



High-tech vs. Low-tech companies -

Variations in internationalisation process

Kristianstad University

The Department of Business Studies

FEC685 Bachelor Dissertation

International Business Program

December 2005

Tutors: Håkan Pihl

Viveca Fjelkner

Authors: Johan Atmer

Pontus Thagesson

Foreword

Kristianstad December 2005

During our education as international business students we have gained both knowledge and competence, mainly in the field of international business. Working with this dissertation has thought us how to implement these factors in a real life situation. We have learned both how to work as a group and also how to be critical, analytic and innovative.

We would like to express our sincere gratitude to our tutor Håkan Phil. Without his guidance this dissertation would have been an almost impossible assignment.

Furthermore we would like to give a special thanks to our English teacher Viveca Fjelkner, who have supported and helped us throughout the process.

A thought of gratitude is sent to all of the respondents in our research. We thank you for taking the time to make this dissertation possible.

Johan Atmer

Pontus Thagesson

Abstract

The internationalisation process of companies has for long been popular to observe among researchers. Although many of the developed theories do explain this process rather accurately, we found them too general in their definition of what sorts of companies they apply to. In this dissertation we compared the internationalisation process in high-tech companies to low-tech companies in an attempt to observe differences or similarities. Was it really possible that the existing theories or at least some of them could explain this process in two so clearly different business sectors? Our conclusion is that they could not. The research of this dissertation found main differences between high-tech and low-tech companies in country focus, network-settings, and what phase their products were in at the time of their internationalisation process. As a by-product we also observed the importance of personal experience in the choice of market, which seems to be closely linked to small companies, that is thus both in high-tech and in low-tech companies.

Table of content

<u>1. INTRODUCTION</u>	<u>1</u>
1.1 Background	1
1.2 Problem definition	3
1.3 Purpose	3
1.4 Research questions	3
1.5 Research objectives	4
1.6 Limitation	4
1.7 Outline	4
<u>2. METHOD</u>	<u>6</u>
2.1 Research plan	6
2.2 Data collection	6
2.3 Qualitative method	7
2.4 Primary and secondary data	7
2.5 Avoiding mistakes	8
<u>3. THEORETICAL FRAMEWORK</u>	<u>9</u>
3.1 Introduction to internationalisation	9
3.2 The Uppsala internationalisation model	11
3.2.1 Marquardt's – an experiment on the Uppsala model	13
3.2.2 Explanatory value of the Uppsala model	13
3.2.3 Hypothesis 1 – The Uppsala model	14
3.2.4 Hypothesis 2 – The Uppsala model	14

3.3 The Network theory	15
3.3.1 Explanatory value of the Network model	18
3.3.2 Hypothesis 3 – The Network theory	19
3.3.3 Hypothesis 4 – The Network theory	19
3.4 Product life cycle theory	20
3.4.1 The international Product life cycle	21
3.4.2 Explanatory value of the Product life cycle	24
3.4.3 Hypothesis – The Product life cycle	24
3.5 Comparison of theories	25
3.6 Complementary theories of internationalisation	26
3.6.1 Born Globals	26
3.6.2 First mover advantage	26
3.6.3 Transaction cost theory	28
3.6.4 Eclectic paradigm (OLI)	29
3.7 Definitions of a small company	30
3.8 Characteristics of High-tech	31
3.9 Characteristics of Low-tech	32

4. Empirical method **33**

4.1 Selecting companies	33
4.2 Selecting respondents	33
4.3 Interview	33
4.4 Design of questionnaire	34
4.4.1 Research questions	34
4.5 Validity	36
4.6 Reliability	36
4.7 Generalisability	36

5.1 Low-tech companies	38
5.1.1 Smederöd Trading AB	39
5.1.1.1 Business activity and history	39
5.1.1.2 Internationalisation process	40
5.1.1.3 Comparison with existing theories	41
5.1.2 Albin i Hyssna AB	42
5.1.2.1 Business activity and history	42
5.1.2.2 Internationalisation process	43
5.1.2.3 Comparison with existing theories	44
5.1.3 Allinwood AB	44
5.1.3.1 Business activity and history	44
5.1.3.2 Internationalisation process	45
5.1.3.3 Comparison with existing theories	46
5.2 High-tech companies	47
5.2.1 W. Ruberg AB	47
5.2.1.1 Business activity and history	47
5.2.1.2 Internationalisation process	48
5.2.1.3 Comparison with existing theories	49
5.2.2 Hökinstrument AB	49
5.2.2.1 Business activity and history	49
5.2.2.2 Internationalisation process	50
5.2.2.3 Comparison with existing theories	51
5.2.3 Elastocon AB	51
5.2.3.1 Business activity and history	51
5.2.3.2 Internationalisation process	52
5.2.3.3 Comparison with existing theories	53
5.3 Low-tech market – Internationalisation process	54
5.3.1 Low-tech sector vs. Theoretical framework	55
5.3.1.1 Uppsala model	56

