid modes, compared to those proposed by theories of gradual and slow internationalization processes.

As a response to the wide criticism faced by the Uppsala Model, Johanson and Vahlne (2009) revised their model to meet today's business environment. They admitted that today the business environment is viewed as a network of relationships, rather than a neoclassical market with many independent suppliers and customers. They concluded that being outside of the networks is the root of uncertainty, rather than psychic distance. In their revised model, the state aspects were updated to include opportunities and network position, and the change mechanisms were shaped to include the existence of networks as knowledge today is developed in relationship. (Johanson & Vahlne, 2009) The revised model is presented in figure 4. Now firms are seen to acquire knowledge and recognize opportunities from the networks they are in. This leads to decisions to increase commitment in relationships, where learning, creating, and trust-building deepen the relationships and improve the firm's position in the network. The revised Uppsala Model can also be considered as a network-based model, as it now includes the impact of business network on internationalization (Hosseini & Dadfar, 2012).

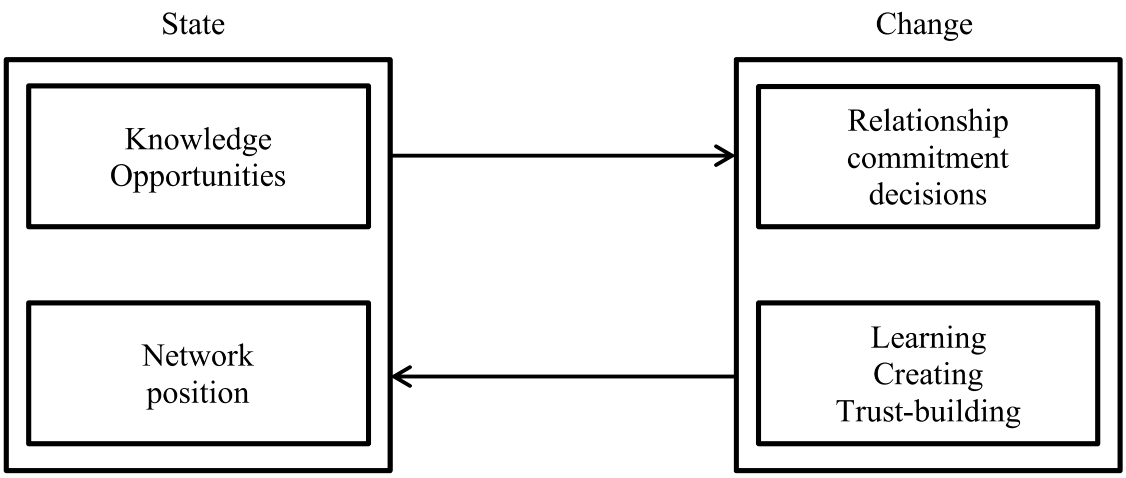


Figure 4. The business network internationalization process model (the 2009 version) (Johanson & Vahlne, 2009)

3.2 NETWORK APPROACHES

There are various different models and theories explaining the impact of business networks on internationalization. There is variation between the theories applied in American schools and European schools. In America, theories such as Relationship Approach, Social Network Analysis, and Network Mapping have gained attention. Whereas in Europe, theories such as Industrial Marketing and Purchasing Group (IMP), Interaction Approach, ARA-Model, Network Embeddedness, Revised Uppsala Model, and Network-based Internationalization Approach are more popular. (Hosseini & Dadfar, 2012)

In this study, the Network-based Internationalization Approach (or The Network Approach) is chosen to be examined closer, as it is widely used in Europe and it can be used to explain INVs resource acquisition and internationalization in a suitable manner. The Network Approach can be used to explain change through the degree of internationalization. It illustrates how the environment (network) can either push a firm to internationalize or restrict is possibilities for international activities and internationalization. The degree of internationalization of the firm and its network can also be seen as drivers for change, as they can initiate need for change in the firm. Furthermore, it is also possible that changes initiate internationalization, when new resources and organizational capabilities become available through the network. An example of an international business networks is illustrated below in figure 5.

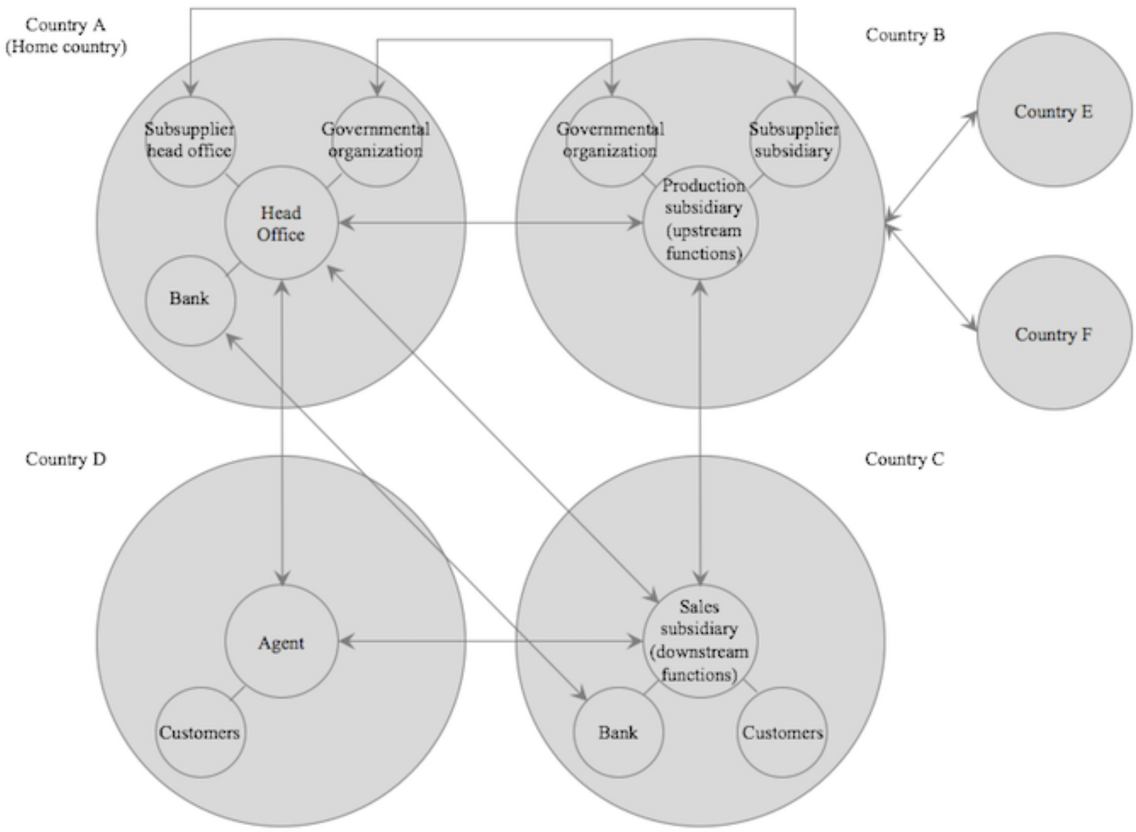


Figure 5. An example of an international network (Hollensen, 2007, 71)

The Network Approach has been developed by a group of Swedish researchers, named Hägg and Johanson (1982), Hammarkvist et al. (1982), and Johanson and Mattsson (1985, 1986). The studies of all researchers have been put together by Johanson and Mattsson (1988) in their work "Internationalization in Industrial Systems: A Network Approach". The Network Approach explains internationalization by considering the business environment as a business network and market (Hosseini & Dadfar, 2012). Johanson & Mattsson (1988) argue that interdependencies between firms and within industries are of increasing importance. And the industrial system, composed of firms engaged in production, distribution and use of goods and services, is seen as a network of relationships between firms. Firms inside a network have division of labor, meaning that they are dependent on each others, and therefore their activities need to be coordinated. Networks of companies actually predict their international or domestic activities (Johanson & Mattsson, 1988).

Coordination of networks occurs through interaction between firms in the network, not through traditional hierarchies or the market system. To have access to external resources and enable exchange of goods and/or services, firms must establish exchange relationships with one another, which may feed internal changes in the firm. Market forces have impact on the selection of partners inside networks. Partner selection and establishment of relationships is a laborious process of adjustment and explicit coordination through joint planning or power exercised by one party over the other. In the network, each firm has direct relationships with customers, distributors, suppliers, and even with competitors. In addition, firms also have indirect relations via those firms with suppliers' suppliers, customers' customers, etc. These direct and indirect relations, on the other hand, are sources of vital resources for INVs, and essential in that sense.

Most exchanges take place in existing relationships, which are constantly changing through activities in connection with transactions made within the relationship. Thus, efforts are made to develop, maintain, change, and disrupt the relationships. Different bonds develop in relationships between the parties, which secure the relationships. Johanson and Mattsson (1988) distinguish between technical, planning, knowledge, social, economic, and legal bonds. These bonds can express "product and process adjustments, logistical coordination, knowledge about the counterpart, personal confidence and liking, special credit agreements, and long-term contracts” (Johanson & Mattsson, 1988, 292).

Internationalization through networks means that the firm establishes and develops positions in relation to counterparts in foreign networks. These can be developed through international extension, penetration, or international integration.

1) International extension; establishment of positions in relation to counterparts in national nets that are new to the firm.
2) Penetration; development of positions and increasing resource commitment in those nets abroad in which the firm already has positions.
3) International integration; increasing coordination between positions in different national nets. (Johansson & Mattsson, 1988)

The position of a firm in its network is the most important driver of internationalization. This position is defined based on two elements, being the degree of internationalization of the firm and the degree of internationalization of the network. The firm’s degree of internationalization informs about the number, importance and level of integration of the positions achieved in different national nets. In the network model, internationalization will direct attention analytically to the investments in internal assets and market assets used for exchange activities. The firm’s positions within the nets, before internationalization process, refers to its market assets which, on the other hand, may have influence on the process itself. The degree of internationalization of the market (network) implies the number and level of relationships between the different national sections of the global production net. Internationalization increases the number and strength of the relationships between different parts of the global production network. (Johansson & Mattsson, 1988) Based on the degree of internationalization of the firm and the market, Johansson and Mattsson (1988) identified four situations of internationalization, which are presented in table 2.

Table 2. The network-based internationalization model (Johanson & Mattsson, 1988, 298)

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">Degree of internationalization of the market (the production net)</td></tr>
<tr><td>Low</td><td>High</td></tr>
<tr><td rowspan="2">Degree of internationalization of the firm</td><td>Low</td><td>The Early Starter</td><td>The Late Starter</td></tr>
<tr><td>High</td><td>The Lonely International</td><td>The International Among Others</td></tr>
</table>

The Early Starter is in a situation, where the degree of internationalization of the firm itself and its networks are both low. This means that the firm, as well as its suppliers, competitors, and other cooperative companies, have a few international relationships. The firm thus doesn't have access to information about the global market. (Johansson & Mattsson, 1988) This situation is challenging if the firm is willing to internationalize. Thus, some major changes are needed both internally and in the network of the firm, in order to overcome the boundaries of internationalization.

The Lonely International's degree of internationalization is high but the market, in which it is operating, is not highly internationalized. In this situation its suppliers, competitors, and other cooperative companies don't have access to the international market. This prevents them helping the firm to enter the international market. However, the firm has own experience and knowledge about the international market, which it can use in order to internationalize further. (Johansson & Mattsson, 1988) The firm thus has better network position compared to its competitors, due to its access to international markets. In this situation the firm is lacking internationalization support from its network, but it is able to provide some international benefits for the cooperative companies.

The Late Starter is in a situation, where the degree of internationalization of the firm is low but the market is highly internationalized. Its environment is internationalized, meaning that its suppliers, competitors, and other cooperative companies have widespread international relationships. The company itself is lacking experience and knowledge about foreign activities. The firm doesn't have any direct relationships with foreign partners, but all its relationships are indirect via suppliers, competitors, and cooperators. (Johansson & Mattsson, 1988) The Late Starters are in a difficult situation, as their network position is weaker compared to competitors, and building a tight network may be challenging as most of the positions in the network are already taken by others. In order for the firm to internationalize, this situation requires internal changes from the firm to be able to change the structure of the network and gain better position in it.

The International Among Others is in a shaped situation where both the firm itself and its environment are highly internationalized. This means that both the firm and its network partners have high level of experience and knowledge about foreign activities, and the network relationships are tight. This, on the other hand, provides more external resources into use of the companies, and enables them to enter third countries by using cooperative internationalization strategies. (Johansson & Mattsson, 1988)

3.3 THEORY OF INTERNATIONAL NEW VENTURES

As the Uppsala Model and other studies of the multinational enterprise (MNE) had mostly focused on large and mature organizations, Oviatt and McDougall (1994) challenged the earlier literature and moved the discussion towards a theory that takes into consideration the special nature of INVs. Even though their paper has been widely cited as the INV theory, it is debatable whether it really is a theory. Nonetheless, this thesis will discuss it as a theory, in order to be consistent with the literature.

Oviatt and McDougall (1994) argued that young and international organizations have actually existed for centuries, but have been ignored by the academia due to the significant economic power and size of the MNEs. Examples of the very first INVs are organizations such as the East India Company in England on the 17th century, numerous cotton traders in America on the 19th century, and the Ford Motor Company in America on the 20th century.

Since the late 1980s there was an increasing interest towards a growing phenomenon of new ventures that were international form inception as well as entrepreneurship. (Oviatt & McDougall, 1994) Entrepreneurship has historically been associated with for-profit businesses, but recently something we call “social entrepreneurs” are emerging in non-profit organizations and governments (Hisrich et al., 1997). However, this research only focuses on for-profit businesses, in order to study similar kinds of companies to gain validity. Oviatt and McDougall (1994) argued that the existing literature could not be applied in the case of INVs. In the environmental context, the reasons of the early adoption of born globals are explained through two trends. Firstly, globalization of markets, and secondly, technological advances in information and communications technologies. The globalization of homogenous products has significantly decreased the entry barriers to foreign markets. Major improvements in communication technology and transportation have made international business opportunities accessible for not only MNEs but also for INVs. (Knight & Cavusgil, 2004; Oviatt & McDougall, 1994) Scale advantages in R&D, production, marketing, etc., as well as ability to efficiently manage international communication and transportation, and exchange production and market information among countries, have been a substantial sources of competitive advantage for MNEs (Stopford & Wells, 1972). Also, their market power in oligopolistic industries has been seen as a source of MNE advantage (Dunning, 1981; Glickman & Woodward, 1989; Porter, 1990).

INVs have today a quite wide access to resources due to their networks, strategic alliances, and management's experience and relationships with international business people. To have access to various international resources, INVs don't necessarily have to own them, and no foreign direct investments (FDI) are needed. INVs definition is rather concerned with value added, not assets owned. (Oviatt & McDougall, 1944) INVs form because internationally experienced and alert entrepreneurs are able to link resources together from multiple different countries, in order to supply those markets that are international in the first place. Other reasons are their international vision from inception, innovative product and/or service marketed through a strong network, and effectively managed organization focused on the growth of its international sales. (Oviatt & McDougall, 1994) What differentiates INVs from others is their international foundation, which is indicated by the remarkable amount of resources committed to more than one country, including e.g. materials, human resources, financing, and time. Instead of the traditional path of growing gradually from domestic companies into MNEs, INVs possess a proactive international strategy from inception. (Oviatt & McDougall, 1994)

Earlier research on MNEs had mostly ignored the age of becoming international and focused mostly on the size of the organizations. The size has been regarded as a requirement for becoming multinational. However, more important from the INVs point of view is the age. If size would be requirement for internationalization, INVs would hardly originate at all, because they are often very small companies. To understand the existence of INVs, one should recognize that large size may be both a cause and an effect of multinational competitive advantage. (Oviatt & McDougall, 1994) According to Casson (1987) and Caves (1982), the size can be explained rather as a consequence, not a cause, of more elemental sources of competitive advantage. This is supported by Barney (1991a), arguing that resources must be valuable, rare, imperfectly imitable, and non-substitutable, in order to achieve sustainable competitive advantage. Can the size of an organization be regarded following the rules of this VRIN framework?

Oviatt's & McDougall's (1994) aspiration was to define and describe the phenomenon of INVs, and develop a framework that would explain how INVs fit within the theory of MNE. This would open up discussion and help further research on this field. They explained the phenomenon of INVs by integrating international business, entrepreneurship, and strategic management theory. They developed a framework that describes four necessary and sufficient elements for the existence of INVs, which progressively distinguish subsets of transactions, and are enumerated within the arrows in figure 6. Firstly, organizational formation through international new ventures distinguishes transactions that take place in organizations from those that are governed by markets. Secondly, strong reliance on alternative governance structures to access resources separates the subset of transactions associated with new ventures from those in established firms. Thirdly, establishment of foreign location advantages distinguishes the subset of transactions constituting international new ventures from those that constitute domestic new ventures. Finally, control over unique resources differentiates the subset of sustainable international new ventures from those likely to be short-lived. (Oviatt & McDougall, 1994)

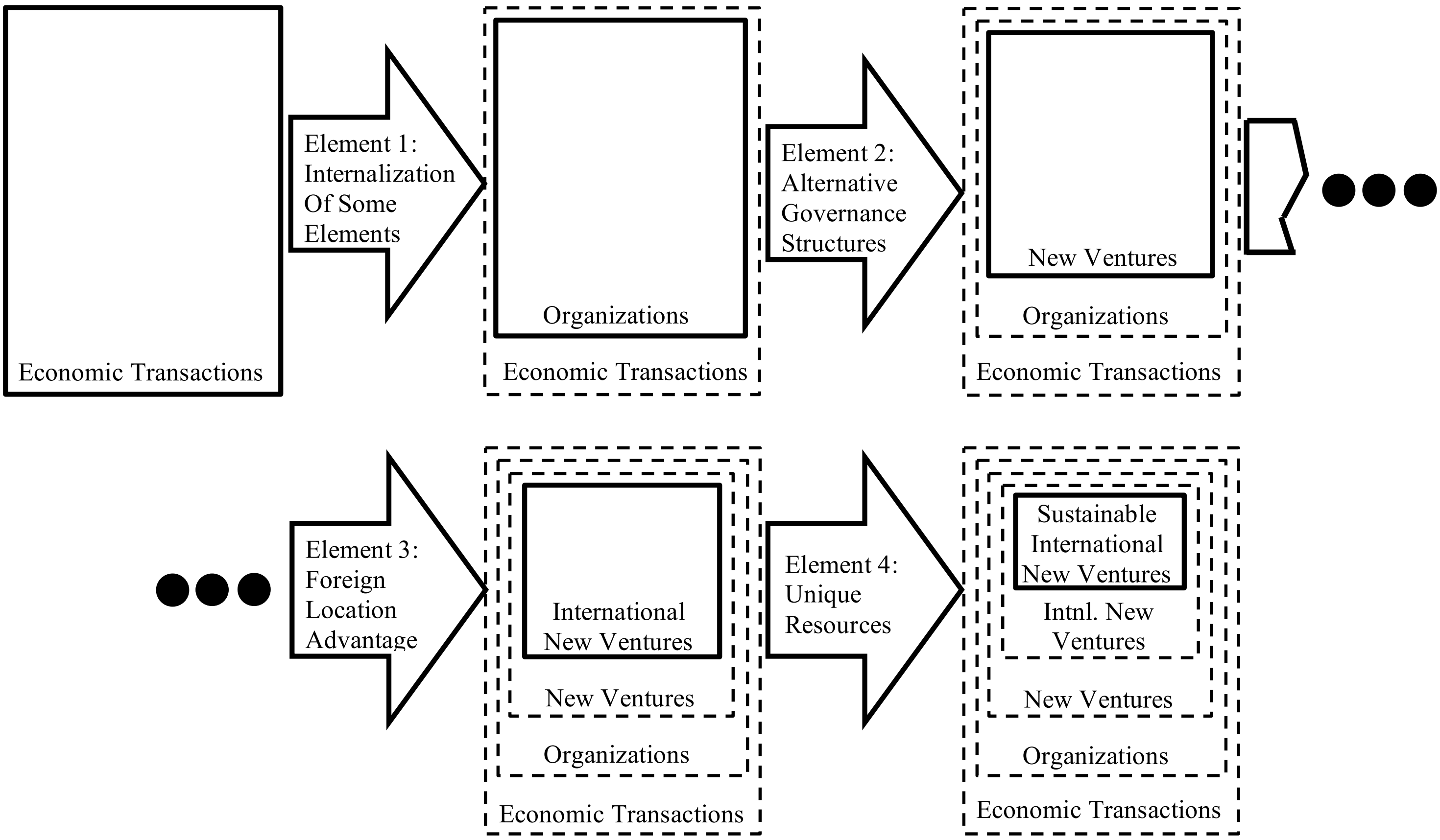


Figure 6. Necessary and Sufficient Elements for Sustainable International New Ventures (Oviatt & McDougall, 1994, 54)

The internalization can be respectively seen as the most basic element of the model, and it is an important part of traditional MNE theory. Internalization of transactions enables organizations to form when market imperfection appears in the market (Coase, 1937; Williamson, 1985). When the transaction costs of constructing and executing a contract and monitoring the performance of the contracting parties are at their lowest in an organization, and an organization has a hierarchical authority (chosen governance mechanism), the transaction can be seen as internalized (Buckely & Casson, 1976; Dunning 1981, 1988). This is what ultimately differentiates organizations from basic economic transactions in the market.

Alternative governance structures are what distinguish new ventures from other organizations. New ventures usually lack resources, which makes it challenging to control multiple assets through ownership. As explained earlier, new ventures thus appear to internalize and own fewer resources essential to their survival than do mature organizations. Here the earlier experience and networks of the entrepreneur are in an important role, as alternative modes of controlling vital assets are needed (Vesper, 1990). According to Williamson (1991) hybrid structures, such as licensing and franchising, where partners share complementary assets to their mutual benefit, are useful in order to enter markets more effectively. Even as a more resource-conserving alternative to internalization or hybrid structures, new ventures can use their networks to form alliances and cooperation, in order to acquire essential resources (Aldrich & Zimmer, 1986; Larson, 1992). Alternative structures are riskier and exposed to asset expropriation, but almost inevitable for new ventures, in order to have access to essential resources and assets (Oviatt & McDougall, 1994).

Foreign location advantage is what distinguishes international from domestic organizations. According to Dunning (1988) foreign locations are utilized when firms see an advantage in moving their resources abroad to be combined with a less mobile resource or opportunity. Conducting business abroad has, however, some disadvantages which INVs must overcome by use of alternative resources. These disadvantages (such as governmental trade barriers, regulations, language, or foreign business practices) have been overcame by MNEs with a use of scale advantages, which is usually not possible for INVs. (Oviatt & McDougall, 1994)

According to Buckley and Casson (1976), private knowledge is the most obvious alternative to overcome these obstacles, due to its mobility once it is produced. Valuable knowledge can be duplicated and moved with literally no cost by the use of modern technology, which has improved significantly from the time of Oviatt's and McDougall's (1994) study. In order to overcome obstacles, caused by the foreign location, valuable knowledge can be combined with less mobile resources in multiple countries, and it may create differentiation or cost advantages for MNEs and INVs (Oviatt & McDougall, 1994). The scalability of such knowledge explains why knowledge-intensive industries have been globalizing at such a rapid speed, why many of today's start-ups and INVs have business ideas that make use of the rapidly revolutionizing information technology, and why these INVs internationalize instantly rather than evolutionary (Reich, 1991; Oviatt &

McDougall, 1994). By introducing new innovations, firm signals its competitors about the existence of special knowledge, and its competitors will try to produce equifinal alternative knowledge. This race increases the efficiency of international markets and speeds the whole competitive process. (Oviatt & McDougall, 1994)

The fourth element, unique resources, is the only element that enables conditions for sustainable competitive advantage. Applying Barney's (1991a) VRIN framework, sustainable competitive advantage for any firm requires its resources to be valuable, rare, inimitable and non-substitutable. Knowledge being a public good to some degree, its mobility and scalability may threaten knowledge-intensive firm's opportunity to earn with the knowledge, as knowledge may not remain its uniqueness in the long run. Mobility and scalability of knowledge is thus simultaneously a beneficial and troublesome factor, which makes knowledge a challenging property. Private knowledge must be guarded and its use must be limited from outsiders in many countries for it to have commercial value. The use of such knowledge can be limited by four conditions; property rights, imperfect imitability, licensing, and use of network governance structures. (Oviatt & McDougall, 1994)

Internalization of transactions, organizing alternative governance structures, achieving foreign location advantages, and acquiring unique resources are elements which evidently illustrate what differentiates the levels of organizations in the framework. The framework can be seen to depict development in the organization, which is needed in the process of moving on towards being a sustainable INV. The development is possible by utilizing firm's existing network to acquire resources, but various changes are needed inside the organization and in the network relations with other organizations.