5.3.1.2 Product life cycle theory	56
5.3.1.3 Network theory	57
5.4 High-tech market – Internationalisation process	57
5.4.1 High-tech sector vs. Theoretical framework	58
5.4.1.1 Uppsala model	58
5.4.1.2 Product life cycle theory	59
5.4.1.3 Network theory	59
5.5 High-tech vs. Low-tech – Differences in internationalisation process	60
5.5.1 Uppsala model	60
5.5.2 Product life cycle theory	61
5.5.3 Network theory	61
5.6 Our addition to the existing theories	62
5.7 Summary	64
6. Conclusions	65

6.1 Answers to our hypothesis	67
6.2 Further research	70

List of Figures / Tables

Figure 3.1 The Uppsala model: Interplay involving increased market commitment and increased geographic diversification	11
Figure 3.2 The Network theory: Degree of internationalisation of the market	16
Figure 3.3 The Product life cycle	21
Figure 3.4 The Transaction cost theory	28
Figure 5.1 Map over Smederöd AB's internationalisation	41
Figure 5.2 Map over Albin i Hyssna AB's internationalisation	42
Figure 5.3 Map over Allinwood AB's internationalisation	45

Figure 5.4 Map over W.Ruberg AB's internationalisation	48
Figure 5.5 Map over Hökinstrument AB's internationalisation	50
Figure 5.6 Map over Elastocon AB's internationalisation	52
Table 3.1 The Uppsala model: The four steps in the establishment chain	12
Table 5.1 Smederöd Trading AB	39
Table 5.2 Albin i Hyssna AB	42
Table 5.3 Allinwood AB	44
Table 5.4 W. Ruberg AB	47
Table 5.5 Hökinstrument AB	49
Table 5.6 Elastocon AB	51

1. INTRODUCTION

This chapter aims to give the readers a background of why this research is written and present the questions that will be discussed in this dissertation. We have also presented our research objectives, the limitations and the outline of our dissertation.

1.1 Background

All over the world we can see global organisations reaching out to its members or customers. These multinational enterprises (MNEs) seem to control the world economy and run all of the small company competitors out of business. Is this image really accurate? In the European Commission report from 2002, the statistics tells us that the MNEs only constitute a minority of all registered companies in Europe. Approximately 1.2 percent of the companies in Europe have more than 250 employees (European Commission, 2002). Naturally the concept of what a "small company" is differs in various parts of Europe. The attention on the importance of small companies has finally got the interest of the politicians implying "that they constitute a special phenomenon" (Houman, 1995, p10).

In the complex and competitive business environment that surrounds us today, it is not always as easy to successfully sell goods or set up a production plant in a foreign country. What kind of internationalisation process each company decides to approach depends on numerous factors that influence their business. One of these factors is obviously what kind of business it is active within and another is the size of the company. The type of business that a company is working within could simply be classified as either high-tech or low-tech. Differences in internationalisation process between these two categories has not been subject for any earlier research, which makes it a particularly interesting subject to explore. Many authors

have pointed out significant differences in behaviour between big and small companies so they should not be classified under the same label (e.g. Anderson, 1979; Hollensen 1998). The same conclusion should be made about large and small companies, but despite this fact they are often mentioned in literature as one group although they differ in many aspects. We intend to deepen the understanding about small high-tech and small low-tech companies and investigate if there are any differences when it comes to their internationalisation pattern. The business activities in high-tech companies are usually clearly different than the ones found in low-tech companies. Variations in these business activities may therefore further explain the use of different internationalisation approaches.

There are three main theories explaining the internationalisation process that has earned the most scientific recognition. According to one of them, the Uppsala model, the internationalisation is a stepwise process moving to the geographically or culturally closest country first. The Network theory puts emphasis on the networks surrounding the company. This group is described as a force that makes the company go international. At last we have the product life cycle theory that is linking the internationalisation process of a company to its product phase.

These variations in how companies go international are very important to observe not solely for the domestic companies preparing themselves for an internationalisation but also for the scientific learning about companies, for consults and managerial audiences and also to highlight the difficult tasks that small companies have to deal with. The insights of how language, industry, and costs will affect a company's internationalisation process are especially essential in small countries like Sweden with a lot of small companies (PriceWaterhouse, 1995) and a relatively small home market.

1.2 Problem definition

Sweden is a small economy mostly consisting of small businesses. In this dissertation we have therefore investigated how these become international. Our research aims to observe the internationalisation process in small Swedish companies in the field of both high- and low-tech industries. The foreign market entry is a main issue for all companies involved in some form of internationalisation strategy. Our research will explore whether the internationalisation process in high-tech companies differs from the low-tech companies and vice versa.

1.3 Purpose

The purpose with our dissertation is to investigate and compare the internationalisation process of small Swedish high- and low-tech companies. Our findings will be compared to some of the most recognised theories in the field of internationalisation. If our findings vary from the selected theories our purpose is to develop a new model which includes our findings both in the high-tech sector and the low-tech sector. It is our intention that these findings can function as a guiding manual for small high-tech and small low-tech companies going abroad. Furthermore we hope that our findings can contribute to the already existing theories in the field of internationalisation.

1.4 Research questions

- Are there any differences in the internationalisation process between a small high-tech company and a small low-tech company?
- Can the internationalisation process of a small high-tech and a small low-tech company be generalized and put into a model?
- Can the traditional theories to the full extent explain the internationalisation process in both small high-tech and small low-tech companies?

1.5 Research objectives

The main objective of this dissertation was to develop one or two models which will explain the internationalisation process of small high-tech and small low-tech companies. Our findings will hopefully be a useful contribution to the existing theories in internationalisation of business.

1.6 Limitation

The qualitative method has as its main purpose to deepen the understanding of the phenomena being studied. To use this type of method we needed to have a total overview of the indicators in the internationalisation process, mainly to discover regularities in the process. Thereby we chose to limit our research objects to three companies in the high-tech sector and three companies in the low-tech sector. As mentioned before we will only focus our research on the process of the internationalisation, the steps taken when a small Swedish high- or low-tech company becomes international.

1.7 Outline

The dissertation is written with the following outline.

Chapter 2: The methodological strategy, research plan, qualitative method, primary and secondary data, and how to avoid mistakes are presented in this chapter.

Chapter 3: The theoretical framework is presented. We start by giving an introduction to internationalisation. Here we describe the history, the present and the future of internationalisation. We continue by introducing our three selected theories. Our theories are the Uppsala model, the Network theory and the Product life cycle. These theories form the explanatory base of the internationalisation process. Each theory is followed by hypotheses connected to the theory. Our selected theories are complemented with

experiments and developments. Furthermore we give our insight of the explanatory value of each theory. After this selection we present theories that are not included in the explanatory base of the internationalisation process but however give insights in the field of internationalisation. We end this chapter by giving the definitions and characteristics of small high-tech and small low-tech companies.

Chapter 4: This chapter describes our empirical method. It is based on our interviews, giving the selection of firms and respondents. Furthermore, our research questions are presented. We end this chapter by explaining the validity, reliability and generalisability of our dissertation.

Chapter 5:

In this chapter we present the companies that were included in our research, their business activity, and their history are described. Furthermore we describe each company's internationalisation process which we compare to the selected theories.

Chapter 6:

In our last chapter we present our conclusions and our own developed model.

2. METHOD

This chapter describes the process of how to carry through the research and why we chose a certain method. We will also state common mistakes and how we intend to avoid them.

2.1 Research plan

We started by reading a lot of the previous research and theories in the field of internationalisation. Furthermore, we went on by doing a survey at three small high-tech companies and three small low-tech companies to see what characterises them in their internationalisation process. Our purpose is to get the indicators that should be involved in our models and in our theory. We chose to adopt a deductive approach and so we started the process by reviewing literature in the field of internationalisation. Our research was conducted in a positivistic philosophy but we are well aware that we in some way will be affected by the surrounding environment (realism).

2.2 Data collection

Our research includes information taken from both primary and secondary sources. The theories of the internationalisation process (secondary data) were collected from literature such as books, articles and internet whereas the primary data were collected from interviews with managers from each of the involved companies. We carefully collected our data in a reliable and valid way since this should reduce the number of mistakes when writing our dissertation.