4. EXTERNAL CONTINGENCIES FOR CHANGE

Zucchella et al. (2007) reviewed the global environment and drivers of early internationalization processes, summarizing the key findings in their paper. The business environment has globalized rapidly during the last decades, which has drastically decreased the transportation and communication costs (Holstein, 1992). Knowledge is today better accessible, and knowledge creation and exploitation opportunities have enhanced (Czinkota & Ronkainen, 1995; Dunning, 2000) The role of information and communication technology (ICT) has become more evident, as the technological development has created new solutions and enabled more efficient ways of communication (Kobrin, 1991; de la Torre & Moxon, 2001; Dunning & Wymbs, 2001; Nayyar & Bantel, 1994). Inter-organizational knowledge sharing has become easier among firms and subsidiaries (Kogut & Zander, 1993; Rasmussen et al., 1999; Anand & Khanna, 2000). The development of the global environment has created enhanced opportunities for value creation and management of international value chains (Brandenburger & Nalebuff, 1998; de la Torre & Moxon, 2001). All these together have further enhanced the speed of growth and value creation processes in firms of all size (Navyyar & Bantel, 1994; Eisenhardt, 1989; Zaheer & Manrakhan, 2001).

Development of global environment has changed the position of firms, moving them from industries to spaces where number of BG niches exist or can be created by entrepreneurs (Hamel & Prahalad, 1994). Knowledge-intensive industries and high-technology industries now appear as a natural arena of BG behavior (Lindquist, 1991; Preece et al., 1998). In both mature and innovative businesses, firms have adapted a new and growing orientation towards niches (McKinsey, 1993; Malekzadeh & Nahavandi, 1985; Zucchella, 2001; Madsen & Servais, 1997). As explained earlier in network approaches, the role of local networking has become evident (Johannisson, 1994; Johansson & Mattsson, 1988; Lindmark, 1994). This has further created possibilities for co-location effects and local clusters, which drive fast international growth of firms (Solvell & Zander, 1995; Dunning, 2000; Markusen, 1996; Porter, 1990, 1998; Brown & Bell, 2001; Enright 1998; Servais & Rasmussen, 1999), and industrial districts now serve as a natural scene for early international orientation (Storper, 1992; Sopas, 2001; Saxenian, 1994; Leamer & Storper, 2001; Maccarini et al., 2003).

Organizations operate in a local environment and are affected by institutional development. Local environment includes specific economic, social and cultural contexts (House et al., 2004; Moattar Husseini & O'Brien, 2004), and organizational changes are connected with institutional development (Alas & Vadi, 2006). Transformational change is seen as a response to the external environment, and it has direct impact on a firm's mission, strategy, leadership and culture. Transitional change, on the other hand, relates to psychological and organizational variables, which predict and control the motivational and performance consequences of the organizational climate. (Burke & Litwin, 1992) According to Alas (2006), transitional change may require a significant amount of unlearning.

The intent of a firm's strategy and management is to maintain a dynamic fit between the firm's offering and and the environment's demand (Learned et al., 1965; Miles & Snow, 1978). To be able to achieve this fit requires that the firm is able to change its processes. In order to change, the firm has to utilize its capabilities and increase its opportunities to survive (Helfat et al., 2007). These capabilities are considered to be dynamic by many researchers. Even though learning has an impact on firm's capabilities, which can develop over time, I rather talk about "capabilities" instead of the widely criticized term of "dynamic capabilities". A suitable term that could be used to illustrate the learning process, where capabilities develop, would be learning capabilities.

According to Bell and Young (1998), the patterns of internationalization are influenced by firm-specific factors, industry, and other external environmental variables. Understanding the drivers of internal change is important in order to explain the concept of internal change as a whole. Internal changes can be considered to be either proactive or reactive, and to be caused by either internal or external drivers, as argued by Bell and Young (1998). In this study the focus is on Finnish SMEs that operate in dynamic high-technology industries. Thus, it can be expected that the industry and its dynamic nature have an effect on the business of INVs operating in this industry. Dynamic industry is considered to be characterized by constant change, activity, or progress (Oxford Dictionaries, 2015). A firm in this kind of environment has to be able to change and adapt, being flexible in use of its resources.

As explained when defining high-technology, the concept is complex and no single unified definition is available. However, based on the existing knowledge high-technology industry was defined as it follows: high-technology industry is about when an average complexity of products and processes is high, and product development rate is high. Combining this definition with the dynamic nature of the industry, we get an adequate image of the environment in which the INVs in this study are operating. Consequently, dynamic high-technology industry can be defined as it follows: An industry where the average complexity of products and processes is high, and product development rate is high, and where companies are characterized by constant change, activity, or progress to meet the demand of the rapidly changing environment.

In order to study the impact of such a dynamic industry on internationalization and internal change of INVs, resource-based view and learning theory will be utilized later in this study. Learning is a dynamic concept, and it can be used to emphasize the continually changing nature of organizations (Dogson, 1993, 376), as well as “the capacity or processes within an organization to maintain and improve its performance based on experience” (Nevis et al., 1995, 73).

5. EXTERNAL PERSPECTIVE ON CHANGE AND INTERNATIONALIZATION

This chapter discusses the external business aspect perspective on internationalization and organizational change. Here we are trying to understand, what does internationalization and changes during internationalization look from outside of the firm, and how they can be measured. It is done by explaining what kind of external measures can be used to define the degree of internationalization of the firm, and how does understanding on DOI help in studying organizational change during internationalization. Furthermore, understanding the measures for the degree of internationalization is important when defining different internationalization pathways and categorizing firms.

Johanson and Vahlne (1977) recognized that the characteristics of gradual internationalization process, within the frame of economic and business factors, influence the pattern and pace of internationalization of firms. The result of their work can be seen as one of the earliest pathways applicable for traditional MNEs. The origin of literature on internationalization pathways lies on stage or process models, which characterize internationalization as a gradual and linear process, as explained earlier. Oviatt and McDougall (1994) categorized international new ventures into four types of organizations and their work, being one of the first to focus on INVs, gained a lot of attention. There has recently been a growing interest towards different pathways/paths of INVs or BGs. Today, after more than two decades of internationalization research of SMEs and new ventures, there are multiple stereotypical patterns of SME internationalization, which use determinants, such as timing of entry, geographic range, and intensity of commitment to foreign markets (Kuivalainen et al., 2012). These determinants can be seen as external, because they express how the firm has developed during internationalization, and they are visible outwards. The opposite would mean measuring the actual changes and development inside the firm, and the internal perspective will be discussed later.

According to Kuivalainen et al. (2012), internationalization is more complex than a simple process of market selection. They argue that the level of internationalization does not necessarily steadily increase as the time passes. There are various other paths, such as retrench or de-internationalization (Benito & Welch, 1997), rapid internationalization after a long period of domestic focus (Bell et al., 2001), or internationalization that emerges as a long-term pathway of internationalization (Jones & Coviello, 2005). Kuivalainen et al. (2012) argue that the longitudinal development of internationalizing SMEs, as well as the performance implications of internationalization pathways, are both under-researched. Only few contradictory empirical results can be found whether certain pathways happen to play a role in determining long-term survival, success or growth internationalizing firms (Kuivalainen et al., 2012).

According to Kuivalainen et al. (2012), it is important to distinguish between a pattern and a path/pathway. An internationalizing SME may go through a number of behavioral patterns, which form part of a distinct internationalization path/pathway (Kuivalainen & Saarenketo, 2012; Jones & Coviello, 2005). This illustrates that the concept of internationalization path/pathway is related to "how" question about the internationalization process, and it consists of various phases of behavioral patterns. The phases are not, however, sequential as in the Uppsala Model, but there can be large variety in patterns and development among SMEs. (Kuivalainen et al., 2012)

5.1 INTERNATIONALIZATION AS A PROCESS

According to Gabrielsson et al. (2008), BGs internationalization progresses through three phases. First phase is the introduction and initial launch phase. Second phase comprises growth and resource accumulation. Third phase is the break-out phase, which actually distinguishes INVs or BGs from a conventional slow-growing international entrepreneurial SME. Internationalization of a firm can be seen as a process, no matter if it is MNE or INV. However, only a few studies have truly successfully applied a process approach during decades of research (Welch & Paavilainen-Mäntymäki, 2013). The majority of INV literature identifies INV as "a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (Oviatt & McDougall 1994, 49). After the first influential articles on INVs (Oviatt & McDougall, 1994; Knight & Cavusgil, 1996), various questions have been raised about the INV concept. Inception or establishment of an INV has been seen as a complex occurrence, and it is questionable whether inception occurs on some certain day, during three days, or even eight years (Hewerdine & Welch, 2013). According to Hewerdine and Welch (2013), the process of inception includes a complex history that challenges simple calculations of the time aspect of internationalization. Seeing internationalization as a process helps understanding the heritage and future of the firm, and is not limiting these important aspects out of sight.

Based on their research results, Hewerdine and Welch (2013) suggest that INVs internationalize *during* rather than *upon* emergence. Following this approach, the emergent nature rather than the speed of internationalization, will become the defining feature of INVs. The speed and timing of internationalization have been traditionally seen to characterize the INVs. However, the role of speed is often exaggerated as researchers fail to capture the initial starting point of internationalization, which may be somewhere beyond inception. (Hewerdine & Welch, 2013)

According to Hewerdine and Welch (2013), viewing inception as a process has clearly implications for calculating the speed and timing of internationalization. Based on their evidence, international activities of INVs are undertaken prior to legal registration of the corporate entity. They argue that categorizing firms as INVs based on the point of incorporation may constitute a measurement error, due to the fact that the actual beginning of inception may not be captured. Could it be possible that in knowledge-intensive and innovative industries, such as dynamic high-technology industries, the inception takes place prior to incorporation? According to Hewerdine and Welch (2013) this could be the case, and firm's pre-incorporation history should therefore not be excluded from analysis, which unfortunately is the default position in many current studies. Leaning on the results of Hewerdine and Welch (2013), the pre-incorporation phase may have substantial impact on the pathway and categorization of INVs – if they even are INVs considering the activities committed prior incorporation.

5.2 DEGREE OF INTERNATIONALIZATION

Analysis of the degree of internationalization (DOI) at various points of a firm's life-cycle is seen as an important approach to conceptualizing various pathways (Kuivalainen et al., 2012). According to Kuivalainen et al. (2012, 450), "The activities conducted, and organizational structures within which these activities are implemented, change and develop during a firm's life-cycle". The change and development form the cornerstone of this paper, and identifying certain types of pathways is essential in order to study the changes and development of the case companies during their initial internationalization.

What distinguishes the various pathways suggested by the research is at least a methodological issue of how to define and measure the stereotypical patterns of behavior, which, on the other hand, distinguish pathways from one another (Kuivalainen et al., 2012). There is absolutely no shortage of measures that are used to measure DOI (Sullivan, 1994) The measures can basically be categorized under three themes which were identified by Zahra and George (2002) in their review of international entrepreneurship research; scope, scale, and time.

Scope is used to address whether a firm has diversified or concentrated its resources. Scale indicates the extent or intensity of a firm’s international business activities. Time, as a conceptual dimension, illustrates the point in time when the behavioral patterns have been conducted and the rapidness or graduality of the patterns. It also adds dynamism illustrating the overall development of a firm and its internationalization. In addition to Zahra and George (2002), these three dimensions appear in many studies focusing on INVs or BGs. (Kuivalainen et al., 2012) In this study, operation modes (FATA) are also used as a dimension to determine the DOI. With operation modes, we mean the modes through which firms operate internationally, such as export, import, licensing, foreign direct investments, etc. Operation modes address the level of a firm’s resource commitment to foreign markets, which impacts on the level of internationality.

According to Sullivan (1994) the literature suggests that the DOI has three attributes. Firstly, performance attribute, expressing firm’s international activity and performance overseas. (Vernon, 1971) Secondly, structural attribute, expressing the amount of resources committed overseas. (Stopford & Wells, 1972) And finally, attitudinal attribute, expressing top management’s international orientation. (Perlmutter, 1969) Integrative works on this field stress that DOI is not an absolute state but it is a continuous choice, which is made by the managers and relative to domestic circumstances (Forsgren, 1989; Welch & Luostarinen, 1988). Because of that, in Sullivan’s (1994) study, all measures are ratios. However, in this paper the number of empirical data is kept relatively small compared to some quantitative studies, so using ratios is not necessarily adequate as the purpose is to go deeper into the measures and causes. Sullivan (1994) argues that there are five measures that operationalize the performance attribute of DOI, two measures that operationalize the structural attribute of DOI, and two measures that operationalize the attitudinal attribute of DOI.

Table 3. Measures for the degree of internationalization (Sullivan, 1994)

Measures for performance attribute of DOI	**Measures for structural attribute of DOI**	**Measures for attitudinal attribute of DOI**
Foreign Sales as a Percentage of Total Sales (FSTS)	Foreign Assets as a Percentage of Total Assets (FATA)	Top Managers' International Experience (TMIE)
Research and Development Intensity (RDI)	Overseas Subsidiaries as a Percentage of Total Subsidiaries (OSTS)	Psychic Dispersion of International Operations (PDIO)
Advertising Intensity (AI)		
Export Sales as a Percentage of Total Sales (ESTS)		
Foreign Profits as a Percentage of Total Profit (FPTP)		

TIME: In early internationalization phenomenon, time can be understood either as precocity or speed of internationalization (Zucchella et al., 2007) According to Zucchella et al. (2007, 268) internationalization-related time has three dimensions: "It might refer to the early start of international activities, the speed of international growth, or to its pace and rhythm". When considering the pathway concept, measuring the early start of internationalization is essential. Timing illustrates the beginning of internationalization and how quickly and consistently it proceeds, being the key differentiating factor between different pathways (Kuivalainen et al., 2012). The role of time in internationalization process is a multidimensional and complex concept. In the existing literature time is mostly assumed as a linear phenomenon and not discontinuous or cyclical (Hurmerinta-Peltomäki, 2003; Sharma & Blomstermo, 2003a; Welch & Paavilainen-Mäntymäki, 2013) As explained earlier, time is also pretty inconstant concept because it is difficult to define when inception of an INV has actually occurred. Other INVs may have executed remarkable R&D before incorporation, whereas others may be literally new and young ventures.

According to Zucchella at al. (2007), precocity of internationalization has been seen as the key temporal characteristic in much of the existing literature. Precocity means the time-lag between the founding of a firm and the beginning of internationalization (Zucchella et al., 2007). Precocity is an important measure when distinguishing the traditionally internationalizing firms from the ones being international from inception or internationalizing rapidly. What makes precocity complex as a measure of internationalization is the little agreement on the definition of precocious internationalization. (Kuivalainen et al., 2012). According to Kuivalainen et al. (2012), understanding on precocious internationalization varies, and different researchers have used time limits from two years (Rennie, 1993; Moen and Servais, 2002), three years (Knight & Cavusgil, 2004), and even five years after founding (Acedo & Jones, 2007) to define the concept.

SCALE: As explained above, the measures of scale of internationalization are related to the extent of a firm's operations abroad. Foreign Sales as a Percentage of Total Sales (FSTS) has traditionally been used as a classic measure for scale of internationalization (Sullivan, 1994). Significant internationalization of early and rapidly internationalizing SMEs has been examined through a range of FSTS ratios (Kuivalainen et al., 2012). For example, Knight and Cavusgil (2004) used FSTS ratio of 25%, albeit noticing pre-defined cut-off ratios to be acknowledged as arbitrary by most of the literature.

Operation mode and its subsequent changes, as well as the amount of foreign assets, are an other way to measure the extent of internationalization. In the early phase of internationalization, exporting is most likely the dominant operation mode. (Kuivalainen et al., 2012) In the early phase of internationalization SMEs don't have resources to make large foreign direct investments, or they avoid doing FDIs for operational reasons (Dalli, 1994; Brouthers & Nakos, 2004). The companies involved in this study have passed the initial internationalization phase, which may indicate that some changes in operation modes have occurred. As suggested by the organizational learning theory, learning grows the resource and knowledge bases of companies and increases their capabilities, which may actually cause changes in operation modes (Benito et al. 2009). The major foreign operation mode options are listed in table 4 below.

Table x. Major foreign operation mode options (Welch et al., 2007, 4).

Exporting	**Contractual modes**	**Investment modes**
Indirect	Franchising	Minority share (alliance) JVs
Direct: Agent / distributor	Licensing	50/50 JVs
Own sales office / subsidiary	Management contracts	Majority share JVs
	Subcontracting	100% owned
	Project operations	
	Alliances	

Sullivan (1994) found that the scale composed of FSTS, FATA, OSTS, TMIE, and PDIO attained the highest reliability in their study with an alpha of 0.79. They labelled this combination of scale measures as "Degree of Internationalization Scale". The scale measures are explained below. In this study FSTS, FATA and operation mode are used as a measure for the scale of internationalization.

1) Foreign Sales as a Percentage of Total Sales (FSTS)
2) Foreign Assets as a Percentage of Total Assets (FATA)
3) Overseas Subsidiaries as a Percentage of Total Subsidiaries (OSTS)
4) Top Managers International Experience (TMIE)
5) Psychic Dispersion of International Operations (PDIO)

SCOPE: Scope of internationalization illustrates the diversification or concentration of firm's resources among different countries. The international marketing literature identifies two main market scope strategies, which are either market concentration or market diversification. Firms with market concentration strategy have a geographically narrow or limited scope, whereas firms with market diversification strategy operate in multiple markets or have broad geographic scope. (Ayal & Zif, 1979; Kuivalainen et al., 2012; Yeoh, 2004)

Scope metric is a problematic measure for internationalization because in many cases all countries are expected to be equal in size. However, this is not the case and use of scope metric as a measure for the foreign involvement may be misleading. In many cases, firms operating in a large number of countries is seen more internationalized or multinational compared to firms operating in fewer countries. Thus, scope measure is used together with scale and time measures in this study. Scope can be measured simply by counting the number of countries in which each company operates. Changes in the number of countries entered often illustrates internationalization efforts and commitment of resources in more countries, which correlates with the degree of internationalization (Johanson & Vahlne, 1977).

Table 5. Measures for scale, scope and time of internationalization

Measures for the Scale of Internationalization	Measures for the Scope of Internationalization	Measures for the Time of Internationalization
FSTS FATA Operation modes	Number of operating countries	Time from inception to first international operations

5.3 INTERNATIONALIZATION PATHWAYS OF INTERNATIONAL NEW VENTURES

Based on the research, Oviatt and McDougall (1994) argued that elements of international new ventures appear in a variety of ways creating different types of organizations and internationalization pathways. They categorized INVs into different pathways, based on the number of value chain activities coordinated and the number of countries entered. The number of value chain activities is related to the variety of operating modes, that the company utilizes in foreign countries. Use of resource-intensive operation modes creates more activities to be coordinated internationally. According to Oviatt and McDougall (1994), new ventures may change type over time by coordinating additional of fewer activities and by operating in additional or fewer countries. The five types of INVs are illustrated in figure 7. Each of the pathways creates certain types of challenges for the firm.

These challenges related to the internationalization process need to be resolved, which may affect on the internal organization of resources and cause internal changes. Here, the focus is on identifying the specific characteristics of each pathway, which causes these challenges.

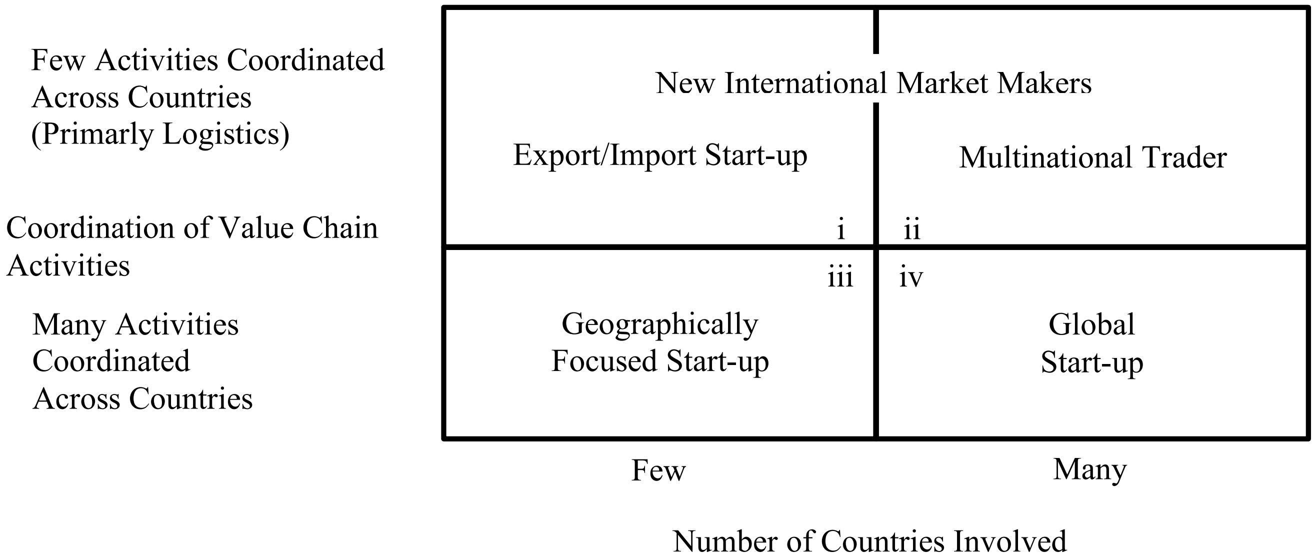


Figure 7. Types of International New Ventures (Oviatt & McDougall, 1994)

New International Market Makers (figure 7., i and ii) are age-old type of firms, and can be either export or import start-ups or multinational traders. Export or import start ups focus on serving a few nations which are familiar to the entrepreneur, whereas multinational traders serve multiple countries and constantly scan for new opportunities. Importers and exporters make profit by mainly moving goods to nations where is demand. The value chain activities that are internalized are the systems and knowledge of inbound and outbound logistics. In import and export start-ups transactions involving other activities tend to be governed by alternative structures. These start-ups make rather minimal direct investments in any countries. The location advantage lies in their ability to discover imbalances of resources between countries, and in creating new markets. Sustained competitive advantage of these companies depends on;

1) firm's ability to utilize the potential of opportunities before increasing competition reduces profits,
2) firm's knowledge about markets and suppliers, and

3) firm's ability to build and maintain a loyal business network.

The ability to utilize the potential of opportunities is also explained by the RBV and learning theory. The organizational resources and knowledge clearly have an effect on the capabilities of an organization to recognize opportunities and react in a suitable manner. Uppsala Model explains the implications of knowledge acquisition and commitment from the MNEs' point of view, but is also applicable for New International Market Makers, as their main operating mode is export and/or import. Firm's ability to build and maintain a loyal business network is explained by the Network Approach, which is applicable in this case as well. Here, the network serves as a source of additional resources and link to new connections supporting further internationalization.

Geographically focused start-ups (figure 7, iii) use foreign resources to serve the specialized needs of only a particular geographic region. The difference to the multinational trader is that geographically focused start-ups are geographically restricted and tied to the location of the specialized need, and they coordinate some extra activities in addition to only inbound and outbound logistics. The only difference to the export or import start-ups is the number of activities coordinated, thus their competitive advantage evolves from coordination of multiple value chain activities (e.g. technological development, HR, and production). According to Oviatt and McDougall (1994), successful coordination of these activities may be inimitable and a source of competitive advantage if it is socially complex or involves tacit knowledge.

Global start-up is the most radical manifestation of the international new venture. It derives remarkable competitive advantage from wide range of coordination of multiple organizational activities. Furthermore, it operates in locations that are geographically unlimited. These companies are difficult to develop and coordinate, because they require skills at both geographic and activity coordination. Global start-ups have multiple market opportunities due to globalizing markets, and they proactively act on opportunities to acquire resources and sell outputs in the market where they have the greatest value. Oviatt and McDougall (1994) argue, that these companies have the most sustainable competitive advantages, as they have "a combination of historically unique, causally ambiguous, and socially complex inimitability with close network alliances in multiple countries".

6. INTERNAL PERSPECTIVE ON CHANGE AND INTERNATIONALIZATION

Internationalization can be measured with various determinants and approached from different directions. As explained earlier, external business aspect perspective measures the degree of internationalization from the external point of view. The external measures, such as time, scale and scope of internationalization, illustrate business activities of a firm that can be more easily accessed by any researcher from outside the firm. In order to observe and measure the intra-organizational causes and consequences of initial internationalization, there is a need to study the internal management aspect perspective as well. Furthermore, this will enable examining the internal changes that have occurred inside the organization.

Initial internationalization and related changes inside the organization may appear quite different, compared to what the organization looks from outside. Resources, capabilities, strategies, forms, operations, and evolution of INVs may evolve rapidly during internationalization, and very little research has been conducted on these internal changes (Harris et al., 2012). According to Nummela et al. (2006) there are two key questions from the perspective of change and internationalization. Firstly, what export-related activities are carried out inside the firm and which ones are left for selected partners? Secondly, how the internal activities are organized? Organization and change of these internal activities, chosen to be carried out inside the firm, are in the interest of this chapter.

Young firms are often founded by solo entrepreneurs, and highly innovative INVs may be founded by entrepreneurial teams (Watson et al. 1995) The entrepreneur of the team runs the entrepreneurial process and his or her influence on the business is very high (Shane & Venkataraman, 2000) Young firms are different from established firms, as they have a lack of experience and legitimacy (liability of newness) and lack of resources and power (liability of smallness) (Stinchcombe, 1965). The internal perspective on organizational changes is essential, in order to capture what has really happened inside the organization during initial internationalization. The managerial aspect perspective enables deeper examination of changes and recognizes the role of entrepreneur on the development of the business.

6.1 DIMENSIONS OF THE INTERNAL ENVIRONMENT OF INVS

This chapter discusses the internal dimensions of INVs, and illustrates how changes inside the firm may appear different from the ones seen from outside. By discussing the actual dimensions of the internal environment, this chapter goes right into the point of this study. There are many factors that can change inside the organization during initial internationalization, and it is complicated to define a certain group of determinants that would be studied. Here, a somewhat coarse categorization of possible areas of change will be made based on the literature and own consideration, which doesn't rule out more detailed examination in the empirical part.

In order to create a framework which can be used to study changes on different levels of the organization, the organization has been divided into five dimensions; culture, resources, capabilities, strategic management, and outputs. The cultural dimension includes behavioral aspects, such as organizational culture, attitudes, values, flexibility, etc. Resources will cover tangible, intangible and human assets of the firm. Capabilities consist of patterns of skills to deploy resources to perform tasks or activities, which are for example managerial skills and special knowledge. Strategic management relates to strategic assets of the firm, such as business strategy, business model, and implementation of strategic processes. Outputs are referred as anything that is produced by the firm to be used in further production or to be supplied to customers in international markets.

Table 6. Dimensions of internal environment

Dimension of internal environment	Examples of aspects included
Culture	Behavioral aspects; organizational culture, attitudes, values, flexibility, etc.
Resources	Tangible, intangible, and human assets
Capabilities	Managerial skills, special knowledge, etc.
Strategic management	Strategic assets; corporate strategy, business model, implementation of strategic processes
Outputs	Anything produced to be used in further production or to be supplied to customers

As the RBV suggests, there are resources and capabilities, which are firm-specific. These can be self-evidently seen as dimensions of internal environment and objects of change. Strategic management is something that is done in order to organize the resources and capabilities to create value for the company and its stakeholders. Strategic management has obviously an effect on the way of conducting business activities, and it can change as the resources and capabilities, as well as the external environment changes.

It is evident that changes occur in internationalizing firms, and they may be really rapid. Personal experience and knowledge are stored in personnel from the foundation of the firm. These may change as the company internationalizes and changes in personnel occur (Nummela et al., 2006, 567). Changes in these factors may cause changes in organizational behavior, which may further affect on the performance. Changes are expected to be contingent upon each other and, therefore, changes in one dimension may cause changes in other, starting a process of constant change and development.

Nummela et al. (2006) presented a framework for studying change in internationalizing small firms (see figure 8.). In this framework, Luostarinen's (1979) POM-model is integrated to organizational change, and some factors are added to illustrate how change related to internationalization is reflected both internally and externally (Nummela et al., 2006). However, the framework is insufficient to explain what factors drive changes in organizations and what is the role of resources and organizational learning in the change process. According to Nummela et al. (2006), external changes can be seen from the outside (products, markets, operations), and internal changes are related to the organizational structure, finance and personnel. This categorization is quite coarse as there are multiple additional organizational dimensions where changes can occur, such as culture, resources and capabilities, management, etc.

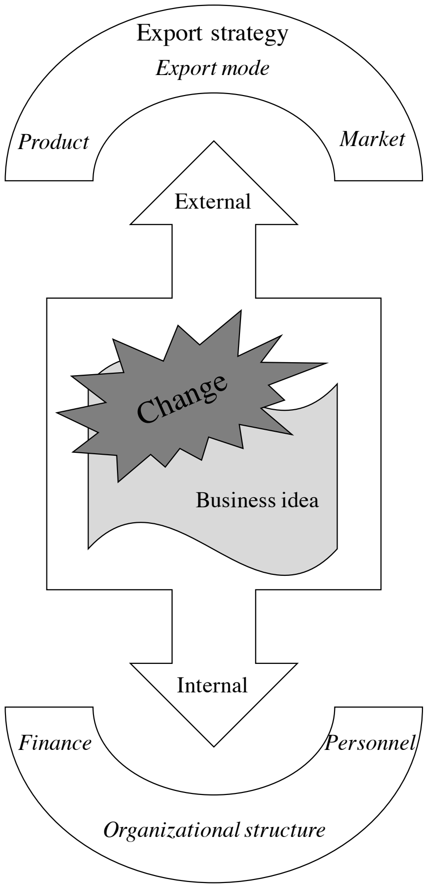


Figure 8. Framework for studying change in the internationalizing small firm (Nummela et al., 2006, 565)

Nummela et al. (2006) argue that, in the course of time, small firms have to decide whether to adapt their strategy and its key elements to the external environment. According to Nummela et al. (2006), these decisions are said to be affected by environmental factors. However, as a company acquires more knowledge through learning and recruitments, noticing its limited resources, the strategy can also be driven proactively from inside the company. This is, for example, when the company becomes capable of conducting totally new types of business, or if they need to cut out some parts of the business due to insufficient resources. It is also questionable whether corporate strategy or export strategy is visible outwards, but its outcomes (products, markets, operations) clearly are. The resources and knowledge in the organization affect on the nature and extent of changes that are made internally, whereas internal and external factors drive the changes and may indicate the type of resources to be acquired in order to conduct the changes. Furthermore, changes in one organizational dimension most likely affect on the other dimensions.

Therefore, internal and external (export strategy) changes can not be observed separately, but it is inevitable to observe both internal and external changes in order to find out the causes and consequences (causation) between them. In order to illustrate the factors that are causing changes in INVs, a revised framework (see figure 9) is presented using Nummela's (2006) framework as a foundation.

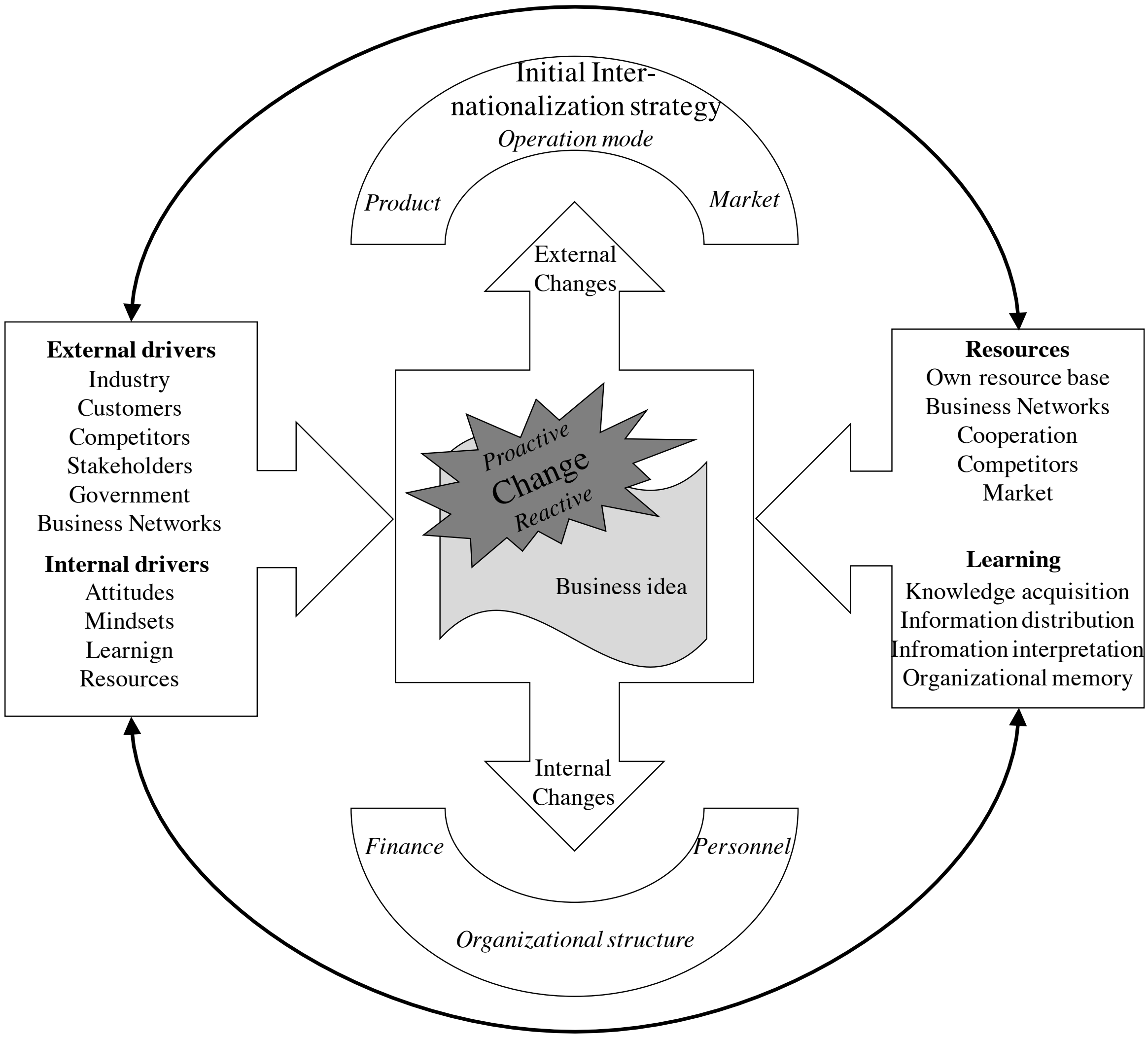


Figure 9. Revised framework for studying change in the internationalizing small firm (Revised from Nummela et al., 2006, 565)

Internal changes during initial internationalization do most likely have some performance implications for the INVs. Performance implications of internal changes has not been directly addressed in any earlier studies, but different point-of-views have been used. As INVs initial internationalization can be strongly linked to dynamic and rapid growth, as well as multiple change inside and outside the organization, alternative point-of-views can be used to explain performance implications of internal changes in INVs.

Consequences of the founding of the firm, organizational features, and environmental factors on market strategy and INV performance have been presented and discussed by Aspelund et al. (2007). The most important decision for INVs is related to the process of going international with regard to time, scope, and scale as discussed earlier (Aspelund et al., 2007). According to Lumpkin and Dess (1996), entrepreneur in an INV is autonomous, innovative, and risk-taking when making strategic decisions in the firm, and this challenges the traditional gradual internationalization theory (Gabrielsson & Kirpalani, 2004). According to Oviatt and McDougall (2000), the internationally alert entrepreneur is quickly able to identify market opportunities, and explore and exploit resources into the company, selling outputs to foreign markets. It has also been discussed and studied by Fletcher (2004) and McAuley (1999), whether INVs follow a niche strategy or a commodity strategy. Some literature has argued that INVs only concentrate on a few international markets, where others have proposed a wider international spread (Shrader et al., 2000) Crick and Jones (2000) have discussed the importance of psychic distance and networks for selecting new markets, and may studies have addressed the entry mode decision of INVs (Burgel & Murray, 2000). Aspelund et al. (2007) summarized the most important elements related to international marketing strategy; the speed of internationalization process (rapidness), niche focus vs. commodity, international intensity vs. global diversity, market selection (including the element of psychic distance), and entry mode decisions. These elements can be considered to be strongly related to internal changes in INVs during initial internationalization, and therefore affecting their international performance.

6.2 THEORIES EXPLAINING THE INTERNATIONALIZATION AND CHANGE OF INTERNATIONAL NEW VENTURES

As argued by Stinchcombe (1965), young firms suffer liability of newness and liability of smallness, which cause challenges for the companies in their internationalization. Resources are regarded as the major source of sustainable competitive advantage by the RBV, and the organizational learning theory explains how learning can affect organizational knowledge and capabilities. INV theory is too insufficient explaining how changes occur in INVs and how these companies evolve over time. INV theory focuses mostly on the early phase of INV internationalization, and it explains the existence of INV firms. INV theory can not be used to fully explain how these organizations evolve by learning, acquiring new knowledge, and acquiring resources from multiple sources. Here, traditional theories offer supplement for understanding the phenomenon comprehensively. Uppsala Model, Network Approach, and INV theory are not exclusive or contradictory, as all of them seek to explain a bit different phenomena. Vice versa, as a combination, these models can be used to support each other and create a more durable explanation for internationalization and change of INVs.

The RBV and organizational learning theory are universal meta theories that create a basis for all the internationalization theories or models used in this research, even though their view points differ. Extant literature has mostly ignored the fact that BG's or INV's internationalization also occurs through gradually increasing commitment to foreign markets. What differs from traditional MNEs is the length of the time span. Also, the stages or phases of internationalization are shorter compared to traditional MNEs. Hashai and Almor (2004), Crick and Spence (2005), and Gabrielsson et al. (2008) have noted that gradual experience building occurs even in rapid internationalization of INVs. INV theory does not provide answers for knowledge acquisition and commitment of resources to new markets based on new knowledge. Here the RBV and organizational learning theory create a base, and Uppsala Model guides how the process progresses. Even though, Uppsala Model originally addresses traditional MNEs, it can be applied in INVs as well. It also clarifies the process that proceeds from sporadic export to establishment of own sales subsidiaries and FDIs in foreign markets. INVs have inevitably limited resources, which causes them challenges in their internationalization. INV theory explains why this may not be a problem for INVs that are operating in an unprecedented manner compared to traditional MNEs. The Network Approach provides answers to how INVs can acquire resources and succeed despite their small size, by explaining the role of business networks in resource acquisition and internationalization. Every resource does not have to be owned by the INV itself, but various external relations in the business network enable these companies to lever their existing resources with a support of external networks and resources. As a combination of the aforementioned theories, we have a theory base that addresses the whole life-cycle of INVs, and provides answers to not only the early phases of INV internationalization, but also to the later phases.

How does all this relate and provide explanations to internal changes in INVs during initial internationalization? As illustrated in the revised framework for studying change in the internationalizing small firm (see figure 9.), there are various factors that have direct or indirect impact on organizational changes. These changes can appear in various forms and as a consequence of complex set of factors. The meta theories used in this research illustrate the importance of resources and learning for internationalization of INVs. Uppsala Model and the Network Approach explain how resources and foreign market knowledge can be acquired. INV theory explains the existence of INV firms, and the mindset behind these companies that enables them to operate in such a flexible and innovative manner. It can be seen from figure 9, how resources, learning, and internal and external change drivers constitute needs or conditions for change. Utilizing all available resources and internalizing foreign market knowledge in an efficient manner enables INVs to conduct internal changes that affect their performance.

7. RESEARCH METHODOLOGY

This chapter will discuss the research methodology used to conduct the research. Saunders et al. (2009, 5) define research as "something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge". Saunders et al. (2009, 595) also define methodology as "the theory of how research should be undertaken, including the theoretical and philosophical assumptions upon which research is based and the implications of these for the method or methods adopted". It is assumed that multiple internal changes occur in INV firms during initial internationalization, and these changes are affected by both external and internal drivers. Consequently, this research aims to find out how international new ventures change internally during initial internationalization. Additionally, a visual illustration of the change process of INVs' during initial internationalization will be developed. The aim of the research is to be achieved by creating a solid theoretical base, which addresses organizational change, internationalization of INVs, measurement of the degree of internationalization, internationalization pathways, and internal and external environment of INVs. Multiple theories and models are combined to explain the phenomenon of internal change, and the resource-based view and organizational learning theory are used as meta theories that create a basis for the theoretical part and explain organizational change. As a combination, literature on these topics provides a theoretical framework that is clear, easy to follow, and logical. The following chapters will discuss the selected research approach, research design, and research strategy to conduct the empirical study. The empirical part is conducted as a multiple case study, and therefore criteria for case selection, as well as collection and analysis of the data, will also be opened for the reader.

7.1 RESEARCH APPROACH

When considering the research approach for this study, neither deductive nor inductive approach felt suitable. There were no clear hypotheses to be tested and the purpose of the study was not necessarily to create novel theory, but to develop theory by adding important findings to what we already know. In addition, it was not clear from the beginning, which theories should be used to explain internal changes of INVs during initial internationalization, but the theory base developed and formed on the way.

In any research, the main objective is to confront theory with the empirical world (Dubois & Gadde, 2002). By utilizing systematic combining, “this confrontation is more or less continuous throughout the research process” (Dubois & Gadde, 2002, 555). This research aims to develop theory based on the empirical findings, and here an abductive approach will be used as a suitable research approach. Developing the existing theories and combining them into a more interpretive entirety does not, however, rule out possibility of generating new theory. Here, the empirical findings will be used to complement earlier literature on the phenomenon. However, “systematic combining builds more on refinement of existing theories than on inventing new ones” (Dubois & Gadde, 2002, 559). As there is such a little research conducted on the topic, selection is needed to be parsimonious with the developed theory. Thus, the research has its delimitations and a clear context, in which the empirical study will be conducted.

7.2 RESEARCH DESIGN

Research design can be seen as the general plan for answering the research questions and turning the research questions into a research project (Robson, 2002; Saunders, 2009). Due to the nature of the aim and research questions, this research will be conducted as an exploratory study. An exploratory study can be used to find out “what is happening; to seek new insights; to ask questions and to assess phenomena in a new light” (Robson, 2002, 59)”. According to Saunders et al. (2009), an exploratory study is useful for clarifying your understanding of a problem.

The empirical part of the study consists of three parts. The first chapter aims to determine the research methodology that will be utilized in the empirical part. An empirical framework (see figure 10) is presented to visualize the structure of the empirical part. The second chapter focuses on research results and analysis of the empirical data. There, all the cases will be analyzed separately using a within-case analysis. The second empirical chapter consists of case descriptions, key drivers of change, internal changes of the case companies, and performance impacts. To assess the results and findings of the analysis, a short cross-case analysis will also be made. The third empirical chapter concludes the theoretical and managerial interpretations and answers to the research questions. The validity and reliability of the research results will be critically evaluated. Finally, the limitations of the research and recommendations for future research will be presented.

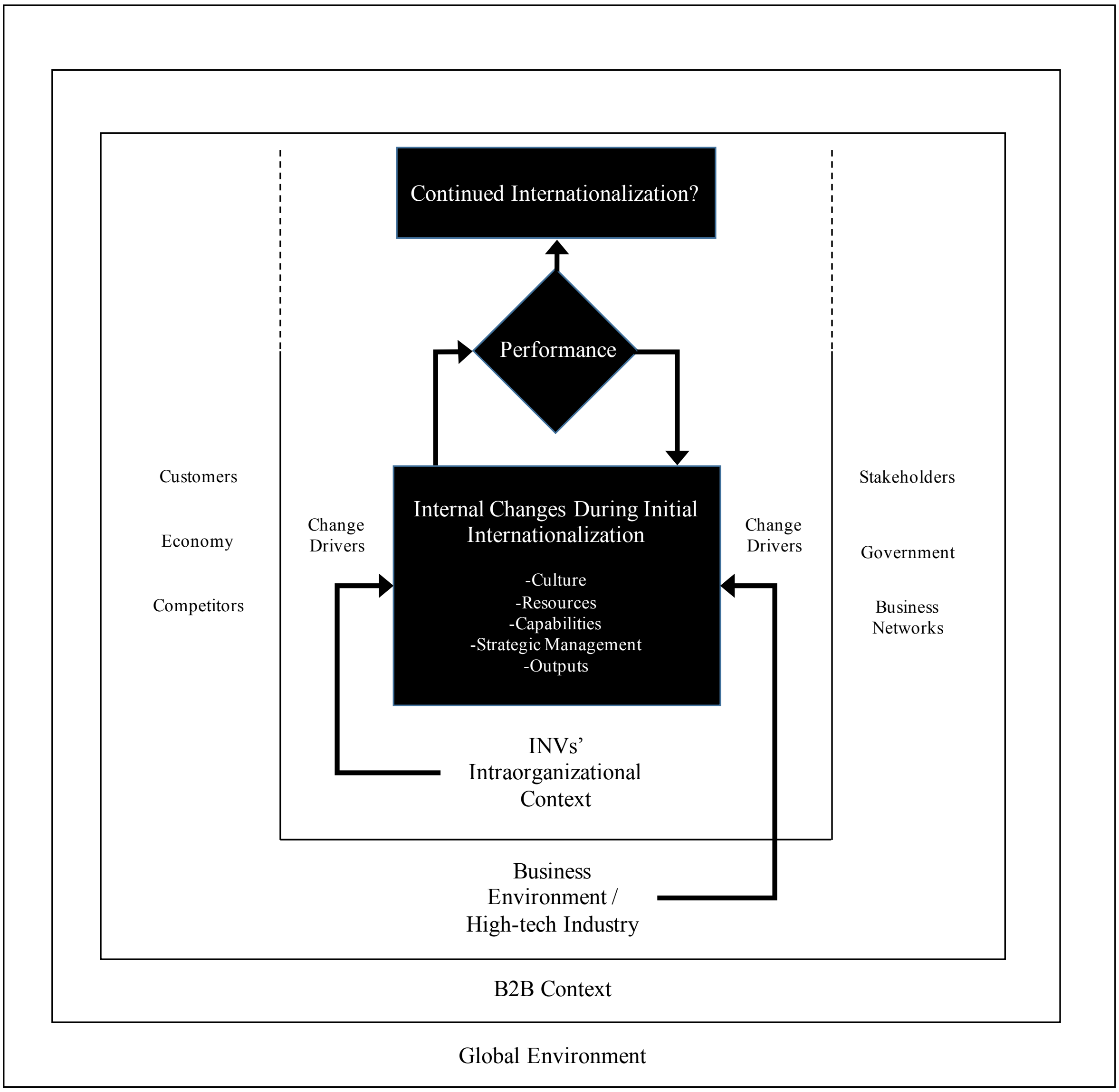


Figure 10. Empirical framework of the study

The empirical framework (see figure 10) of the research is derived from the theoretical framework presented earlier. It captures the factors affecting INVs internal changes during initial internationalization and visualizes the empirical part of the research. INV firms operate in a global environment, and all of the case companies operate in a B2B context. In more detail, there are high-tech companies from both medtech and cleantech industries, and this dynamic high-tech environment creates certain challenges for the companies. The intraorganizational environment consists of organization culture, resources, capabilities, strategic management, and outputs. These are dimensions of the internal environment, which evolve through changes and decision making. Changes inside the organization are affected by internal and external change drivers. Changes are mostly done to improve organizational performance and enable further internationalization. Depending on the success of conducting changes inside the organization, continued internationalization will occur and the degree of internationalization will increase. The continued internationalization is, however, delimited out of the scope of this study.

7.3 RESEARCH STRATEGY

Robson (2002, 178) defines case study as "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence". According to Eisenhardt (1989), "The case study is a research strategy which focuses on understanding the dynamics present within single settings". Case studies can utilize either single case or multiple cases (Saunders et al., 2009). The multiple case study strategy is used in this research to accomplish the aim of describing how INVs change during initial internationalization, as well as to develop theory on this field of research. Case studies have been widely criticized as they provide little basis for scientific generalization (Yin, 1994). However, focusing on certain specific situations and making interpretations there, case study approach can actually enable in-depth analysis and deeper understanding on the phenomenon and context (Weick, 1979). According to Saunders et al. (2009), use of multiple case study is rational when there is a need to establish whether the findings of the first case occur in other cases. This also enables the researcher to generalize from the findings (Saunders et al., 2009). When a single case is used, the results cannot be generalized widely and they are mostly valid in the one specific case. Use of multiple cases is justified in this research, as the aim is to develop a generalizable framework that illustrates INVs' internal changes during initial internationalization.