2.3 Qualitative method

In this dissertation we have studied the internationalisation process in small Swedish companies. We did this by reading a lot of the literature and a lot of the existing research in this area. This was also complemented through interviews with personal from the chosen companies. The answers were then analysed and put into our research. This kind of research method is called qualitative method since it does not, as in the quantitative method, involve any numerical data (Saunders et al. 2003). When data is collected from personal interviews the analysis cannot be done in the same standardised way as in a quantitative data analysis. The main difference between quantitative and qualitative analysis is therefore not the quality but the procedure that the data is collected through (Ghauri and Grønhaug 2002). A deep knowledge of the subject is required to discover regularities among the data. It is impossible to state the superior method. Depending on research subject the kind of data best suitable for it could be either quantitative or qualitative or perhaps a combination of both (Saunders et al. 2003). Since we put emphasis on understanding the way of thinking from the respondent's point of view this dissertation uses the qualitative method.

2.4 Primary and Secondary data

We read and collected information that was relevant to our research. The secondary data was "data that already have been collected for some other purpose" (Saunders et al. 2003 p188). In our theoretical framework we used only secondary data in order to get an overview and insight of the most relevant theories and models. Primary data is data that is collected specifically for the research and has not been documented before (Saunders et al 2003). This data is often very useful to get deeper insight into the investigated area. The question with all types of researches of this kind is whether the primary data is consistent with the secondary data.

2.5 Avoiding mistakes

There is a known risk that the data collected solely in an attempt to solve a specific research problem could unintentionally be guided to show a certain factor or simply be misinterpreted in the final result (Saunders *et al.* 2003). However, these mistakes also exist in the secondary data. One documented data that researchers use in their attempts to solve their problem could have been collected because of a totally different purpose. This might be a problem if the research had a different angle or purpose for the collected data. We were aware of these common mistakes and were therefore carefully considering these factors continuously in our research.

3. THEORETICAL FRAMEWORK

In this chapter we will present the most recognized theories concerning our research area. This includes both theories which we will use directly in our research and indirectly meaning that they are included to help the reader to better understand the internationalisation process. We will also define certain common expressions often used in the terms of international business. The purpose is to give the readers an overview in order to more easily take in the following parts of this dissertation. Information about theories and models has been collected from books, articles, and also from web-based documents.

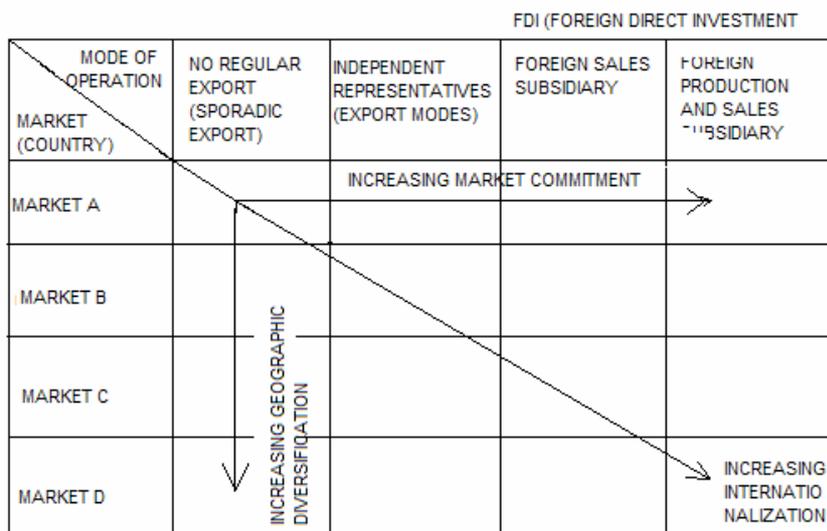
3.1 Introduction to internationalisation

Over the last fifty years the world has witnessed the development of various international economic agreements. These agreements has liberalised both trade and capital flows, and led the establishments of regional economic grouping that supersedes the nation states. This liberalisation of trade started with the establishment of GATT (general agreement on tariff and trade) in 1947 (Woods, 2001). From there this process has continued in the same direction. There are many advantages in becoming international and they vary for each company. However, to get the key competitive advantage in the international business the companies must combine these single advantages with each other and complement them with assets in different countries and cultures (Dunning, 1993). Examples of advantages can be finding low cost labour, access to or control of key inputs or markets, and dynamic innovative entrepreneurship. Internationalisation, for example exporting, is a way of increasing the turnover for individual companies. Exporting can be viewed as the traditional way to internationalise. However,

during the last decade the internationalisation has become a much more differentiated business activity. Research (European Commission, 2003) has shown that a majority of companies engage in both outward (e.g. export/sales) and inward (e.g. import or access to knowledge) activities on their international market. A majority of the exporting companies were not confined to exporting alone but also involved in network alliances. In other words foreign partnership, foreign investment, and cross border clustering. These activities represent new valuable ways to strengthen the international business strategies of small companies.