7.4 CASE SELECTION

The group of possible companies to be involved in the research was limited per se, as there were certain criteria were set related to the timing of internationalization, type of organization, and age of organization. All the companies were selected from a group of companies that had gone through the Tekes' (Finnish Funding Agency for Innovation) Young Innovative Company funding programme (YIC). The companies were selected from Medtech, and Cleantech, Energy and Industrial Services industries. The programmes were divided into Phase 1, Phase 2, Phase 3, and the Champions. The companies were selected mostly form the Phase 3 and the Champions, as those companies were more likely to be older and having passed the initial internationalization phase. Before contacting any company, the backgrounds of the companies were checked, based on the information available on websites and databases, to ensure that they match the research setting.

The first criteria for the case companies was that they were founded approximately 6-12 years ago (2003-2009), meaning that they are not adolescent companies yet. Having companies of this age also decreases the effect of memory biases, which impair the recall of memory. Memory biases may also alter the content of what the interviewees report remembering. The second criteria for the case companies was related to the time of internationalization, in order to match the definition of INVs. Thus, the companies needed to have started international activities within three years of inception.

Even if the criteria for case selection were strict, multiple different types of companies were wanted to be involved in the study. The number of cases needed was not clear from the beginning, but saturation was used as the major determinant for the amount of cases. The companies had been already assessed and filtered once by Tekes in the YIC programme. Tekes evaluates all companies applying for the programme, and the following aspects are assessed during the evaluation:

- "The potential for rapid growth in international markets
- current business activities and customer references
- a proven business model
- a business plan for international growth and the capacity to implement it
- the novelty and competitive edge of the product or service
- the competence of the management team
- other funding sources, venture capital" (Tekes, 2016).

Moving on to the next phase in the programme requires that the company has reached the "goals related to the development of turnover, ability to get funding from other sources, and expanding into new markets" (Tekes, 2016). There were 78 companies that had reached the goals and completed all the three funding phases. From these 78 companies, a total of 12 companies were contacted and asked to involve in the study. A couple of companies never replied and three companies refused to take part in the study. Finally, there were 7 companies that were willing to participate. Using saturation as a determinant for the amount of cases, interviews were started with the first three companies. Similar kinds of incidents and changes had occurred in all three companies, but two more companies were interviewed to find out whether similar aspects repeat in the data. After five interviews, it seemed like no new aspects are found out anymore and saturation is high. To ensure high saturation, the two final compliant companies were decided to be interviewed, ending up to seven interviews in total.

7.5 DATA COLLECTION

In this study, semi-structured interviews were used to collect primary data from international new ventures. The questionnaire included nine questions, which are divided into sub-questions for more detailed discussion. The interview questions can be found from appendix 1. Semi-structured interviews were guided by a topic guide, which contained some specific questions to guide the interview, and likely ways of probing (Lee & Lings 2008, 218). One week before the interviews, a list of questions was sent to the interviewees. This enabled the interviewees to prepare for the interview and consider possible answers to the questions beforehand. One hour of time was reserved to conduct each interview. The interviews were conducted mostly on the companies' premises, but a couple of interviews needed to be conducted via Skype, as the companies were located in distant cities.

7.6 DATA ANALYSIS

As there is a relatively large amount of qualitative data in this study, there is a danger of creating a chasm that separates data from the actual conclusions. To avoid that, within-case analysis is used to cope with the deluge of data. (Eisenhardt, 1989) Here, single cases can be explored in-depth as a standalone entity. As all cases are analyzed separately, more detailed analysis can be done and the findings can be finally summed up as theoretical and managerial interpretations. The qualitative data of this research, conducted through seven semi-structured interviews, was first recorded during the interview and then transcribed into a written format afterwards. The duration of each interview was approximately one hour, meaning that there was seven hours of recorded data in total. The total amount of written data after transcribing was 64 pages. Transcribing the recorded interviews made analysis of the data much easier. This process was conducted right after each interview when it was still clear in the memory. All the transcribing work was conducted personally by the interviewer, which required plenty of work due to the relatively large amount of data.

8. RESEARCH RESULTS AND ANALYSIS

This chapter aims to discuss the findings of the interviews and analyze their significance and consequences in the case companies. Firstly, case descriptions of all companies are made in order to introduce the companies. The case descriptions intend to determine the internationalization pathway of each company through time, scale, and scope metrics that were presented earlier. A short introduction to each interviewee is also made to clear up the background of each interviewee. Secondly, the key drivers of change will be discussed to illustrate the factors that have driven changes in the case companies. Thirdly, the very central topic, internal changes, will be discussed to find out how the case companies have changed internally during initial internationalization. Fourthly, the performance impact of the changes is opened up based on the interviewees' opinions. Finally, a short cross-case analysis will be done to see whether the changes in one company occur in other companies as well. This will also reflect saturation of the data and help evaluating validity and reliability of the research.

8.1 CASE DESCRIPTIONS

Company A is a Finnish-based nanotechnology company, and a supplier of production and research equipment for thin film and ALD and aerosol coatings. It also manufactures thin film electroluminescent displays. The company was founded in 2005 as a spin-off from a Finnish-based optical fiber manufacturer company, which was sold to Austria. The founders of Company A had ideated a new business model in the former company, and when the new owner did not accept it, the founders of Company A decided to establish their own business. It was totally based on the business model ideated in the former company. They managed to arrange a friendly spin-off, where 10 people and some intellectual property were shifted to the new company. The Austrian company remained as a minor shareholder in the new company, and it was bought out from the business during the second fiscal year.

In Oviatt's and McDougall's (1994) framework, Company A can be rightfully categorized as a Global Start-up. It has activities in multiple countries including sales offices, subsidiaries, laboratories, and cooperation programs. The company became international in its first year, only four months after founding, when it got its first customer from South

Korea, even though their interests were in China, Germany, and the USA. From these target countries, China was the most difficult one to enter, as they required some references from the western countries. From the very first day, Company A sought for a distributor in these three countries, and succeeded to enter Germany and the USA rapidly. Also China was entered successfully, after having good references from other countries. Regarding the precocity and speed of internationalization, Company A a can be seen as highly internationalized. Today, Company A has customers in about 50 countries, so it its degree of internationalization is high also based on the scope metrics. Company A operates on all continents and over 95% of its turnover is generated from abroad (FSTS). According to the interviewee, the FATA metric is difficult to use in their case. They have lots of activities in Finland, which are directed abroad to the customers. Their production is in Finland, but the products are mostly sold abroad. They use distributors and agents to sell their products globally, and they also have a subsidiary in the USA. Their activity network is global and an exact FATA value is difficult to determine. It can be noted, though, that the scale metrics support high degree of internationalization for Company A.

The interviewee in Company A was the Chief Executive Officer. He is one of the three founders of Company A, pursuing strong experience in international business and film coating technologies. The interviewee has done international business for 15 years, and his business intelligence can be seen sophisticated, based on the image gotten from the interview.

Company B is a Finnish bioinformatics company focused on development and supply of bioinformatics analysis and solutions through custom software development. The company develops innovative web-based solutions for analysis, visualization and management of multi-dimensional biologics data, turning data into knowledge. The story behind the company started in 2003, when the current CEO of Company B developed a database solution in his doctoral dissertation. The company was founded on that solution in 2009, as the founders wanted to take this technology on the next level.

In Oviatt's and McDougall's (1994) framework, Company B can be categorized as a Geographically Focused Start-up. The company made its first international operations one year from the inception, right after having funding for the business. The speed of gaining new foreign customers is, however, somewhat limited by their resources. The internationalization was begun by starting a project with at large German pharmaceutical company, which was actually a heritage from their cooperation with VTT (Technical Research Centre of Finland) in the early days. This company was also their first customer to be served. The interviewee mentioned Germany as an easy market for Finns to do business. Company B entered first the markets, which were easier to get into. Regarding the limited resources, the interviewee mentioned that basically they entered large customers instead of any specific markets. Enormous pharmaceutical customers led to a situation, where Company B could not serve and did not have to serve any other companies or markets at that time. After gaining some growth and having more resources, Company B entered the US market, as it is the biggest market in their industry.

Considering the FSTS metric, 90% of the company's turnover is generated from abroad, but its scope of internationalization is not wide. Most of its turnover is generated by four big accounts, and the total number of countries, in which they are present, is approximately 10. Nevertheless, the company coordinates multiple activities across countries as most of the business is done through project with foreign companies. The FATA metric was once again difficult to determine for the interviewee. Company B has a subsidiary in the USA, which generates approximately 10% of the annual turnover. The company is headquartered in Finland and most of its activities are coordinated from there. However, the nature of the business is highly project-driven and most of the work they do is primarily directed abroad. Even though most of Company B's resources are situated in Finland, those are used to serve customers in foreign countries. Based on the scale metrics, Company B's degree of internationalization is relatively high, as it has made a foreign direct investment in the USA and the customers are mostly abroad. However, what decreases the degree of internationalization is the relatively small scope of international operations. Company B uses mostly project operation modes and its own sales subsidiary in the USA. The company also operates as a subcontractor in some projects, and there also is a licensing factor in their business model.

The interviewee in Company B was one of the cofounders, who has been the Chief Executive Officer in the company since 2013. Before that appointment, he worked as a Chief Science Officer of Company B. Together with the interviewee, there were two other cofounders starting the business. The interviewee has strong academic history, and he possesses knowledge on bioinformatics, genetics, and programming. His business intelligence and business knowledge are on a surprisingly high level, regarding that he has no academic education on international business.

Company C is a Finnish pioneer and expert in diode laser technology. The company provides laser illumination products, systems and solutions. Their products are used by end-users of R&D applications, industrial companies in their industrial monitoring systems and system manufacturing integrators. The company was founded in 2004 by a group of five researchers at Tampere University of Technology. The preincorporation phase included multiple research projects with the paper industry, in which the researchers faced some challenges. These challenges were responded by the researchers, and after various advancements they came out with an optical laser-based solution, which was the basis for the new business.

In Oviatt's and McDougall's (1994) framework, Company C can be categorized as a Multinational Trader. It took three years for the company to get its first customers, who were international at the same. It was clear that the company would be international in nature, but the speed of internationalization was rather slow. During the three first years the company focused mostly on technology development, piloting its products in Finland, and commercializing the concept. In the end of 2007, the first products were sold to a German university, and after that the demand has grown substantially. However, the technology was new for the customers, and it has taken time from the customers to adapt and learn the benefits of the technology. Today, Company C has distributors in 25 countries, which indicates the number of countries entered. They have wide distributor network in Europe and growing market in Japan. Also, the USA seems to be opening for the company at the very moment. Some sales have also been made in Russia and South America, but these markets are not yet entered successfully. The FSTS metric shows that approximately 95% of the turnover is generated from abroad, which indicates high degree of internationalization for the company. The FATA metric, however, remains relatively low. The company is managed from Finland, all its manufacturing is done in Finland, and no major investments have been made internationally. Only international assets are the working hours dedicated to international projects, but no employees are located abroad permanently. Company C has two different product lines; standard products and industrial products. The standard products are sold by the 25 distributors of Company C. Project operation mode is used to sell the more complicated industrial products, which require customizing and consulting from Company C.

The interviewee of Company C was the Chief Executive Officer. He is one of the five founders of the company, pursuing strong background in technical research. He has some experience in business, but his strengths are obviously on the technical side. He has gained more commercial understanding and learned business knowledge as the CEO of Company C.

Company D is a Finnish-based biotechnology company, highly focused on research and development of novel technologies and pharmaceutical applications. Company D was founded in 2004 by six people, and it was a spin-off from a Finnish drug development company. These enthusiastic entrepreneurs had been working together in the drug development business as entrepreneurs and employees, and they wanted to start their own business once again. Company D's business is highly project-driven, and the turnover fluctuates according to the projects started and ended each year.

In Oviatt's and McDougall's (1994) categorization of INVs, Company D would be a Geographically Focused Start-up. Most of its customers are abroad, but the number of customers is limited though. Regarding the time of internationalization, Company D became international really rapidly. The speed of internationalization has been limited though, due to the project-driven nature of the business. The company became international in its first year after incorporation, and most of its customers are large foreign companies. The internationalization was started by entering first some European countries, as European companies were easy to do business with (low psychic distance). Secondly, Company D entered the U.S. markets, which was followed by the other continents. Today, Company D has business in all continents, and Finnish customers create a minor part of the account portfolio. Company D's total amount of countries entered is approximately 10. Considering the scale measures of the degree of internationalization, FSTS, FATA and operation modes can be taken into closer examination. Approximately 85% of Company D's cumulative turnover has been generated abroad, making it highly internationalized according to FSTS. However, the company has not made foreign investments. The only resources committed to foreign markets are human resources and capital committed to foreign projects. Considering the FATA metric, the degree of internationalization of the company would be relatively low. Company D operates from Finland and utilizes a project operation mode. They have operated through projects right from the inception and no changes have been made to their operation modes.

The interviewee in Company D was the Chief Executive Officer. He is one of the seven owners of the company, pursuing strong expertise in biotechnology. He has experience on running different businesses, and he pursues business knowledge needed to run the business together with three other members of the management team.

Company E is a Finnish Cleantech company, founded in 2008 to commercialize a breakthrough innovation in fine- and nanoparticle sensor technologies. The whole business was based on a new innovation and a new technology, which was created by one of the founders. The company was founded by 12 persons, including researchers with technical expertise and people with business knowledge. This team did not appear from nothing, but they had common history from aerosol research and business in related industries. Recently, in early 2015, the company was acquired by an American company, but the business itself remained unchanged.

In Oviatt's and McDougall's (1994) framework, Company E is a borderline case and it is not clear whether it should be seen as a Geographically Focused Start-Up or a Global Start-Up. However, comparing to the other case companies, regarding the variety of options and offerings delivered to its international customers, and seeing the aggressive internationalization strategy, I would categorize Company E as a Global Start-Up. For the company, it was clear that they would focus on international business, but the first foreign customer was not served until 2010, two years from the incorporation. However, there were no other customers either, as the company focused on development of its technologies and commercialization of its concept for the first two years. The turnover has not increased as rapidly as the owners hoped, but internationalization has proceeded through partnerships and building a wide business network. Based on the FSTS metric, Company E is highly international, generating approximately 98% of its turnover from abroad. The company has not made any FDIs and all of its employees are located in Finland. However, the company has made consulting agreements with two people who work for the company but are not on their payroll. These people are located in Great Britain and India, and their responsibility is to do market research and networking. Due to the acquisition, today two employees are dedicated to take care of relations to the USA and the parent company. In this case, the FATA metric is complex, as the company was acquired. However, the company can be interpreted to have intermediate degree of internationalization based on FATA. Company E is operating in approximately 20 countries around the world, but no business has been made in South America nor the continental glaciers.

The interviewee of the company was the Chief Executive Officer. He is one of the 12 founders of the company, and he remained the CEO after the acquisition as well. He has a business degree and expertise on the commercial side. He also possesses strong background in aerosol business and some technical understanding on Company E's technology.

Company F is a Finnish Cleantech company, which offers solutions to improve power quality, energy efficiency and environmental performance of companies in multiple business sectors around the globe. Company F was founded in 2008 by four founders, who had been working together as employees in the anterior company. As the company gone through some changes, caused by acquisitions and mergers, the four persons decided to set up their own business, Company F. According to the interviewee, their new company cannot be seen as a spin off, as only some human resources were shifted to the new company. They started the business from scratch, focusing on technology development for the first year and nine months.

In Oviatt's and McDougall's (1994) framework, Company F can be categorized as a Multinational Trader. For Company F, it was clear that their customers are abroad. The company made its first pilot project to Finland in late 2010, but the first ready-made products were sold to Taiwan in early 2011. Taiwan was soon followed by China, England, and Hungary. The speed of internationalization has been relatively fast after the product development phase. Roughly 97% of Company F's turnover is generated from abroad, but they are willing to increase sales in the domestic market in the future. Based on the FSTS metric, the company is highly international. On the other hand, FATA metric indicates low degree of internationalization for Company F. All the product development and production are made in Finland and no employees are located abroad, neither has the company made any FDIs. The company is using distributors, or value-added resellers, in foreign markets to sell its products. This reduces the need of resource commitment to foreign countries. Company F only has to export its products to the distributors, who take care of supplying the products to the customers. Company F sells its products to approximately 25 countries, which makes its scope of internationalization mediocre. However, considering the age of the company, it has entered a fairly large number of countries. The Americas is the only region where Company F is not yet active. The major operation mode is export through distributors, but some indirect export is also done. The company also has some brand label accounts, where its products are sold under customer's brand.

The interviewee in Company F was the Chief Executive Officer. He is one of the four founders of the company, pursuing strong technical expertise and experience in business management. He has an academic background as a researcher, but he has also been working for a couple of large companies as a technical professional and as a CEO.

Company G is a Finnish Cleantech company, focused on producing energy efficient solutions, reducing fuel consumption and carbon emissions, for maritime companies. Company G was founded in 2005 by four ambitious entrepreneurs. Two of the founders had been working at the the Helsinki shipyard, and they had noticed that the wide range of information, provided by electronic systems and sensors, was largely unused by captains and offshore staff. As the problem was recognized, the two shipyard workers contacted two of their friends, asking whether there would be a business opportunity. After a few conversations, it was clear that they wanted to establish a business based on their somewhat vague vision. Two of the founders had strong experience from maritime industry, and two of the founders possessed strong technical skills in data solutions and analysis, as well as software development.

In Oviatt's and McDougall's (1994) framework, Company G can be categorized as a Geographically Focused Start-up. Their product is applicable in maritime industry, which delimits the operating countries to be only countries with ports. Considering the business potential of the company, the company might be able to move towards being a global company, if they are able to scale their capabilities into new fields of business. This is, however, an assumption made by the researcher. Company G first made business in Finland and the initial product was different from what it is today. After revising the unsuccessful product and finding the ultimate market potential, Company G made its first international operations in 2007. After this point, the growth has been rapid and the company has become a major player in the maritime industry. However, as mentioned above, the number of potential countries is limited, which decreases the speed of internationalization. Company G started its internationalization from the USA (Florida) in 2007, followed by Germany (Hamburg) in 2009. Soon after that, they entered Greek and the rest of the European oceanic countries. The Europe was soon followed by some Asian countries such as China, Japan, South Korea, and Singapore. Today, Company G is operating in approximately 13 countries. The scope of internationalization of Company G is thus on an intermediate level, making it geographically focused.

Considering the FSTS metric, approximately 95% of the turnover of Company G is generated from abroad. They have one Finnish subcontracting partnership, which generates some turnover from Finland. The FATA metric was more difficult to determine. It was found out that the company has sales offices in Germany, Great Britain, the USA, and Singapore. Each of the sales offices is fully owned by the company, being foreign direct investments. They also have one employee dedicated to their sales office in Germany, four to Great Britain, six to the USA, and two to Singapore. Their total amount of employees is about 70, so 19% of the workforce is located abroad. The company is headquartered in Finland, and its final production of displays is made in Finland by a subcontractor. All the other activities, including software development, consulting, and data analysis, are carried out by the company itself. The base of the business is highly technical and it requires servers to be located in multiple locations, not only in Finland. Based on both FSTS and FATA, Company G can be considered as rather internationalized company. Operation modes, utilized by Company G, are exporting through own sales offices, and contractual modes like subcontracting and project operations.

The interviewee in Company G was the Chief Technical Officer of the company. He is one of the four founders of the company, pursuing academic experience in electronic engineering and signal processing, as well as work experience in software development. He also has a few years of entrepreneurial experience in software consulting business. The interviewee's business knowledge is on a good level, and he communicates business terminology in a clear and consistent manner.

Table 7. Summary of the case firm's selected characteristics

	Company A	Company B	Company C	Company D	Company E	Company F	Company G
Founded	2005	2009	2004	2004	2008	2008	2005
First exported	During 1st year	1 year from inception	During 1st year	During 1st year	2 years from inception	2,5 years from inception	2 years from inception
Internationalization type	Global Start-up	Geographically focused Start-up	Multinational Trader	Geographically focused Start-up	Global Start-up	Multinational Trader	Geographically focused Start-up
Turnover (€) in 2014	10 569 000	656 000	1 165 000	3 339 000	1 458 000	1 515 000	9 209 000
Personnel in 2014	49	14	10	38	10	21	55
FSTS (%) in 2015	High (95%)	High (90%)	High (95%)	High (85%)	High (98%)	High (97%)	High (95%)
FATA in 2015	Intermediate	Intermediate	Low	Low	Intermediate	Low	High
Operation modes	Export through distributors and agents, Own sales subsidiary,	Own sales subsidiary, Project operations, Subcontracting, Licencing	Export through distributors, Project operations	Project operations	Licencing, Subcontracting, Export through distributors	Export through distributors or value-added resellers, Indirect export, Brand label accounts	Own sales subsidiaries, Subcontracting, Project operations
Number of countries entered in 2015	High (50)	Low (10)	Intermediate (25)	Low (10)	Intermediate (20)	Intermediate (25)	Low (13)

8.2 KEY DRIVERS OF CHANGE

Key drivers of change were present in the interviews, and one of the research questions addresses this issue. Drivers of internal change can be either external or internal. External change drivers evolve from stakeholders, industry, market, etc., whereas internal change drivers evolve from inside a company in forms of entrepreneurial drive, proactive strategizing, willingness to internationalize, etc. Here, change drivers that were exposed during the interviews will be discussed. All of the companies recognized both external and internal drivers to have driven changes inside the organizations. It should be noted that the drivers of change, raised up by the interviewees, may be visionary and even biased, and illustrate how the interviewees view the business. It was difficult to determine whether changes have been proactive or reactive, or whether they are caused by internationalization or they are consequences of internationalization. Some probing and guiding were needed to address these issues.

In **Company A**, knowledge acquisition, learning, and markets were seen important change drivers. The interviewee saw that they have adapted quite a lot to the market needs and learned from their customers. He mentioned that “We have been international from inception, and we have made changes based on where we operate and what have we learned from the field. It is balancing between internal and external drivers and there is no exhaustive answer to this.” The interviewee also mentioned that they have made changes rather based on new knowledge learned from the customers, than making changes because they want to internationalize. According to the interviewee, it is clear that the same way of doing business does not function in all countries, and there some proactive strategizing and adaptation is needed. He stresses that it is a big challenge that how do they learn about their customers, and how do they change their internal operations in a way that they can meet the customers’ needs in the most efficient way. The interviewee mentioned that they have made some proactive changes, when they have been aware of the need, but changes have mostly been done reactively based on learning and customer needs. Internal drivers, such as the entrepreneurial and international mindset, have of course been present as well, but internalizing the knowledge acquired from the field is the most important driver. The importance of knowledge acquisition is also supported by the Uppsala Model (1977), and its importance is raised up also in INVs.

Company B operates in biotech industry, which is closely related to rather regulated pharmaceutical and medical industries. According to the interviewee, it is pretty clear that their internal will and drive are strong, but the market and regulation decelerate the development and changes, which could be made both inside the company and in the whole industry. External environment is thus a negative change driver for Company B. Resistance for internal change has also appeared among the investors, both institutional and private. Changes in the company during initial internationalization have thus been highly driven by internal planning and strategizing, which have been seen as a response to the rigid industry needs. However, external factors have driven the company into this situation, and it is thus difficult to determine whether the changes have been driven by internal or external drivers. There has been a strong entrepreneurial drive in the company from the very first day, but the management has tried to minimize the impact of any particular individual, making the organization as a combination of all its individuals. Planning and strategizing as proactive in the company. The management noticed early that it is difficult to gain more customers with their existing business model and strategy, so they began to proactively seek for new ways of doing business.

In **Company C**, the interviewee stated that "It is clear that the external factors have driven changes in our company the most". He explained that it is important learning how to internally operate so that they can cope with the external environment. He mentioned that "We do not have enough resources if we do not learn to work seamlessly with the external environment". In the first years, the company followed more its internal vision and entrepreneurial drive. However, during the last 3-5 years, the cultivating and improving impact of the understanding the external environment has been significant. As an INV, the company has limited resources and they were lacking capital during the last years. Due to financial problems, the company had to sell one of their businesses and focus on a narrower sector of their expertise. The dynamic nature of the industry has created challenges, and the company has had to stay conscious in order to enter the industrial markets. For industrial customers, it is about being totally aware of the technology and benefits of the product, to be able to argue and justify the importance of the product. This is what Company C has tried to improve, and the interviewee saw that they have some good openings, which may create major opportunities in the future. The interviewee identified both reactive and proactive changes, and the totality is a combination of these.

Company C has a management team, which is proactively seeks answers for the future, and combines learned knowledge into planning.

Both external and internal drivers of change have had an impact on **Company D**. From the external drivers, the markets and demand were seen as the most important ones, driving the Company D to adjust its supply according to the market needs. The industry is developing rapidly and some projects have been cancelled, when the company has noticed that they are already late with them. According to the interviewee, “The biotechnology market is a strong driver”, meaning that demand guides the technologies and products that should be in focus. From the internal drivers, strong drive, trust in own products and passion for the business were seen to have had strong impact on changing and developing the organization. The organization has also grown significantly in the number of employees, which has driven the company, from inside, to move from a small entrepreneurial organization into a more hierarchic and formal organization. In Company D, internationalization and related changes was seen to have been more proactive than reactive. Company D has made changes in the organization to be able to internationalize. However, some reactive changes have been made, when there has been a need to staff large projects with up to 60 professionals.

Company E, is in a bit different situation compared to the other case companies, as they were acquired by a US company in early 2015. According to the interviewee, they have had external drivers for sure, but the most important drivers have been internal. Willingness to grow and and develop were seen as the strongest driving forces after all. The interviewee said that “Internal will makes us to proceed with changes and seek for new accounts and markets”. He added that it is then important to adapt internally according to what is necessary. When asked about the impact of the dynamic industry, the interviewee saw it rather as an opportunity. Their whole business is based on the idea, that tightening environmental legislation and people’s concern about their own habitat are both emerging. According to the interviewee, “In Company E, we know the trend and its direction, and it opens new markets for us”. There are some regulatory factors that drive changes in the company and its products, but the industrial change is proceeding so that importance of Company E’s solutions is increasing. “We just need to adapt and be flexible in order to meet the market needs”, says the interviewee. The interviewee mentioned that they are ahead of the time with their technology, and they have been highly proactive in changing and developing their organization and products. Reactive changes are still needed as the industry is dynamic and changing rapidly. The former acquisition has also driven some internal changes and made the company more international. However, the way of doing business has remained the same.

In **Company F**, internal and external change drivers were seen to be linked to one another. The interviewee mentioned, that “Opportunities emerge from outside, and it is then about evaluating our own capabilities and considering which way do we want to go”. Adaptability was seen important, and listening to customers’ voice was mentioned to guide the company. According to the interviewee, “We have always tried to respond to our customers’ challenges, and sometimes this leads to development of new products and changes in the way we operate”. He adds, that it is also extremely important to stay focused and not to be infectious to all diverse ideas in order to grow. Internalizing market knowledge inside the company was mentioned to drive future changes. It enables recognizing practical ways of doing business and eliminating inoperative aspects. Reactivity and proactivity of changes was seen by the interviewee to be linked into a larger combination, where own capabilities and market knowledge are combined in an efficient way.

In the very beginning, **Company G** was strongly characterized by entrepreneurial mindset and willingness to create something remarkable. The entrepreneurs’ internal will, not their knowledge at that point, drove them forward. After they found the “remarkable idea”, the company has grown with a significant speed, and external change drivers have become more and more powerful. Company G’s interviewee argued that “Nothing has driven changes in our organization as the customers have”. He added that they have always had a very customer oriented approach, meaning that they have not developed any products in a silo. Company G has utilized Steve Blank’s Customer Development method from mid 1990s, in order to develop and change their organization, in a way that customer is in the center and customers’ needs will be satisfied. Customers’ views have been a strong driver developing the outputs of the company to serve the customer comprehensively. One remarkably influential person from the maritime industry was mentioned by the interviewee, to have driven their organization further and had an enormous affect on their development process as an organization. The impact of venture capitalists on changing the company was also seen significant by the interviewee. Derived from the importance of customers and external support, it can be said that the business network has had a great impact on Company G’s development, and the network has been a major change driver after the very first years. During the first years after incorporation, the changes were seen rather reactive, as there were so many novel things that the company had not been aware of. Subsequently, after creating a solid strategy, Company G has become more proactive in its decision making and there seems to a clear direction for the future.

Table 8. Change drivers in the case companies

Change Driver	Company A	Company B	Company C	Company D	Company E	Company F	Company G
External	- Dynamic nature of the industry - Customers and different market areas. - Adaptation to customer needs.	- Market and regulation as negative drivers - Resistance for change from investors	- Dynamic nature of the industry - Customers and the market	- Markets and demand - Adaptation to customer needs	- Dynamic nature of the industry - Environmental legislation and people's concer about their own habitat as positive drivers	- Opportunities in the market - Customer needs	- Customers - Influential persons in the industry - Venture capitalists - Business network
Internal	- Entrepreneurial drive - Strategy and acquisitions - Organizational learning	- Entrepreneurial drive - Internal planning and strategizing	- Lack of capital - Learning - Vision - Entrepreneurial drive	- Strong drive - Trust in own products - Passion - Growth of human resources	- Internal will - Willingness to grow and develop - Internal adaptation	- Own capabilities - Adaptability - Internalization of market knowledge	- Entrepreneurial mindset - Willingness to create something remarkable - Customer oriented approach

8.3 INTERNAL CHANGES OF THE CASE COMPANIES

As we have described each of the case companies and discussed internal and external change drivers in these companies, this chapter will only concentrate on the actual changes inside the organizations during initial internationalization. Each company will be analyzed separately, and the focus will be on the earlier defined dimensions of the internal environment; culture, resources, capabilities, strategic management, and outputs. The founding CEOs and one CTO were interviewed face-to-face, using a semi-structured method, and these key persons have been closely involved in the company's change over time. Some underlying characteristics of the case companies are summarized in table x., and a more detailed description of the changes in each company follows hereinafter. Based on this analysis, the changes will be concluded later in a cross-case analysis.

Company A: The culture of Company A has faced many changes on the way, and some levels of settling down, maturation, perception and focus are visible in the behavior of the people today. In the beginning people made things with a very wide range, and there was no courage to choose and focus only on certain businesses. Now people see the big picture and strive common goals together. "In the beginning, it was important in my opinion, that we tried to look bigger than we were", says the interviewee (CEO A, 2015). Innovative drive was strong in Company A during the early years. Now that the organization employs approximately 50 people, there are multiple states of mind driving the organization. Still, strong empowerment is used among the people, to inspire them and drive the organization forward.

Company A understood, right from the inception, that they would need to go international with their products, as there were no customers in Finland. According to the interviewee, international business inspired the whole organization and behavior of the people. The interviewee mentioned, that Company A has internationalized aggressively likewise born global literature suggests. In his opinion, they have internationalized even too aggressively, making it difficult to coordinate everything and maintain focus, seek growth, and control expenses at the same. However, the interviewee saw aggressive internationalization as a positive thing if the company just has enough resources for that.

In the very beginning, innovative drive was strong in Company A. The company has been highly active taking out patents, encouraging people to find new openings and act in novel ways. Some moderation and balance has certainly appeared through growth, but start-up spirit is still sought. During their existence, the company has been among the 10 most active patenting companies in Finland in every year except one. They have not limited their focus too much on any certain markets or customers, but they have kept the doors open. Early acquisitions brought new people into the company, which was seen as a challenge by the interviewee. “When buying an established business, it is extremely challenging to change the culture, and we have never succeeded perfectly in that task” (CEO A, 2015). The interviewee mentioned, that “Culture is impossible to force, and picking the best practices from each side is necessary” (CEO A, 2015). Most of the employees have become to Company A through acquisitions, meaning that they have longer history in the business than the company itself. Through acquisitions, Company A has changed from an expert organization into a manufacturing company with variety of activities.

Resources of Company A have been grown, during initial internationalization, by executing acquisitions and recruiting new talents. Company A made two acquisitions during the first three years, and one acquisition was made later in 2012. All the acquisitions have been made purposefully to make possible certain business activities and strengthen the existing ones. As the focus has moved strongly from product development accounts into industrial accounts, it was a remarkable step to acquire the production facilities with the latest acquisition. This was seen as one of the most critical changes in the resource base by the interviewee. Company A’s own technology is used in their production facility round the clock, which makes it a good reference at the same. As mentioned, the company has acquired such human resources, who have been working in the industry for 20-30 years. “Their know-how is something that cannot be easily acquired or measured, and it is difficult to imitate by competitors” (CEO A, 2015). Some of the technologies were developed in 1970s, and having people that have been working with the technologies ever since, makes the company’s history actually reach back to those years. The company has over 400 patents in different patent families and the number is growing constantly.

As the company has grown and become more mature, their capabilities to commit different business activities have evolved by truly learning from own mistakes, and having new talents from outside. The biggest change in capabilities has been the evolvement from a small start-up into a fully established international company, which can now enter new fields of business one after another, instead of doing business only in the familiar markets with a limited product offering. Company A’s capabilities have become scalable for many different solutions and customers, which is certainly a source of competitive advantage for them. Some capabilities, such as commercialization and industrialization, have been essential for the business, and these have been learned from own mistakes and succeeding. The key capabilities have remained the same through the history, but significant learning and evolvement have occurred to strengthen these capabilities.

The cornerstones of Company A’s strategic management are still there, and according to the interviewee, they are still “Turning innovations into success” (CEO A, 2015). This is their mission statement and it is accomplished by recognizing new ideas, understanding how to industrialize them, and commercializing them in new fields of business. However, it is mentioned by the interviewee, that their strategy has been moving and its implementation has varied from time to time. It was seen important that the company has been able to change and adapt, which has made the existing resources and capabilities applicable in new areas, and the company has remained flexible. A few years back, the management noticed that they had chosen a direction, from which it is difficult to come back. Then some reconfiguration was needed to continue into the right direction. The basis of Company A’s business model has remained the same. However, they have tried different variations of value capture and explored whether it is service, licensing, or sales of products that generates the best margins for the company.

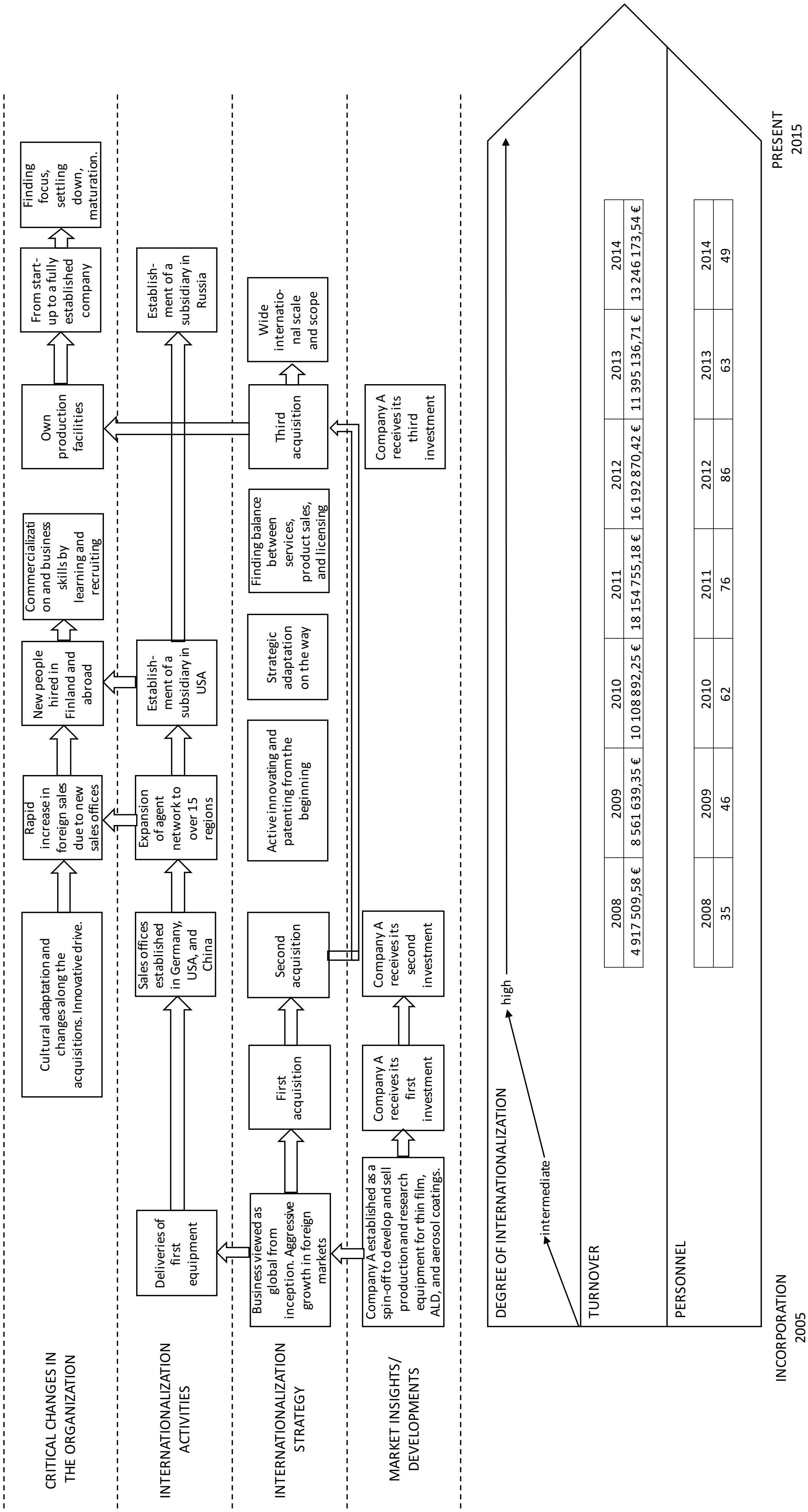


Figure 11. Initial internationalization and internal changes in Company A

Company B: In Company B, a radical change process has been gone through during initial internationalization. For the first 1,5 years, the company operated with very limited resources and concentrated mostly on building the concept and learning about the industry. There were three founders with academic background on the field of biotech and only one them was working full-time in the company. In 2010 the company got some seed funding, which enabled them to hire employees and start the business seriously. The company had strong technical basis, but they were lacking business expertise. They got the first commercial expertise when a professional board member joined the team as a chairman. Also, a consultant was used to develop a business model and strategy for the company. On later funding rounds, the company raised capital from several venture capitalists, both institutional and private, and now there are seven investors as shareholders. Funding was essential in order to serve the first customers. Furthermore, this enabled hiring 2-3 new people per year and growing the resource base of the company. Networks were an important resource for the company, especially in the beginning, when the company needed to find suitable projects to get into. As the business got funding and customers, the company started to grow and they were able to invest in new servers and other equipment which are essential for the business. The company also has some patents to protect their business, but intellectual property rights do not play a big role in their resources.

Company B operated relatively long time as a small start-up with a start-up mindset. A major change in Company B’s organizational mindset and culture occurred in 2013 when the interviewee was appointed from Chief Science Officer to be the the Chief Executive Officer. He made the best he could to turn the small start-up into a fully established company. He saw the need from the customer side, as their customers will not purchase expensive software from small start-ups because there is always a risk that the company collapses. Along with this change, Company B was organized to be a reliable company with all the policies, information security, and organizational structure well established. As the company had also grown in the number of employees, a real need was seen for organizing the people and appointing managers. The company has had innovative atmosphere and culture from the very beginning and they have been able to maintain it despite the growth, even though some challenges have occurred. Their primary goal has been to acquire more customers and serve their needs. As the company has had limited resources, it has been challenging to dedicate resources to improve innovativeness, and this is seen as a growing challenge in the future by the interviewee.

Organizational learning and recruiting were seen the major drivers that have improved and changed Company B's capabilities. "Each and everyone of us has learned quite a lot during the journey, and we have been able to acquire such capabilities that we could never have imagined" (CEO B, 2015). As the company had strong technical capabilities right from the inception, the most influential changes have occurred in their commercial capabilities. As a managerial capability, learning to organize people so that they will be able to utilize their valuable capabilities was seen to have had a great impact on the organization.

On the strategic side, Company B has also gone through a huge evolution. The business model and product decisions have been tightly linked in Company B. Their focus has shifted from one thing to another and their business model has taken its current shape after various movements. According to the interviewee, "The company has taken major leaps by learning which business model actually works in practice" (CEO B, 2015). They first thought that selling a commercial off-the-shelf software would be the most profitable way of doing the business. However, it was soon recognized that this model would not be practical because the customers always wants to have some customization to the software. Therefore, Company B developed a semi-custom model, which is more flexible for customers' needs and enables the company to compete against its competitors. According to the interviewee, "Focusing on one ready-made product would most likely have killed us as a company" (CEO B, 2015). That model would also have required enormous resources in order to compete against giant competitors in the market. The new semi-custom model required loosening the focus, and many investors have invested in the company because they have seen the scalability and flexibility of the company to enable success in the future. In the last years, Company B's toolbox for creating even better semi-custom solutions has improved and they have become able to handle and analyze even bigger data quantities. This has made their business more scalable in the BioIT industry, which stretches different software solutions' capacity to handle big data.

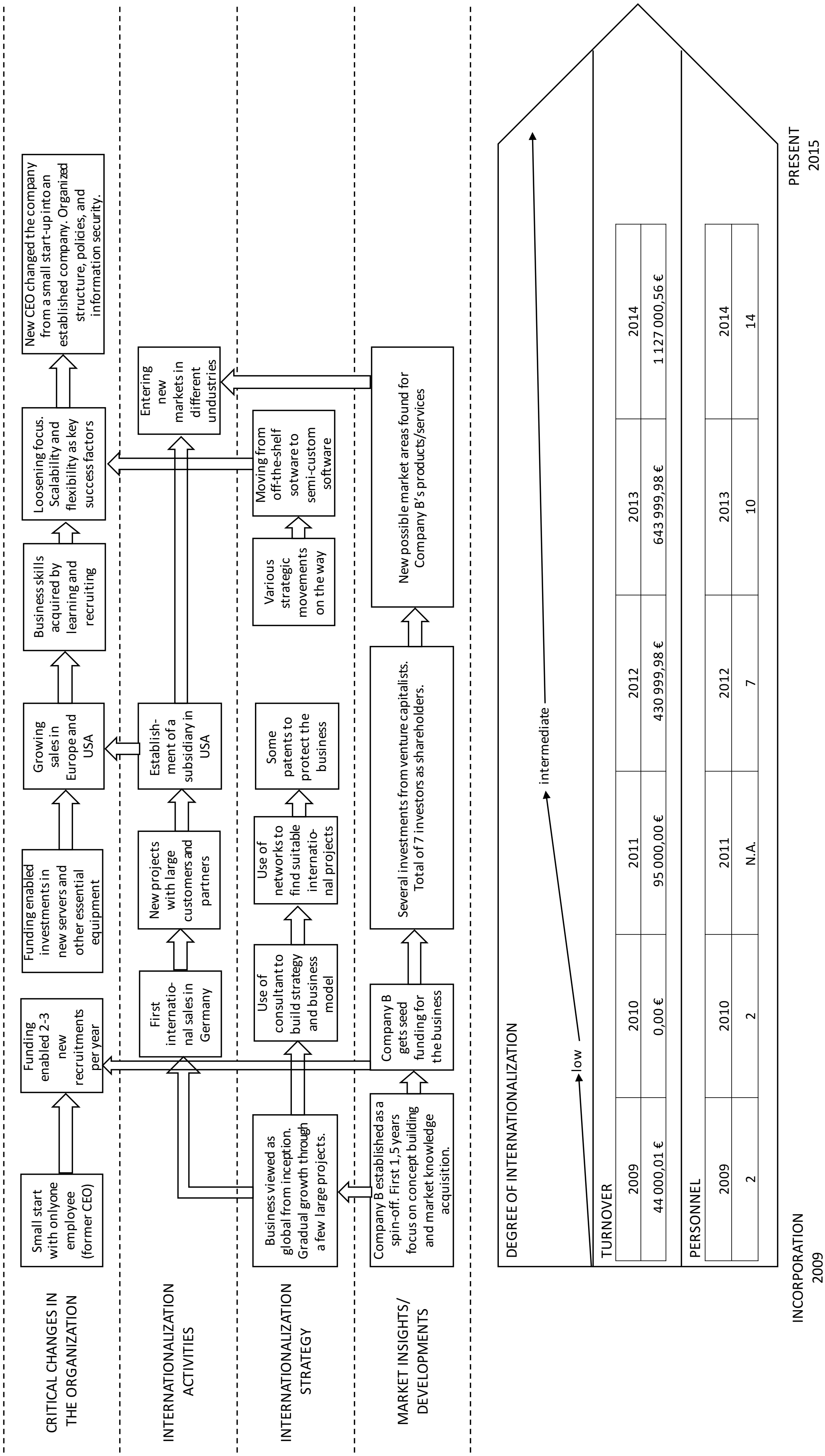


Figure 12. Initial internationalization and internal changes in Company B

Company C: Company C's business is strongly based on a technology created as a result of several years of research in different university projects. The technology was commercialized in a process that started in 2004 when Company C was founded. There were five founders who all had a strong technical background from different universities. As in many of the case companies, there was a limited amount of business knowledge in the company at that time. The founders were aware of the fact that they had limited financial resources and that investments were needed to start the business seriously. In 2006, the company raised seed capital from both Tekes and Sitra. Company C was finally able to start running the business with the help of these institutional investors. The company also introduced itself in several forums of private venture capitalists, and they were able to get one private investment in 2006. The capital raised in 2006 was used mainly for planning and piloting the commercial concept, but no investments in machinery were done at this point. During the first years, there were only the young founders working in the company, and external services were used widely to supplement the limited resource base. When the company developed further, some investments in machinery were needed, and these are updated all the time as technologies develop and volumes grow. Business knowledge was also recruited to the company, and there was an external Chief Executive Officer in the company for a while until 2013. Also, one sales manager was hired to the company for a short time.

In Company C, lack of resources has cause them liquidity issues, during the last three years, when the investors have had a need to secede from the company. This has caused the company to seek new investors simultaneously with the exit-rounds arranged for their current investors. Even though Company C has invested quite a lot of resources to find substitutive investors, they have not been able to find them. As a consequence, they have been forced to cut out other of their major businesses and focus on their monitoring business that is still left. This fruitless process has caused the company to take some steps backwards, and the value of each owner's ownership has declined quite a lot. According to the interviewee, "The forgone business was in a piloting phase and it would have required plenty of resources for commercialization and marketing purposes, which we were not able to acquire" (CEO C, 2015). Cutting out part of the business did also reduce the number of employees in the team. Considering the challenges a few years back, the company is in a healthy condition at the moment and they have been able to focus on their remaining business. This is a good example how organizational resources were not enough to complete all the plans that were originally planned. After the financial crisis, there were more financial resources to be dedicated to investments in machinery and other necessary factors of production.

The biggest and most influential evolution has occurred in the capabilities of Company C. The company operated as a small start-up for a few years in the beginning. They had a pretty advanced technology in hands, but developing it into a fully established business has been a long journey. The team has developed from every perspective and they are now working as a commercial business enterprise. Year 2013 was a turning point for the company in many sense. They were forced to lay off people, and this actually deepened the team spirit in the organization when they realized that they can make the company profitable by their own hands. Even though it was challenging, people understood the need for lay offs, and since 2013 there has been three subsequent years of profitable growth. "It has been extremely wonderful to see the impact of success on our team during the last three years" (CEO C, 2015). Despite variances and challenges, the company has really put effort to build team working capabilities, and this was seen as a very important development for the company in general. The actual commercial capabilities in marketing and product development have been developed by training the existing human resources. By recruiting new employees, the company has been able to acquire some routined expertise from the industry. If technologies are considered as capabilities, Company C has lost some capabilities during the years. This has, however, enabled them to more efficiently use the remaining technological capabilities.

As already discussed, focusing is the most suitable term to illustrate what has happened on the strategic side of Company C. Cutting of one of the businesses has released resources for other businesses. This has enabled focusing on selected industries and customers with suitable projects. Now the business is divided in two different business models and product categories. There are the standard products that are mostly sold to universities and R&D laboratories. Then there are customized industrial products that are developed for industrial customers, and this business is highly project-driven. There are synergy benefits between these two businesses as the standard products work as "trailblazers" for the customized industrial products. Having standard products sold to research use may open up new doors to different industrial customers. Customized products utilize the same technology that has been found useful in standard products in research use.