3.2 The Uppsala internationalisation model

The Uppsala model distinguishes a gradually internationalisation process of companies. It is seen as a process in which the enterprise gradually increases its international involvement in foreign markets (Hollensen, 1998). This process evolves as a result of interplay between development of knowledge about foreign markets and operations on one hand and increasing commitment of resources to foreign markets on the other (Johanson and Vahlne, 1992). The additional market commitment will be made in small steps, both in the market commitment dimension and in the geographical commitment (Johanson, 1972). These international activities require both general knowledge and market specific knowledge. Market specific knowledge is gained mainly through experience of the market and general knowledge is the operational knowledge that can be transferred from one country to another (Hollensen, 1998). The model shows a direct relation between market knowledge and market commitment.



(Source: Forsgren and Johansson, 1975, p.16)

Figure 3.1 The Uppsala model: Interplay involving increased market commitment and increased geographic diversification.

The company starts its foreign market approach on a close range market (Hörnell and Wiedersheim-Paul 1973) from there it expands to other markets. Psychic distance is also an interesting concept which refers to the differences in cultural or educational level between countries (Johanson and Vahlne, 2002). Similarities in this term can thus according the Uppsala model explain why companies chose to establish themselves in a certain market that is not geographically close. The company gain knowledge of a market by operating in it and the knowledge it collect will be used to expand to other markets. Most likely it uses the establishment chain listed below.

The four steps of the establishment chain

- Export
- Agent
- Sales Company
- Producing Company

(Johanson and Vahlne. 2002, p47)

Table 3.1 The Uppsala model: The four steps of the establishment chain

However, there are three exceptions (Johansson and Vahlne 1990): First, companies that have large resources experience small consequences of their commitment dimension and can take larger internationalization steps. Second, when market conditions are stable and homogeneous, relevant market knowledge can be gained in ways other than experience. Third, when the company gained considerable experience from markets with similar conditions, it may be able to generalize this experience to any market of choice.

Our focus was on the internationalisation process of companies and we were therefore studying the establishment chain of the companies through the Uppsala model. Will our findings differ or will they be comparable with the steps listed above?

3.2.1 Marquardt- An experiment on The Uppsala model

Marquardt (1990) conducted a research not much unlike our research. However, he chose to study the internationalisation process of five Swedish banks. He developed a dynamic model consisting of two independent constructs, historical experience and institutional influences. His findings emphasize on the importance of experiential knowledge of local conditions in the internationalisation process. Furthermore he found that the most successful banks were those which had extensive domestic experiential knowledge and well developed relationships to the home base industry. This research emphasises what the Uppsala model has stated.

3.2.2 Explanatory value of to the Uppsala model

The Uppsala model does not refer to any specific business sector. The question is how well this model explains the international behaviour in the high-tech and low-tech sector. One theory is that it has less validity in industries characterized of high internationalisation (Hollensen, 1998). High-tech companies can generally be put into this category. As the growth of this industry has been strong for several years the demand of differentiated products has increased dramatically (Arthur, 1996). Does this imply that the high-tech companies use another kind of internationalisation process than the low-tech companies?