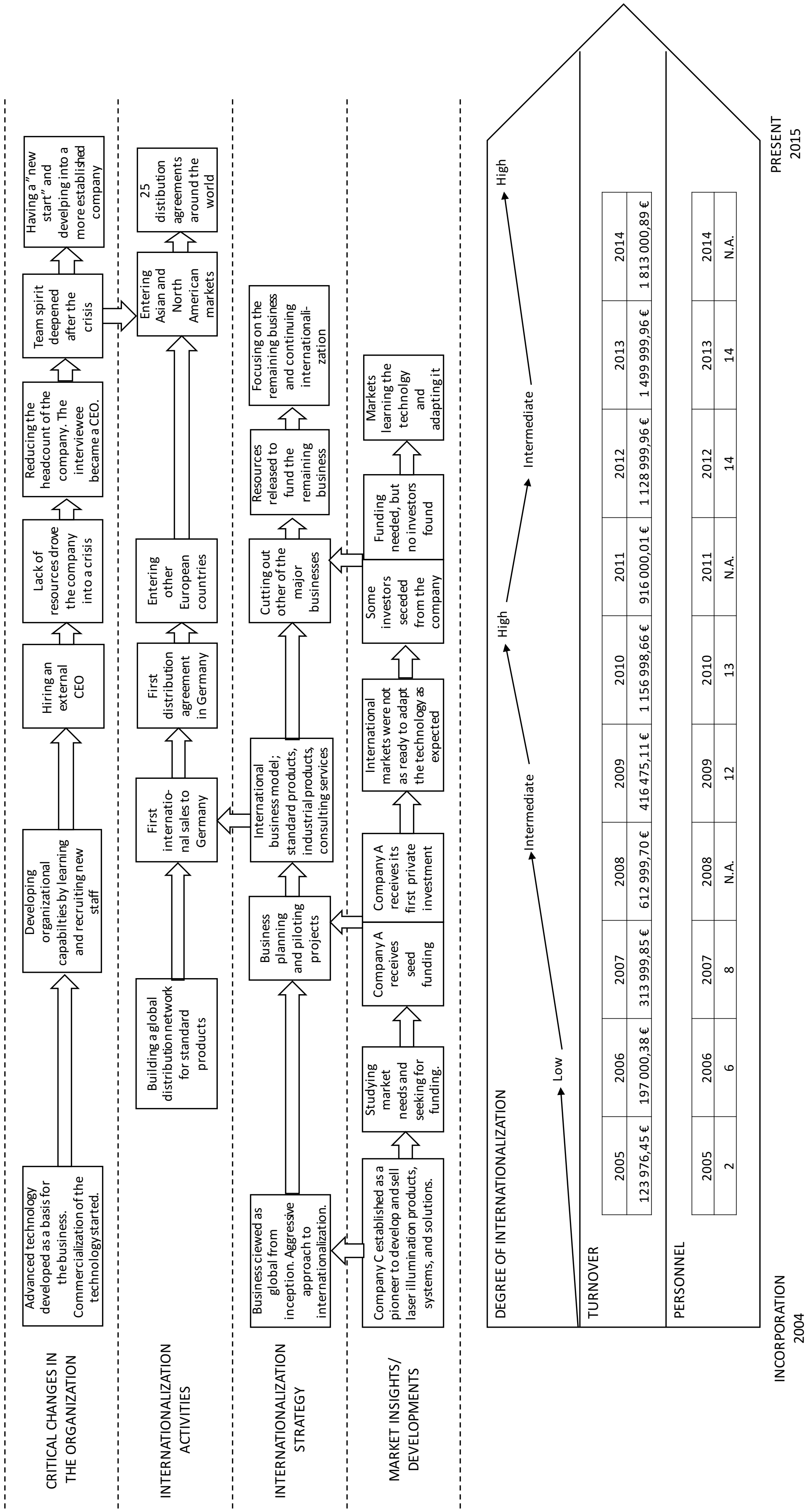


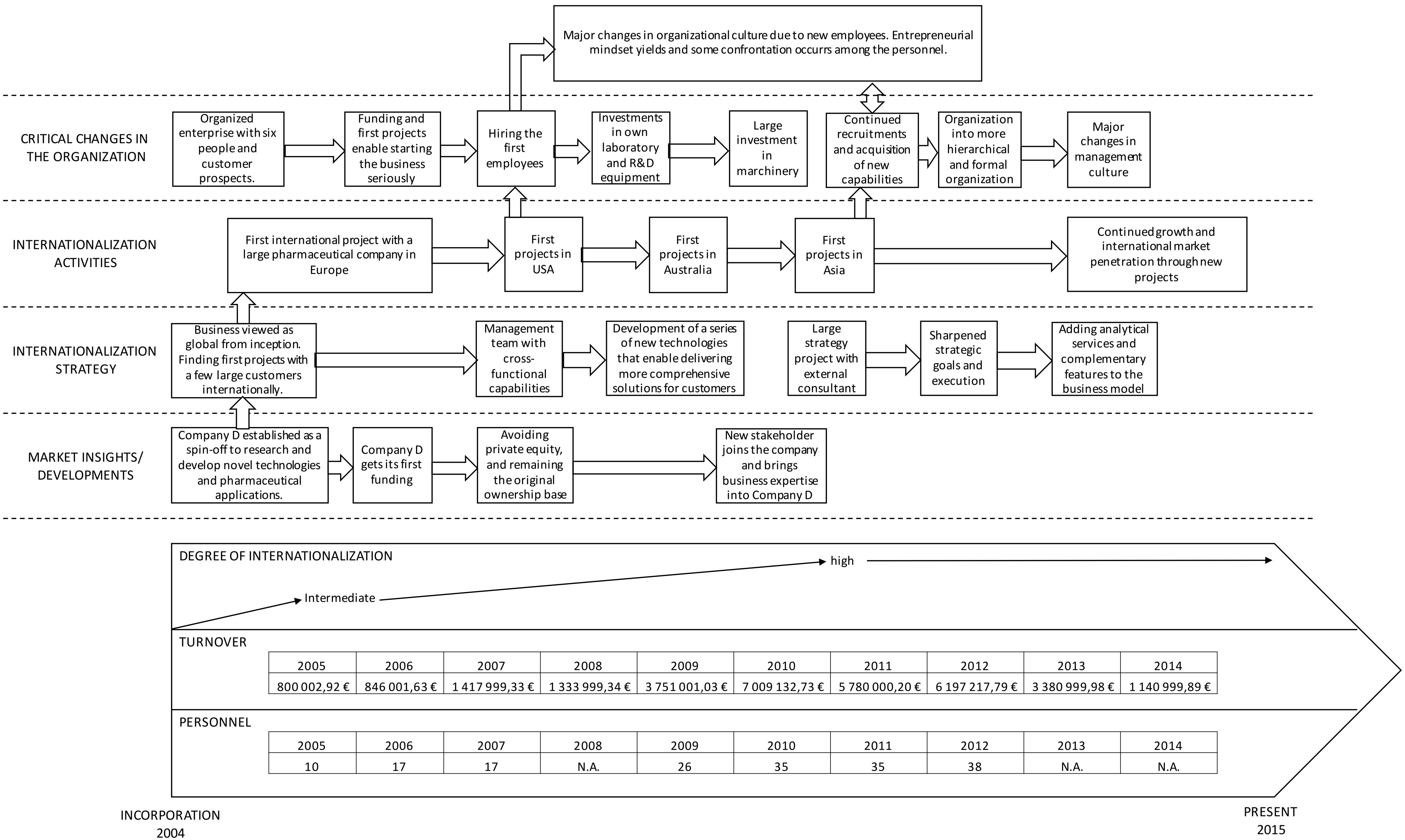
Figure 13. Initial internationalization and internal changes in Company C

Company D: Company D does not make an exception of the other case companies, and its business was based on a strong technical background in the beginning. The company was founded as a spin-off, and at the moment of inception they already had an organized enterprise with six people and customer prospects. Also, some intellectual property rights were shifted to the new company. Compared to the other case companies, Company D had plenty of congenital knowledge and a fairly large resource base at the moment of incorporation. The company was able to have a subordinated loan from Tekes in the very beginning. Soon after, they managed to have a large pharmaceutical company as a customer. These two occasions made it possible to start the business and hire the first employees. According to the interviewee, “Competing in biotech industry is very closely reliant on our own know-how and IP portfolio” (CEO D, 2015). In order to run the business, Company D has had to invest in their own laboratory and the R&D equipment are constantly improved. In 2009, the company made a remarkable investment in machinery which enabled them to develop and commercialize new technologies. Company D has tried to avoid external shareholders and the business has been mostly financed by utilizing their own income financing. Only one new stakeholder has joined the company until now, but he brought expertise instead of money into the company. Avoiding private equity has, however, caused lack of resources and reduction of projects. The business of Company D is strongly project-driven, and the number of project workers may change significantly based on the ongoing projects. However, the headcount of Company D has grown from 6 people in the beginning to approximately 60 people at the moment.

Growth in the number of employees has had a remarkable impact on the culture and behavior of the company. According to the interviewee, “We had a very familial spirit in the company in the very beginning and until we employed 20 people”. (CEO D, 2015). The organization culture remained pretty unchanged for the first years, and an entrepreneurial mindset was characterizing the company. When Company D grew and new employees were hired from outside, these new employees entailed a whole new atmosphere into the company. Entrepreneurial mindset yielded and there was a new culture in which people were more strictly complying with the labor laws and regulations. This caused some confrontation in the company and the management had to cope with these growing pains. The company was then organized into a more hierarchical and formal type of organization, which required major of changes and adaptation in the management culture.

Improvements and evolution in people's capabilities and know-how have played an important role as the business relies strongly on technological expertise. "We have developed a series of whole new technologies, which we see as our capabilities, and these enable us doing business in our industry" (CEO D, 2015). The interviewee mentioned that "Even if the people would leave the company, the technologies remain as our capabilities and we can still utilize them" (CEO D, 2015). It is obvious that growing the headcount from six entrepreneurs up to 60 employees has brought novel capabilities into the company. By combining these capabilities, in an increasing manner, it is possible to create competitive edge and perform better in the market. As the company relied heavily on technical know-how in the beginning, it is clear that their commercial know-how has increased during the years. "Our capability to commercialize and sell our ideas have evolved through learning and recruiting new people" (CEO D, 2015).

The strategic policy of the company has been sharpened during the years, even though the main idea has remained unchanged. There is a management team of three people, which is a combination of different skills to be used in the strategic management of the company. In 2011, large strategy project was executed in the company. They used an external consultant to guide and challenge their thinking. According to the interviewee, "Our strategic management team is a combination of biotech knowledge, commercial knowledge, financial knowledge, and legal knowledge, which create a solid base for us" (CEO D, 2015). The strategic alignment and product and/or service decisions have been hand in hand during the years. There is no standard product that could be sold directly to customers around the globe. Conversely, the technologies and capabilities are scalable and can be utilized to fulfil countless complex customer needs. "A good example of our capability is that some giant MNEs have turned to our side with challenges that they have not been able solve, and we have started project to address these challenges" (CEO D, 2105). Company D has developed its product and service portfolio by adding analytical services as well as new dimensions and extensions to their offerings. Company D's responsibility in most of the account relationships is the development of some specific product. Customer will take care of the clinical process of commercializing the product, for example a novel drug.



TURNOVER

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
800 002,92 €	846 001,63 €	1 417 999,33 €	1 333 999,34 €	3 751 001,03 €	7 009 132,73 €	5 780 000,20 €	6 197 217,79 €	3 380 999,98 €	1 140 999,89 €

PERSONNEL

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
10	17	17	N.A.	26	35	35	38	N.A.	N.A.

Figure 14. Initial internationalization and internal changes in Company D

Company E: In Company E, there was a strong technical resource base at the moment of incorporation, in 2008. However, this company had some business expertise to speed up commercialization of the new technology. There were 12 founders in Company E, which is relatively large compared to the other case companies. Half of the founders were actively participating in every day business in the beginning. In order to commercialize the business concept, the company needed funding. They were able to raise capital from one business angel in the summer of 2008, which enabled the company to start business seriously. In addition, one institutional investor joined to fund the company, and no other investors have been involved before the company was acquired by a US company in early 2015. According to the interviewee, “Funding is of course essential, and we have made business within our financial resources, which have been more limited than we would have hoped though” (CEO E, 2015). The company got accepted to Tekes’ programme in the very beginning, which was seen important by the interviewee. This has enabled the company to develop its international business network, which has been critical in creating a sales and distribution network. Also, some settled relationships have been created with respect to electronics, software and product design. According to the interviewee, “The business network has evolved on every possible area” (CEO E, 2015). The acquisition, in early 2015, strengthened the financial resources of the company as they now have a larger owner to support them. Company E is the only one of the case companies that has been acquired by another company.

There has been no great need to make investments in machinery during the history of the company. The core business is done mostly by utilizing computers, and all production is done by subcontractors. From the very beginning, Company E has been active in innovating and developing its IP portfolio. “During the last years we have made less patent applications compared to the first three years, but our technology is relatively widely protected considering our small size” (CEO E, 2015). The growth of the company has not been as rapid as the owners would have hoped on the way, and the turnover has remained relatively unchanged for the last 4 years. However, new employees have been hired during the years. At the moment, Company E employs 12 people from which two are natively Finnish. In addition, two consultants work for the company as external resources, and their responsibility is to make market research and contacting in Great-Britain and India.

The organization culture and behavioral aspects in Company E remained relatively unchanged for the first years, but the occasions during the last year have caused changes. As mentioned earlier, internal willingness to grow and develop as an organization have driven the company forward. There has been a strong entrepreneurial and international mindset, and the culture of the company was strongly start-up-like. As the company has grown, there has been a need to organize the people, but they have still been able to maintain the culture. Despite the acquisition, the values and norms have remained original during the years. According to the interviewee, “Changes in the culture have occurred along hiring foreign employees and becoming acquired by a foreign company. These occasions have changed our working and communication in a way that we are now much more in contact with the Americans.” (CEO E, 2015). These occasions have added more internationality into the company’s culture and behavior. There has been a strong innovation culture in the company from the very beginning. Even though more resources have been dedicated to commercialization of the concept during the last years, the company has also tried to develop its innovativeness.

According to the interviewee, “Gradual development has occurred in our capabilities during the journey” (CEO E, 2015). He added that they have learned a lot on the way which has affected on their capabilities and understanding on the industry. In the early years, they had only a limited understanding of how their technology can be applied in practice. Today, know-how and experience of applicability of the technology has evolved remarkably, and they have become more aware of what is worth doing and how can the technology be used. These capabilities, acquired through learning, have been important for finding the focus. The interviewee saw knowledge about international markets as an important capability, which has evolved during the years along hiring foreign people and developing the Finnish peoples’ international capabilities.

A question can be posed whether the acquisition has changed the purpose and strategic alignment of Company E. According to the interviewee, “We still operate as an individual company as we used to do before the acquisition. We are, however, now part of the US parent company which also owns another company similar to us. (CEO E, 2015)” However, the strategy and goals of Company E did not change with the acquisition. Disregarding the acquisition, changes and adaptation have occurred in the strategic alignment during the years. “We have had movement in our focus, and we have changed the weigh between our business models” (CEO E, 2015). The company generates turnover through licensing, OEM sales, and sales of their ready-made products. These models were developed in the early years, but now they have added more weight on delivering more comprehensive custom-made solutions to their customers. Increased capabilities and resources have made it possible to operate as a more comprehensive integration of expert organization and product development organization. Increased strategic capabilities have also made the company capable of choosing the correct business model depending on the type of each account. “We are constantly balancing on our strategic decisions, and considering whether this is clear enough or whether we are offering too many things for too many types of customers” (CEO E, 2015).

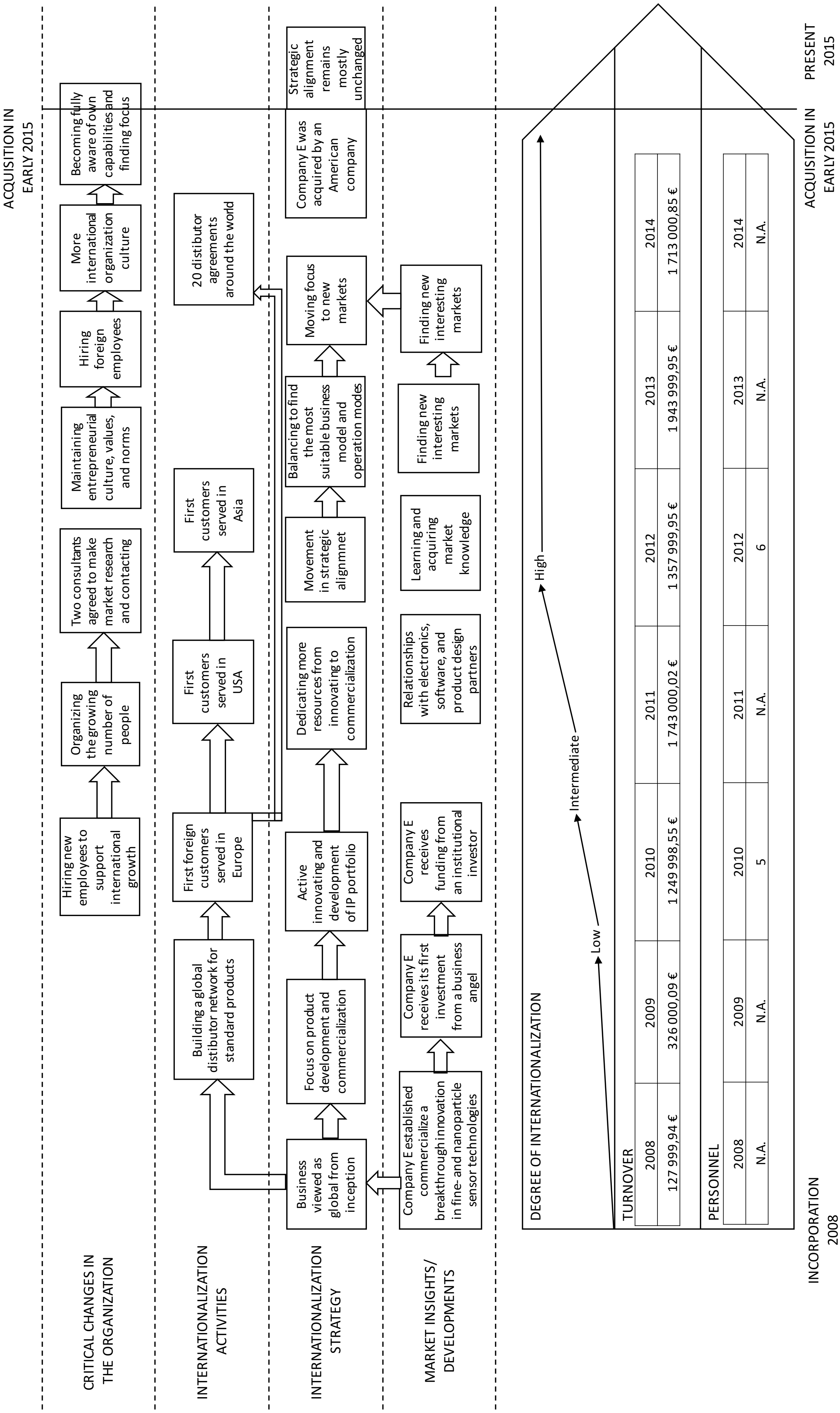


Figure 15. Initial internationalization and internal changes in Company E

Company F: Similar to other case companies, Company F's business was based on a strong technical background. As mentioned, the interviewee has also management experience from several companies, which has supported growth of the company. The company was started from the scratch, but the founders had plenty of congenital knowledge from earlier businesses. In the beginning, the founders invested relatively large amounts of money into the company, but very soon Company F raised loans from both Tekes and Finnvera. These loans enabled the company to complete the first phase of product development. Another loan was raised to complete the second product development phase, and the first pilot product was delivered in 2010, soon after completing the second phase. According to the interviewee, "The loans were essential for us and we would not have been able to complete our product development without financial support" (CEO F, 2015). The loans enabled Company F to have proof of concept and develop the first ready-made product. Right after the product development phase, Company F started to build a distribution network. Their existing business networks were utilized to complete this task. "Having existing contacts to different networks made it much easier for us to develop our distribution network. If there is someone to recommend you for new potential business partners, you are a few steps closer to the goal per se" (CEO F, 2015).

Company F has continuously developed its tangible resource base. They have continuously invested large amounts of money to build their own testing laboratory and keep it up to date. Today, there are also two venture capitalists who have invested in the company. These were seen essential by the interviewee, as the product development and building the testing laboratory were quite resource-consuming processes. In order to protect the technologies and create conditions for having funding, Company F has dedicated resources to develop its IP portfolio. As the company has grown, there has been a need to hire new human resources. This has been a demanding task for the company as suitable employees are not easy to find.

There have been significant changes in Company F's organization culture. In the beginning, coordination and organization of the personnel was easy as there were only a few employees. Afterwards, as the headcount has grown, need for more systematic organization has appeared. According to the interviewee, “The first step is when you employ approximately 10 people, and you need to start organizing meetings and communicating information more efficiently” (CEO F, 2015). This is the step when people do not work with the same projects and information does not flow as it did earlier. To improve the culture and information flow, Company F has started to arrange Monday meetings and monthly meetings, and budgeting is done in a different manner and based on different objectives. “There is a management aspect strongly present, and everyone has to know which direction we are going to, what is relevant for the business, and what is irrelevant” (CEO F, 2015). It has also been possible to reorganize division of labor when Company F has acquired new talents and supplementary capabilities. According to the interviewee, they have been able to maintain innovativeness in the organization. However, his task has been to put more effort on selling the products and making money. “It is the reverse side of innovativeness that we need to gain profitability as well” (CEO F, 2015). He added that finding balance in this dilemma will be one of the success factors in the future. Despite the growing headcount and developing organization, Company F has been able to create a culture that works. As the company manufactures its own products and tests them in their own premises, there are people with various backgrounds and different attitudes to work. This is an issue that needs to be handled in order to maintain harmony in the company.

Capabilities of Company F have been developed by educating the personnel and acquiring new talents. As an example, Company F arranged a development project of 15 months, including 11 workshops, to improve its readiness for internationalization. The interviewee mentioned, that “In my opinion, we are much more capable of doing business now than 3-5 years back” (CEO F, 2015). The company had a relatively homogenous group of people in the beginning. As the technical know-how was strongly present in the company from the very beginning, there has been more need for acquiring business and sales people. According to the interviewee, “The world is full of different kinds of business development managers, but finding good salesmen is a more difficult task” (CEO F, 2015). The company has, however, been able to find new people to handle the sales.

The strategic alignment of Company F has changed a lot during initial internationalization. In the beginning, improving the quality of electricity supplied to power grids was seen as the key business for them. However, they had to pull out from that market a couple of years ago, after recognizing that the market was not working as they supposed and their value proposition did not match customers’ expectations. Company F had to reconsider its business, and they turned their focus to industrial customers for whom the quality of electricity creates significant value, adding capacity and reducing costs. This was a major strategic change for the company, and they are now expecting growth with the revised strategy. Company F’s business model is built around selling their technology, which can be adapted and customized based on the customer’s needs. The technology is scalable for multiple purposes, and the final product can be applied to fix problems of each specific customer. During the first years, there was also an idea of providing consulting services to customers in order to gain income to finance the product development phases. However, not much consulting services were eventually sold. To add some complementary services into their business, the company has started to provide different measurement and analyzing services to its customers. These services can be used to gain new customers, as it is possible to point out that the customer would actually benefit from using their products.

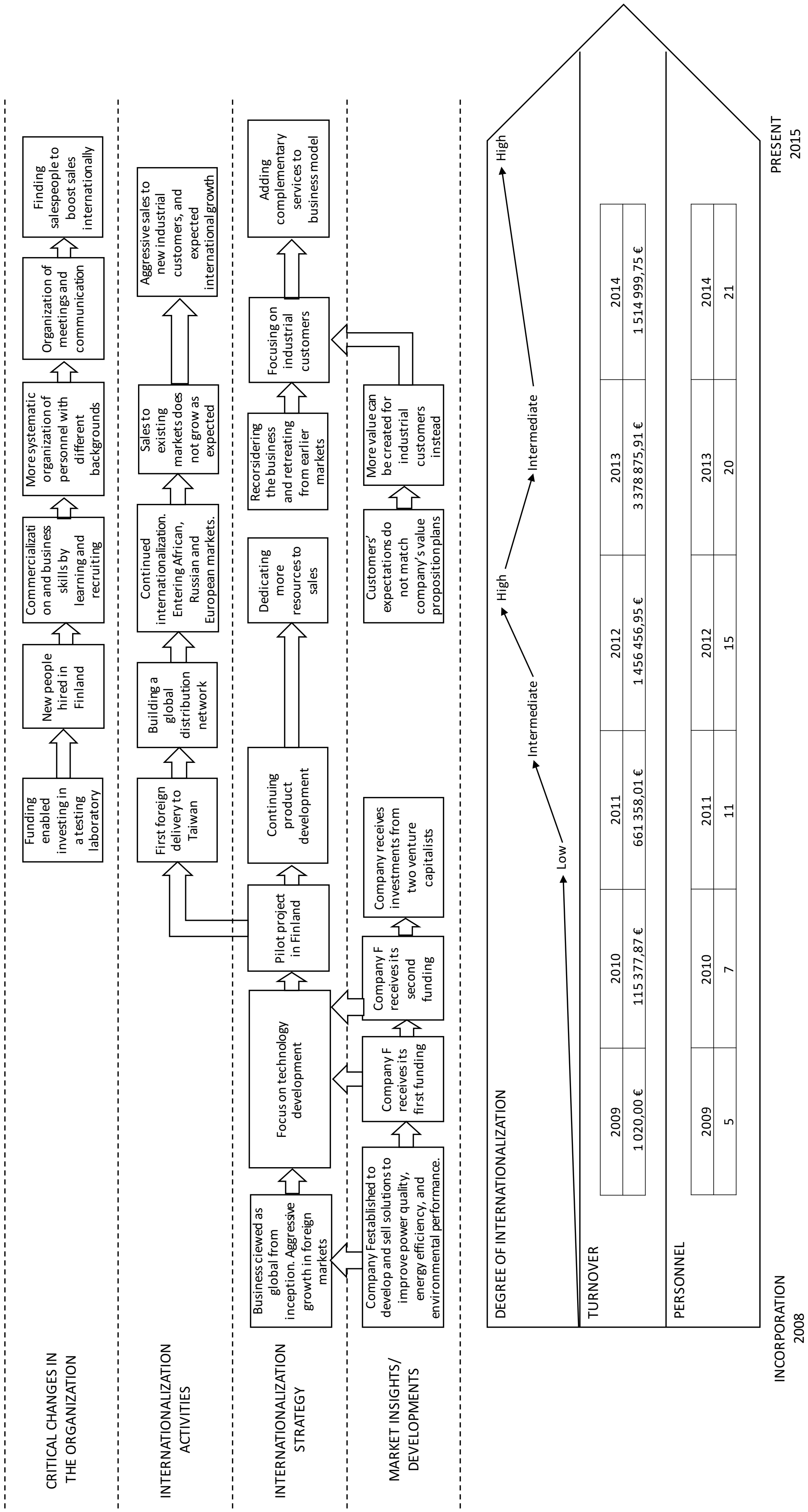


Figure 16. Initial internationalization and internal changes in Company F

Company G: Company G had a relatively wide range of multidimensional expertise and congenital knowledge at the moment of incorporation, in 2005, but their business idea was still somewhat vague. The four founders had extremely strong background from different technical fields and they also possessed experience on running a business. According to the interviewee, “We were all starter-type of people who had plenty of ideas and willingness to create something remarkable” (CTO, 2015). The founders had strong relations to variety of business networks, and together with their strong drive this was a fruitful baseline for their business. The company raised seed capital from Tekes which enabled them to hire new expertise. In addition, a company, owned by two of the founders, invested a small amount of capital to Company G in the very beginning. In the beginning, two of the founders worked full-time in the company and the two others only partially. They saw need for hiring new people and soon a developer was hired to strengthen the organization. As the company develops solutions for the maritime industry, one master mariner was hired to bring that special expertise. This was the resource base for almost a couple of years until Company G found an idea that was seen remarkable. It was autumn 2006 when the company started to develop their new business idea, and year 2007 was completely dedicated for product development.

As mentioned, the founders had very strong technical know-how. According to the interviewee, “One of the founders developed our systems in a flash, and there was absolutely no problem on that side” (CTO, 2015). He added, that “The actual market was a black hole for us, and we needed to find out how to enter the market and organize our business” (CTO, 2015). The company needed to use variety of external support to find that information. Their strong networks played an important role in this task, and an even wider network started to form around the company. “It was the most painful and demanding task to create that network, which enabled us to understand our market and how to do business there” (CTO, 2015). There were a few influential individuals who acted as messengers for Company G and opened new doors in the market. At the point of having a product and understanding on the market, Company G started to invest heavily on human resources. In order to finance their rapid internationalization, venture capitalists were involved in 2008-2009. This changed the organization dramatically. The venture capitalists brought a new CEO and significant craving for growth into the company in 2009. The growth boom was seen even too massive by the interviewee. He mentioned, that “If turnover starts to drive the whole business, it will get ugly. But if there is nobody to drive the business, nothing will happen." (CTO, 2015) The CEO was changed in early 2014, when his job was done and the company had been grown significantly. One of the founders continued as a CEO after that. One of the venture capitalists have changed on the way, but there is still the same amount of them involved today. Company G has no actual machinery as their products are manufactured by a subcontractor. However, they have made large investments in software and servers both in Finland and abroad.

The culture and behavior in Company G have changed significantly, but there are still the same values that drive the people forward. "We have been very transparent from the very beginning, we call a spade a spade, and everything is done straightforward" (CTO, 2105). Doing new and remarkable things was seen something that has driven the company. What has changed in the culture is the balance between "starters" and "finishers". In the beginning, there were plenty of starter-type of people, but there was a need to get things done more effectively. This is when finisher-type of people entered the company, and now there is a good balance of these personalities. "For a long time, we made plenty of new things and started new projects, and the company will soon suffocate if nothing is finished" (CTO, 2015). Innovativeness has remained in Company G, but it has changed its nature. Now that the company has grown, they can create so remarkable things that would not have been possible in the early years. The groundwork has been done and even greater things can now be built on that base. The headcount of Company G has grown up to 70, which has caused radical changes in the management culture. "We were obliged to start framing the company, organizing our way of working, and improving our communication" (CTO, 2015). Communicating the strategic alignment of the company for all the organizational members has been done with a dedication, and it is now as clear as it can be for all. This guides the people and creates a frame for their thinking in Company G.

The capabilities of Company G have evolved significantly during the years on all fields. The founders were seen as Jack of all trades-type of people by the interviewee. "We could do multiple things, but we had no deep understanding on certain things" (CTO, 2015). This is why resources were needed from outside, and new people were hired to bring new capabilities into the company. "Our capabilities have evolved on every possible field, including sales, marketing, product development, deliveries, operations, technology, etc."

(CTO, 2015). The company had no experience of running the business operations, and new people have built the operations from the scratch. The CEO, brought by the venture capitalists, implemented whole new sales capabilities into the company. This was seen important by the interviewee, in order to build a comprehensive sales organization. In product development, Company G started from the scratch. There some consultants have been used, but the product development has mostly developed by hiring new employees and learning. “In the beginning, we were happy if we could make bits move from point A to B, but now we have doctoral-level people building modelling methods and doing data analysis” (CTO, 2015). The interviewee stressed that, without external help and recruitments, they would not have been able to develop the organizational capabilities into this point. In addition, to develop the employees’ capabilities, they have been circulated from one role to another inside the company.

“Until 2009, we had no strategy at all, neither had we a clue about what we were doing in the beginning” (CTO, 2015). The new CEO brought some sales strategy into the company in 2009, but it was still not corporate strategy. As mentioned, between 2009 and 2014 it was a time of a strong sales boom. Not until the new CEO was appointed, in 2014, did the company start to create a real corporate strategy. Now the strategy is ready and it was called “a diamond” by the interviewee. “Now we finally have a real strategy with goals, a clear vision, and understanding about the development of the industry in the future” (CTO, 2015). Company G has started their way to implement the strategy, and they are continuously updating it when some goals have been accomplished. The biggest change in the business model of Company G has been developing a comprehensive service portfolio. In the early years, the company only sold systems until they realized that they should sell solutions instead. During the last years, they have developed a solution which covers the system and all kinds of complementary services. Annual services, such as analytic services and reports, have also generated a growing amount recurring revenue for the company. Today, the solutions of Company G do not only serve the people on ships, but the information generated by their solutions is useful for the whole customer organization including the management. Through ambitious work, good networks, and solid strategy the company has lately become the trailblazer of its industry, and its moves are followed by many giant companies around the globe.

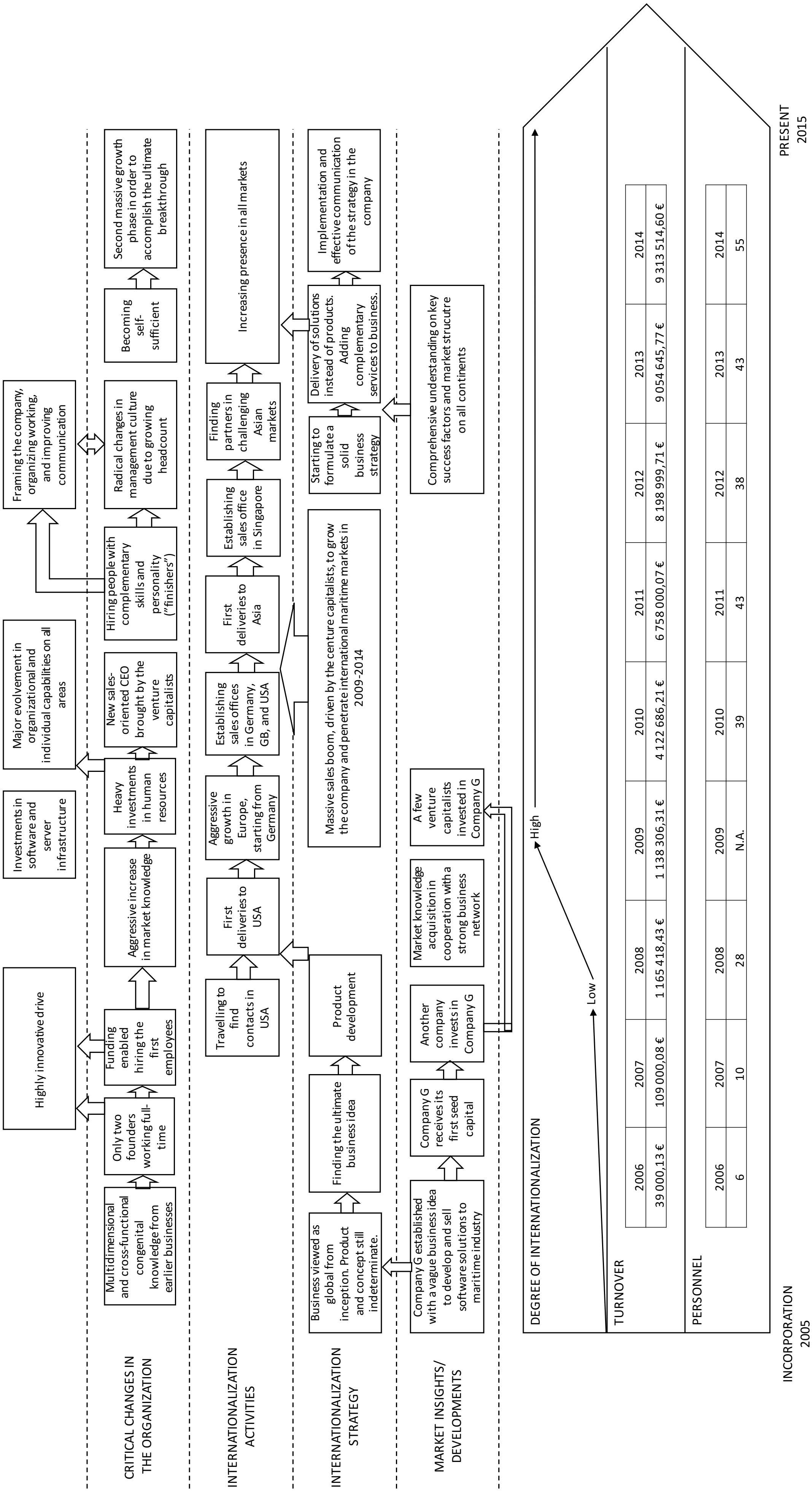


Figure 17. Initial internationalization and internal changes in Company G

8.4 PERFORMANCE IMPACT

Changes inside organizations can caused by various reasons, such as performance, crisis, new technologies, opportunities or threats in the market, or external or internal pressure. These changes can be proactive and planned well before or changes that are done reactively in order to respond to some specific challenge. No matter what has caused the changes, they usually have an impact on the performance of the company. Below, the most critical changes for the case companies' performance will be shortly discussed.

Company A has made several acquisitions during their existence in order to strengthen their organization and its market position. According to the interviewee (CEO A, 2015), these acquisitions have enabled faster growth in international markets and brought new resources, capabilities, products, and turnover for the company. Raising capital to fund the acquisitions has been a critical incident for the company and it has surely had positive performance implications. Company A has learned to recognize which business areas are offering the best opportunities for them to grow and develop. Recognizing this kind of industries, markets, and customers, and adapting own organization to their needs, has been in a critical role in their international performance. According to the interviewee (CEO A, 2015), "Being awake and testing our limits on business areas, where a lot is going on, has been important for our international performance. We are in a world where one can not get stuck in its place, but we need to be flexible and make constant decisions in order to succeed."

Company B's interviewee saw that they have become more comprehensively aware of the business in which they operate. "We have not passed valuable opportunities, because we would have thought that some certain thing does not belong to our focus, but we have been able to think more comprehensively to discover all the multiple things that we can really accomplish with our capabilities" (CEO B, 2015). Being more open, positive, and confident than Finnish people generally are, the company has kept multiple doors open. According to the interviewee, this has improved their performance in accomplishing new things, delivering customer value, and acquiring new accounts. Company B has been able to combine their know-how to improve performance on all areas. Evolvement from a small start-up to an established company was also seen critical. The company has used its limited financial resources to gather as much references and accounts as possible, and positive cash flow has no been the primary goal, which has been critical for today's success and performance.

In **Company C**, internationalization started too aggressively and rapidly, which almost drove the company go bankrupt. "We dedicated too much resources to markets which were not ready for our technology" (CEO C, 2015). Due to the partly unsuccessful internationalization, Company C had to change its focus and adapt to the market needs rapidly. The interviewee mentioned that this has been truly essential for them to continue the business and improve performance. As mentioned, the company cut out part of its business, and this was essential to guarantee sufficiency of their financial resources. After these difficulties, creating an excellent team spirit has encouraged the people to continue and improved performance of the company.

Company D has created a series of new technologies, which were seen as a requirement for their existence. Company D has also experienced major improvements and changes in its ability to commercialize its technologies. It was seen an extremely important change that the company learned to communicate and deliver its concept to customers in an efficient manner. Sales skills have improved a lot in Company D, which have had direct impact on their performance. These things were seen to have been accomplished by learning from mistakes and succeeding. Having limited financial resources and lack of private equity have been negative factors for performance of the company. This has caused their projects to diminish and their performance has been tested seriously.

Company E's product portfolio has gone through a major evolution during the years, which has enabled them to serve their customers more comprehensively. The company has acquired hundreds of reference customers who are using their products. This has made it easier to open new doors and enter new markets, as they now have practical evidence about their products. According to the interviewee (CEO E, 2015), these things have had a critical impact on their performance. On the other hand, being able to have external financing has enabled the company to develop these solutions for the customers, who integrate them to their own products and distribute them globally. As the company has been able to create a global customer portfolio, their performance has improved and they have gained income financing to develop the organization further.

In **Company F**, understanding the concept of customer value and following the most promising markets has been critical for their performance. According to the interviewee (CEO F, 2015), “Everything we do is driven by sales, and considering our sales arguments, finding the customers who really need our products, and creating significant value for them have been major factors for our performance”. He added, that “If we can not justify customer’s payback for buying our product, the sales negotiation tends to end at that very same moment” (CEO F, 2015). From the performance point of view, it is extremely important to change in a way that we find answers to these questions.

In **Company G**, the venture capitalists’ investments were seen as a major turning point in the company, and growth would not have occurred without those. After growing to 10 million euros in revenue, the company has executed a structural change in the organization in order to be able to serve its customers more efficiently. They earlier had resource pools from which they could dedicate people into different projects. Now they have created two separate teams, one for cruise ship customers and one for cargo ship customers. Each team is now able to offer the whole solution from beginning to end for the customer. This has significantly improved the performance to respond to their customers’ needs more comprehensively. A structural change was also done in product development, where teams were changed from competence teams (horizontal) to project teams (vertical). This enables one team to handle the whole product development process. Now that the structural changes have been done, it could be once again time to raise more capital and start a second growth phase. However, the company has become neutral regarding its cash flow, and no more external investments are needed. The interviewee (CTO, 2015) stated, that “Everything is about money, and when you have money remarkable things will happen”. As a conclusion, Company G has been skillful using its limited resources to grow and develop the company. This has improved their performance year after year, making them self-sufficient and ready for the final breakthrough.

8.5 CROSS-CASE ANALYSIS

Considering all the seven case companies, they have clear differences and similarities. As the case narratives demonstrate, companies following the same pathway share a number of similar critical incidents. However, while similarities occur in the cases, all of them portray some unique paths of critical incidents, which differentiates them from one another. All of the case companies are internationalized and foreign sales generate from 85% to 98% of their annual turnover. Two of the companies can be categorized as Multinational Traders, three as Geographically Focused Start-ups, and two as Global Start-ups, as illustrated in table 7 (see Oviatt & McDougall, 1994). Even though the companies have variation in the degree of internationalization, all of the companies are committed to foreign growth. All companies saw further internationalization as the only way to increase sales and gain growth in the future. A cross-case comparison of the internal changes in the companies is presented below, and it will clarify whether the changes were similar in firms that followed the same pathway.

Two of the companies were categorizes as Multinational Traders. These companies were Company C and Company F. Company C internationalized during its first year and Company F not until 2,5 years from inception. Both companies have entered an intermediate number of countries (25), and 95-97% of their annual turnover is generated from abroad. Both companies' FATA rate remained low, and their products and/or services were sold through their established international distribution networks. This is typical for Multinational Traders, as their customer base is wide and it is not easy to serve all the customers personally, but distributors and resellers are needed to deliver the products and/or services. In Multinational Traders, the changes occurred quite differently from one another. However, the companies followed the change framework (figure 18.) in the phases. These companies had strong technical background, and acquisition of business knowledge was seen a major enabler of growth and establishing the business. Having external funding enabled both of the companies to start business seriously. In both companies, recruitments were needed to grow the company, which had created a need for more efficient organization of people. Maintaining harmony among the workforce was seen important cultural aspect in both companies, even though Company C had faced challenges in that. The strategic alignment had evolved quite differently in the companies, as Company C had faced a need to divest part of the business in order to avoid going bankrupt.

Three companies were categorized as Geographically Focused Start-ups. These companies were Company B, Company D, and Company G. First international sales were generated from under one year to two years from inception, depending on the length of and advancement in the pre-incorporation phase. Two of the companies had established own sales subsidiaries and operated as subcontractors, but one of the companies had a totally different business and it only operated through international projects. All of these companies had entered a low number of countries (10-13), but still 85-95% of their annual turnover is generated from abroad. Company G had high FATA rate, but in Company B and Company D FATA remained intermediate. As the companies are geographically focused, their customer base is smaller and it is possible to offer customers more customized solutions. It is also easier to establish sales subsidiaries into a limited number of geographic locations. All of the companies had lack of business expertise, and acquiring commercial capabilities was seen to have enabled understanding the market factors and establishing the business model. Growth had created a need for recruitments in all companies, which had further forced the management to organize people in a growing manner. It seems that the common thing for Geographically Focused Start-ups is the limited number of countries and customers, which makes it possible to deliver more customized solutions through more customized business models.

Two of the companies were categorized as Global Start-ups. These companies were Company A and Company E. Company A internationalized during its first year and Company E not until 2 years from inception. Company A has entered high amount of countries (50), whereas Company E has entered intermediate number of countries (20). 95-98% of their annual turnover is generated from abroad. Both companies' FATA rate was on intermediate level, and their products and/or services were sold through their established international distribution networks. Company A had also established own sales subsidiaries. These companies have experienced some similar but also different changes. Funding has been essential for both companies, but Company A has needed more funding as it has acquired three businesses on the way. Innovative drive has driven both companies and they have been able to remain innovativeness. Building a wider business network around them has accelerated their internationalization, and enabled them to enter new markets. Both companies have faced a need to organize people when their headcount has grown. In addition, both of the companies saw that they have acquired plenty of understanding on the key success factors of their markets, which has enabled them to develop their strategies and business models.

As a conclusion, it is argued that companies following the same internationalization pathway have similar kinds of challenges and opportunities. However, changes occurring in the companies are still dependent on the intensity of the pre-incorporation phase, resource base and capabilities of the companies. Based on the internationalization pathway followed by a certain company, it can not be determined that certain types of internal changes have occurred. Internationalization can be divided into phases (see figure 18.) and changes in each phase are similar regardless of the pathway. The internationalization pathway, however, does not rule the nature of changes inside the companies during initial internationalization.

9. CONCLUSIONS AND DISCUSSION

This chapter will conclude the findings of the empirical study and compare the findings to the results presented in the earlier research and literature. This chapter will present concise answers to the research questions, and this discussion will take place in the theoretical implications. The managerial implications will include findings that business managers can learn and utilize in similar kind of internationalization processes that the case firms had gone through. The validity and reliability of the research will be critically analyzed after discussing the results. This will also provide help for future research on this topic, as degenerative aspects are identified and those can be eliminated by making better decisions in planning phase. Finally, limitations of this study will be discussed and potential ideas for future research will be presented.

INV was earlier defined as "a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (Oviatt & McDougall 1994, 49). Oviatt and McDougall (1994) categorized INVs into four types of organizations; Export/Import Start-up, Multinational Trader, Geographically Focused Start-up, and Global Start-up. In this research, the data was gathered from Tekes' Young and Innovative Companies programme, and it turned out to be difficult to find Export/Import Start-ups from the universe. Today, most start-ups and INVs are characterized by strong drive to become international, and once started, internationalization appears rather aggressive. I would like to pose a question, whether there actually are INVs that can be categorized as Import/Export Start-ups? This question relates especially to firms that have passed initial internationalization and became adolescent or mature. There is a contradiction between the definition of INVs and Oviatt's and McDougall's (1994) four types of INVs. Firstly, Oviatt and McDougall (1994) argue that INVs "seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries". However, Export/Import Start-ups do not operate in multiple countries and they only coordinate limited activities across countries. Secondly, companies that end up only importing and/or exporting products and/or services are mostly mature. It is extremely difficult to find INVs that would be satisfied with only import and/or export activities today. Could it be that many of the importers and/or exporters can be categorized as born-again globals? These companies have been well established in their domestic markets and they have not had great motivation to internationalize. For different reasons, these companies have suddenly embraced rapid and dedicated internationalization. (Bell et al., 2001) For this reason, Export/Import Start-ups were underrepresented in Tekes' program and the universe from which the the sampling was taken.

9.1 THEORETICAL IMPLICATIONS

In the introduction chapter, the aim of the research was defined as to find out how international new ventures change internally during initial internationalization. To accomplish the aim of the research, a main research question and three sub questions were defined. The main research question was *"How international new ventures change internally during initial internationalization?"* The three supportive sub questions were: *1) "What are the key drivers of internal change in INVs during their initial internationalization, and what is their impact on internationalization?", 2) "How does the change process of INVs evolve during initial internationalization?", and 3) "How have the internal changes affected the performance of the firms?"*

These issues were studied in the empirical part of the research by conducting semi-structured interviews for seven key decision makers of different INV companies. The main research question was approached by dividing intraorganizational environment of INVs into five dimensions; culture, resources, capabilities, strategic management, and outputs. Change drivers, both internal and external, were addressed during the interviews, and internal changes' proactivity and/or reactivity were observed based on the interviewees' answers. Not all changes can be found out through interviews, but the most critical ones were examined to create a comprehensive image of each company. The interviewees were also asked to describe the most critical changes for their international performance.

It was challenging to develop a theory base that would explain the studied phenomenon comprehensively. However, considering the empirical findings, the theory base was chosen successfully and the theories and models are able to explain the basis of the phenomenon well. Based on the empirical findings INVs have clear stages in their internationalization, and Uppsala Model provided some explanation for that. It was also clearly visible that INVs develop and commit more resources abroad as their foreign market knowledge increases. The stages for INV internationalization are illustrated later in a framework. Organizational performance and sustainable competitive advantage were mostly generated from valuable, rare, inimitable, and non-substitutable resources, as suggested by the RBV. As explained, capabilities are patterns of skills to deploy resources to perform tasks or activities. Organizational learning proved to have had a remarkable impact on developing organizational capabilities in the case companies, which enabled companies to fully utilize their limited resources in an effective manner.

The first sub question was *"What are the key drivers of internal change in INVs during their initial internationalization, and what is their impact on internationalization?".* The change drivers were divided into external and internal, external deriving from the business environment and internal from the company itself. All of the companies saw the market and customers as the most important external change driver. Listening to customers and being aware of the market trends have been important for the companies in order to adapt their own operations to the customers' needs. Three of the companies saw their industry as highly dynamic in nature. This has caused a need to be flexible and proactive in decision making in order to keep up with the evolvement of the external environment. Two of the companies operated in highly regulated industries (pharmaceutical industry and emissions). Regulation was seen as a negative change driver in the pharmaceutical industry, reducing the speed of market development and limiting the opportunities of the company to access the markets with novel technologies. The company operating in emission control business saw tightening emission legislation as a positive change driver for them. As environmental legislation becomes tighter and people are more concerned about their own habitat, it will grow their customer base and open new opportunities. In a few cases, the investors have had a strong impact on the development of the company. Investors have invested capital in the companies and required certain changes and objectives for the business. One of the companies saw that their business network has been a positive change driver and trailblazer for their business. Close cooperation with the business network has brought valuable market insights into the company and enabled them to develop the concept and organization.

All of the case companies were characterized with some entrepreneurial mindset, drive, or vision, which had guided their doing from the very first day. The companies had a strong belief in their own products and/or services and they had recognized the business potential. Trust in own doing, added with entrepreneurial mindset, had driven the development and changes in the companies. Entrepreneurial mindset is characterized by tolerance for risk taking, and all the companies can be seen to have taken risks when developing the organizations readiness for internationalization, even though they have not had any customers yet in the beginning. Of course, strong drive and passion for running the business has been supported by learning and internalizing market knowledge. Together, these factors have driven changes that have been made based on the best available knowledge and entrepreneurs' intuition. The change drivers in the case companies are similar to those characteristics described in the INV Theory. In addition, the knowledge acquisition and learning appeared as change drivers. Uppsala Model and Organizational Learning Theory explain these factors, and by learning and gaining more knowledge it is possible to make new moves and commit more resources to foreign markets.

The second sub question was "How does the change process of INVs evolve during initial internationalization?". This question will be answered by developing a framework illustrating INV change process during initial internationalization (see figure 18.). Based on the empirical analysis, INVs' change process during initial internationalization can be divided into four phases; pre-incorporation phase, product development phase, internationalization and growth phase, and maturation phase. Gabrielsson et al. (2008) suggested that BGs internationalization progresses through three phases; introduction and initial launch phase, growth and resource accumulation phase, and break-out phase. This categorization includes somewhat similar phases as the framework presented here. However, this framework illustrates the internal changes and connections to the external environment. External environment is involved in the framework to illustrate what kind of support and resources INVs were proven to acquire from outside in each phase.

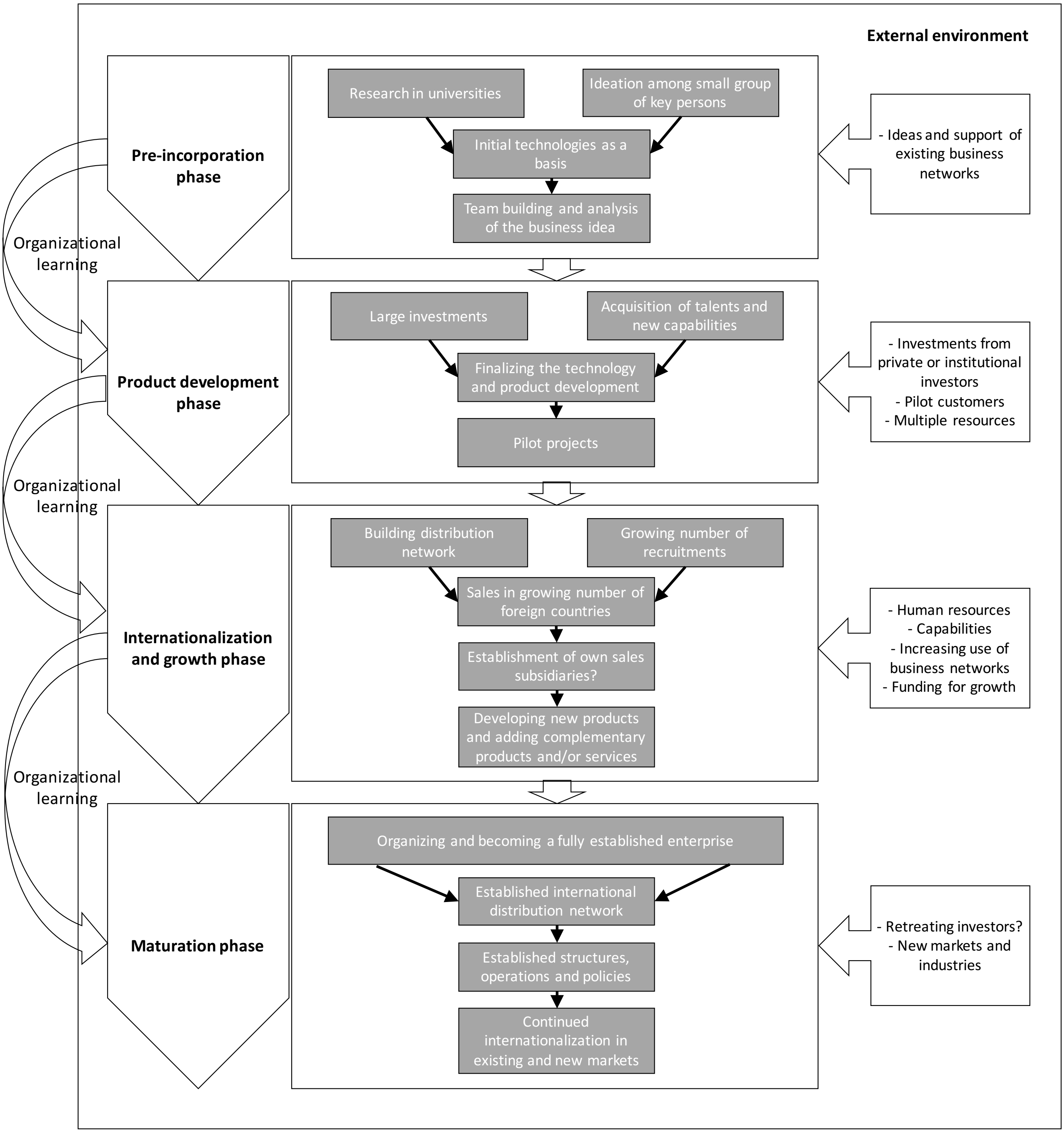


Figure 18. Framework of INVs' internal change process during initial internationalization

The third sub question was "How have the internal changes affected the performance of the firms?". The interviewees were asked to mention the most critical changes considering the performance of the company. The interviewees were free to express their own consideration when answering this open-ended question. There were several changes that came up repeatedly in all cases. Raising capital before and during early internationalization was seen highly critical incident for the performance and internationalization of the companies. Funding was seen as an enabler of product development and international growth as these operations commit high amounts of financial resources. It was clearly visible in the data, that companies with lack of capital had been struggling with internationalization and their growth had been more gradual.

Another common change in the case companies was more philosophical by nature. It was seen important that the companies have been able to develop from small start-ups into fully established enterprises with structures, operations, and policies. We need to go deeper into this change to understand its background and sources. As the companies have started to gain more and more customers and their international sales have grown significantly, it has been essential to develop the organization and organize people to work efficiently. Growing headcounts, with growing international operations, in the companies has definitely driven them to organize people and create organizational structures. Established operations and policies may have been essential in order to sign customer relationships, as many of the case companies were delivering solutions to large MNEs.

As explained earlier, all of the companies had rather limited business knowledge at the moment of incorporation. Learning to commercialize and sell products, services, and solutions was seen highly critical for organizational performance in all companies. It also came up that acquiring market knowledge, and understanding the market structures and key success factors, had enabled the companies to better determine their strategic alignment. This had also had impact on the business models of companies, as they were more aware of customers' preferences and how to create value in the markets.

Other critical changes that were mentioned were for example acquiring customer references, building international customer base, and finding international customers. Only one of the companies had executed acquisitions. However, this company had been able to evolve into a global start-up, and it had established its position in the industry. One of the companies had experienced too rapid internationalization, which almost drew the company to go bankrupt. Divesting part of the business was seen a critical change in order to survive and continue the business, which had drifted into a bad situation due to lack of financial resources.

To answer the main research question, all the aforementioned dimensions of organization's internal environment will be gone through. All the case companies had clearly limited resources, especially in the beginning, but by using their business networks it was possible for them to acquire resources from outside. As the Network Approach (Johanson & Mattsson, 1988) suggests, all resources do not have to be owned by the company, but some of them can be accessed through business networks. The better the network of the case company was, the more there were positive network effects on their internationalization and initial growth. Companies with limited networks spent more time on finding partners and distributors, as well as suffered from lack of financial investments. As recorgnized by Arenius (2002), Andersson and Wictor (2003), Sharma and Blomstermo (2003b), and Autio (2005), networks generatate social capital for INVs, which enables mobilization of entrepreneurial firms. This view is agreed based on the findings of this research.

All the case companies had a strong technical background and many companies' roots were in academic research in Finnish universities. However, all of the companies suffered from lack of business expertise and, as a consequence, they were not fully aware of the markets and key success factors of the industry during the early years. All companies had managed to have financing for the business, either private equity or loan from public agencies. It turned out that the companies with the clearest and most solid vision and business idea were able to acquire the most private equity. Furthermore, the companies with private investors had experienced the most radical growth internationalization. Business networks also seemed to have played a role in finding funding for the business.

Learning and gaining knowledge of the resources and strategies through business networks can support INVs internationalization. It is, however, important to have such proactivity in the internationalization process that the company knows what type of resources and strategies are useful in the next phase. Orderliness in each phases of INV internationalization has major impact on success in the next phases. This finding is similar to what Bloodgood (2006) has noted in new ventures.

Cultural and behavioral changes of INVs during initial internationalization have not been widely studied earlier. However, cultural dimension of the internal environment proved to have experienced major changes during initial internationalization. All of the case companies started as start-up-like organizations with varying objectives for internationalization. What illustrates all the companies is that they evolved from a small start-up into a fully established company during initial internationalization. In all companies, innovative and entrepreneurial culture were present in the beginning. As the companies started to grow, they faced a need to acquire more employees. It was mentioned by many of the interviewees that employing approximately 10 people was the first critical point when their management skills were truly tested. Management and organization of people were needed to maintain performance and effective communication on all levels of the organization. This required managerial skills and tied resources from other operations. Communicating the strategy and responsibilities for the people were seen highly important by the interviewees. As the companies grew and hired more employees, new people brought supplementary skills and capabilities to the companies, but also confrontation occurred with the new recruitments. Flexibility of management and effective communication were seen important to solve these challenges. In order to manage the growing headcounts, middle managers were appointed in many companies. Only one of the case companies (Company A) had acquired other businesses to strengthen its position in the market. Acquisitions were seen challenging for organizational culture in Company A, as people with different backgrounds and cultures were brought under the same roof (CEO A, 2015). According to CEO A (2015), best practices from both parties were utilized and peoples' working was not changed too much to avoid resistance for change. By the final years of initial internationalization, all the companies had developed into established companies with their own policies and structures. However, growth had changed the companies into more hierarchical and formal organizations that need to balance between innovativeness and sales efforts. All the companies had remained the same values and norms despite internationalization, but less resources could be dedicated to innovativeness than in the early years.

Outputs were not studied directly in this research, but they were linked to the strategic management as there is clearly a link between the business model and service and/or product portfolio. Product decisions can be seen as external changes (see Nummela 2004; Nummela et al., 2006), and this is why closer examination on products and/or services was not done. An overview of the evolvement of product and/or service decisions was linked to the strategic management in order to find out how the decisions had affected companies' strategic decisions. Most of the companies had gone through a product development phase in the first years of their existence. The product and/or service portfolio took shape during this phase, but the final product and/or service was not necessarily the same that was planned at the moment of incorporation.

Learning and gaining market insights had changed the business idea from the original in many cases. Most of the companies did not want to limit their business opportunities by focusing too much on certain business. Doors were kept open and the outputs, as well as the business model, evolved during the whole initial internationalization. In the final years of initial internationalization, the business model was established in all of the companies and some focusing occurred. Some companies had faced a need to eliminate some elements of their business that had proven to be unsuccessful. One of the companies (Company C) had so severe lack of resources that they needed to cut out a major part of their business to be able to continue. All of the companies started internationalization with a certain product or solution that was delivered to international customers during the first 2,5 years from inception. Later, as the internationalization proceeded, more products were developed utilizing the scalable technologies and resources. In addition, all companies had added some complementary services into their business models in order to be able to serve their customers more comprehensively. However, these complementary services were generally not established until the final years of initial internationalization.

The major theoretical contribution of this research is achieved by explaining and illustrating the internal change process of INVs during initial internationalization. This is the first time that the internal change process during initial internationalization is addressed in such a detailed manner. This research also defines the type of changes in each phase of change process, which makes it easier to see the difference between INVs and more traditional type of companies. INV firms have certain characteristics, as explained earlier, that enable them to internationalize rapidly regardless their limited resources. This rapid internationalization occurs in stages, as noted by Hashai and Almor (2004), and Madsen and Servais (1997), but less regularity is related to the duration and existence of the stages. INV firms face internal changes, as any other company, but the changes occur more suddenly and they are experienced more rapidly. This, in turn, requires dynamicity and flexibility from the company in order to cope with the rapidly changing internal and external environments. Being unable to react and change the internal organization may be fateful for INV firms. In order to change internally in an efficient manner, it is essential for INVs to have seamless interaction with its external environment. To interact efficiently with the external environment, the company must have knowledge about international markets and operations, and it must be efficient in learning more knowledge. Penrose (1966) saw growth resulting from a firm's entrepreneurial and managerial knowledge capacities. This research emphasizes the importance of learning and knowledge-based views for internationalization, as noted earlier by Barkema and Vermeulen (1998), and Eriksson et al. (1997). Another vital enabler of efficient interaction with the external environment are company’s relations and positions in the business networks.

9.2 MANAGERIAL IMPLICATIONS

Focusing is something that might need to be re-evaluated when it comes to INVs and start-ups. In many case companies, an interesting aspect related to focusing came to the fore. Many of the companies mentioned that they have not focused too strictly on certain industries, markets, products, or businesses. Traditionally, focusing has been seen as an important decision in order to be able to compete in the selected arena. Many interviewees saw focusing as a restrictive negative issue, which may actually close some doors and make the company to ignore some valuable opportunities. Especially in the beginning, most of the companies had not focused on any specific markets, but they had kept the doors open for the global market. By doing this, many companies had found their core business and changed the organization into a new direction. Some level of focusing, however, occurred in the end of initial internationalization when the companies' businesses were already functioning with a full speed. More undefined focus, compared to the traditional understanding, may have its roots in the technological revolution that we are going through. As technologies evolve and become more scalable, the same technology can be used for multiple purposes in totally different markets and industries. This is dispelling the market boundaries, and it likely that markets will change their nature and existence in the future.

Almost all of the case companies had a digital aspect in their business, either in their products, services or business model. Digital companies "are creating a hyperconnected world where companies, consumers and even everyday objects have instant capabilities to act and interact with each other digitally across the globe" (Accenture, 2015). These digital companies stretch their focus by accessing a broad array of new "digital businesses, digital customers, and even digital devices at the edge of their networks" (Accenture, 2015). Based on the collected data, these visions about the future are highly agreed and digitalization is believed to stretch and dispel the market boundaries. According to Accenture (2015), "Leaders eager to drive change are using this broader digital ecosystem to place bets on a grand scale. These forward-thinking companies are looking to shape entire markets and change the way we work and live."

In all of the case companies, the core competencies were related to technical know-how and strong understanding on that side. All companies were lacking business knowledge, especially in the beginning, but sooner or later they were able to acquire business people to guide the business. In order to speed up early internationalization and develop a functional business model from the very beginning, it would be important to have people with this kind of experience and expertise in the company. Having business knowledge from the very beginning would most likely save some resources as they could be used more efficiently.

Organizational learning was mostly seen as the major source of new capabilities in the case companies. Even though resources were acquired from outside by recruiting and through networks, learning was seen to have had a more remarkable impact on the companies' resources and capabilities. Huber (1991) argued that changes that are consequences of learning do not necessarily have to be behavioral. Learning may also result in new insights and awareness that doesn't cause behavioral changes. Thus, being consciously aware of the differences and alternatives, and choosing only one of the alternatives, can be seen as a crucial element of learning. (Huber, 1991) This is highly agreed based on what was told by the interviewees during the interviews. New insights about markets and business in general were highly essential for all the case companies, and learning these things made it possible for the companies to perform better in their initial internationalization. Knowledge acquisition in the case companies occurred through all the five sub processes presented by Huber (1991); congenital learning, experiential learning, vicarious learning, grafting, and searching or noticing. The constructs of organizational learning (knowledge acquisition, information distribution, information interpretation, and organizational memory) were all present in INVs, but they may not be as formal as in well established MNEs. More flexible and coincidental learning processes seem to work well for INV-type of companies with dynamic characteristics and flexibility. However, more research is needed on learning in INV context to make any further conclusions. Only one of the companies, which happened to be the most successful, admitted that acquisition of external resources has been highly important. The interviewee explained that it is limited how much you can lever your existing resources through learning, and in order to grow they have faced a need to recruit loads of people (CTO, 2015). One of the most common change drivers for the companies was the market and customers in it. As mentioned, however, learning the market characteristics and acquiring market knowledge were seen as critical incidents in all case companies.

Interesting views emerged when the interviewees were asked about the meaning of initial internationalization and its consequences. Many of the interviewees explained how it is essential to become aware of the international customer base. This was followed by recognizing the need for having resources and readiness to operate internationally. Having international mindset and understanding the nature of the business were seen as cornerstones for business that is international from inception.

It seems that funding is in a remarkably important role in the speed of internationalization and growth of the company. “Everything is about money, and when you have money remarkable things will happen” (CTO, 2015). Skillful use of different funding instruments can be seen as a driver for growth. Growth with external funding, however, requires efficient use of resources and systematical acquisition of new resources. It is extremely difficult to grow with only income financing, and audacious use of external funding instruments is suggested if there is any tolerance for risk taking.

9.3 RELIABILITY AND VALIDITY

Reliability of a research “refers to the extent to which the data collection techniques or analysis procedures will yield consistent findings” (Saunders et al., 2009). Validity, on the other hand, “is concerned with whether the findings are really about what they appear to be about” (Saunders et al., 2009). According to Robson (2002), there are four threats to reliability; subject or participant error, subject or participant bias, observer error, and observer bias. As the time span that is studied is several years long, subject or participant errors are not likely. All of the interviewees were founders of their companies and they worked either as a CEO or CTO at the moment of interview. These factors reduce the risk of subject or participant error, as it is unlikely that their answers are affected by other people. However, the long time span that is studied may have an effect on the interviewees capability to remember history, causing memory biases. In order to avoid memory biases, the interview questions were sent to the interviewees in good time, so that they had time to prepare for the interview. Observer errors were avoided so that one single person conducted all the interviews during a short time span. Observer biases were also avoided by using the same interviewer in all cases. In addition, the interviews were recorded and transcribed into a written format soon after conducting them.

According to Eisenhardt (1989), there is no generally accepted set of guidelines for assessing case studies. There are, however, several criteria that seem appropriate (Eisenhardt, 1989). The concepts, framework, or propositions that emerge form the research process should be “good theory”, and the aim of the process is to develop or begin developing theory. According to Pfeffer (1982), good theory is parsimonious, logically coherent, and testable. In addition, in a strong theory-building study the theory emerges at the end of the study. It is also important to assess the strength of the research method and the evidence grounding the theory. A strong theory-building research should also result in new insights, and not only replicate past theory. (Eisenhardt, 1989)

The research methodology is briefly discussed in the introduction, and in more detail in the beginning of the empirical part. The methods used in this research are generally accepted as scientific methods. All of the case companies were selected using the same criteria, and they were randomly selected from phase 3 and champions of Tekes’ Young Innovative Company funding programme. Saturation was used as a determining factor for the number of case companies, and a couple of companies were interviewed after saturation had been noted to be high. Analysis of each case company was conducted in the same way, using the same determining factors. The results were presented concisely by combining the findings of the within-case analyses. The research is conducted with respect to the scientific method, and all the steps of the scientific method are met. The theory developed in this research is parsimonious, logically coherent, and testable. The results are clearly presented and concluded, and visualization is used to help illustrating the results. As mentioned, testing of the results in the future research would be highly valuable and appreciated. By designing the research in a way that all the threats for reliability can be avoided, in addition to suitable research methods, it is argued that this research has high reliability.

This research is one of the first attempts to find out how INVs change internally during initial internationalization. There is not much evidence about this specific phenomenon, thus it is difficult to assess the reliability of this research. It would be thus highly recommended that the same topic is studied more in the future. It was found out from the data that INV firms' internationalization and related changes occur in phases or stages, likewise traditionally understood in MNE literature (see Johanson & Vahlne, 1977). Even though stages models have been said to be unsuitable for explaining INV internationalization, this view is partially disagreed based on the results of this study. Changes and internationalization may, however, be much faster than gradual internationalization of MNEs. The framework of INVs' internal changes, created in this research, could be tested in the future, and it could be used as a hypothesis about the evolvement of INVs' internal change process during initial internationalization. Having more research and evidence on the phenomenon in the future would finally determine the validity of the findings of this research. However, the cases are selected carefully and all the interviewees are independent. No interviewees dropped out during the study and none of the interviewees required signing a non-disclosure agreement. This possibility was discussed with all the interviewees, but they believed that information revealed in the interviews will not harm their business. As the research is done independently and it is not an assignment for any specific company, this will increase the validity as well.

9.4 LIMITATIONS AND FUTURE RESEARCH

This research focused on biotech and cleantech INVs, but different kind of results could have appeared in other industries. The results of this study are supposed to be generalizable in biotech and cleantech industries as mentioned before, but more research is needed to confirm this assumption. It would be interesting to see if changes during initial internationalization are similar or different in other industries. This research did not involve any import/export start-ups (Oviatt & McDougall, 1994), because it seems like that type of companies did not exist in the universe. That might be the case in INVs that operate in biotech and cleantech industries, but it would be interesting to find out whether import/export start-ups appear in other industries, and how their internationalization and related changes differ from other types of companies. It is also possible that import/export start-ups would have appeared in earlier phases of Tekes' programme, but those companies would not have met the criteria of the study. One interesting topic for the future would be focusing only on the most successful INVs, in order to map the best practices of INVs' initial internationalization and internal organization. This study was conducted in one year and the actual data was collected during one month. It would be of great value to have more longitudinal research on this same topic, as it would reduce the risk of memory biases and provide even more detailed data and results.

In the future, non-profit organizations could be studied to understand the phenomenon in the context of social entrepreneurship. Also, other theories explaining change could be applied in order to have parallel research with which to compare the results. This paper is one of the first attempts to study internal changes of INVs, and no all-encompassing conclusions can be made based on this study. More research is needed to find out whether the results of this study repeat and can be generalized in other INV firms as well. Turcan and Juho (2014) suggested that more research on the post-start-up phase of INVs is still needed, and their suggestion is strongly agreed. Furthermore, Kuivalainen et al. (2012) suggested that there is a need for more research on the internal change in the rapidly and early internationalizing firms, which is also agreed based on this research. When studying these suggested topics, Nummela (2004), Nummela et al. (2006), and this research can be used as a baseline.

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APPENDICES

Appendix 1. Interview Questions

1. Describe the pre-incorporation phase of your company.
    a. What has been the resource base at the moment of incorporation? (Congenital knowledge)
    b. How was the company founded?
    c. At which point did you become international?
    d. What have been the steps in your internationalization?

2. How would you define the
    a. time
    b. scale, and
    c. scope of your internationalization?

3. What was the original competitive advantage of your company?

4. Has your organization changed during initial internationalization?

5. What kind of changes have occurred?

6. What has driven the changes and how?
    a. External drivers
    b. Internal drivers
    c. Changes are caused by internationalization
    d. Internationalization is caused by changes

7. What has been the effect of learning after the incorporation?
    a. Have you been able to acquire resources, minimizing the need for learning, or
    b. have you been able to lever your existing resources?

8. How has the competitive advantage of your company changed till now?

9. How have the changes effected on the performance of the firm?
    a. Is there any change that you would rate more critical for your international performance than other changes?
        i. Why?