The low-tech industry is often characterized by high, static production costs. This means that their cost of production do not decrease in the same way that products from the high-tech companies do because of the more

expensive raw material. The low-tech companies also often use their heritage as a competitive advantage more than the high-tech companies do. Do these two factors imply that they are more bound to its home market suppliers and therefore keep their internationalisation to geographically close countries? Our hypothesis about how the Uppsala model can explain the internationalisation process in high-tech and low-tech companies are therefore as follows

3.2.3 Hypothesis 1- The Uppsala model

“The internationalisation process in a differentiated industry, such as the high-tech sector, is more likely to have focus on more than one country at once since the numbers of customers per country or market are very few”

3.2.4 Hypothesis 2- The Uppsala model

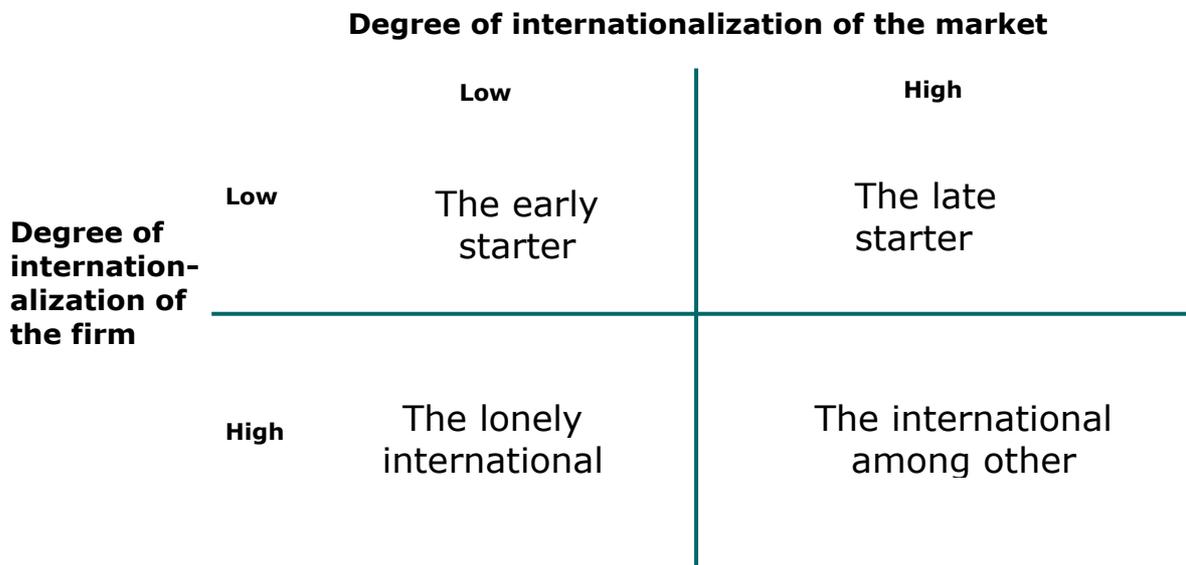
“The low-tech industry can be viewed relatively less competitive than the high-tech industry much due to the higher and more static production costs which makes the companies more bound to their heritage and keeps their internationalisation process to a stepwise approach with one country focus at the time. It also keeps their business activities limited to export in a few selected geographically nearby countries“

3.3 The Network theory

One of the most famous theories of the internationalisation process among economists is the network theory. It does not view the process of going abroad as a question only for the individual company but a question depending on relationships within and around the company. Such relationship can consist of suppliers, customers, or political factors. In other words the internationalisation is not driven by a specific competitive advantage of a company; instead the network relationships surrounding the company is the fundamental explanation of whether going abroad or not (Johanson et al. 2002).

A basic definition of what constitutes a network alliance is foremost that it must involve at least two parties, obviously with some degree of knowledge of each others' business activities. There must be some kind of dependence among the actors of the network, for example the performance of one actor can be influenced by the activities of the network. Actors are often engaged in many different network constellations simultaneously (Hollensen, 1998) which will extend the links within the networks into various directions creating a wide spectrum of connections. The relations between actors in a network can either be direct or indirect since the connections not necessarily are isolated within the walls of their own network members.

Companies go international under different conditions (Johanson et al. 2002). These can be described in a matrix depending of the degree of internationalisation and the degree of internationalisation of the market actors.



(Source: Johanson et al. 2002 p.92)

Figure 3.2 The network theory: Degree of internationalisation of the market.

The early starter

The early starter and its network have no international experience and are therefore forced to learn by themselves. For these companies there are no foreign connections that they can take advantage of in their internationalisation process.

The late starter

The companies that start their internationalisation process late have probably an advantage in establishing business activities in the foreign country. This is due to the developed market which have grown significant since other companies have had their businesses in that market for a while. On the contrary this probably means that other companies have an enormous advantage when it comes to connections in that market. A difference between the early starter and the late starter is that the latter have international connections in its network and can use this as an advantage.

The lonely international

This company has clearly a favourable situation compared to the before mentioned alternatives. It has, in contrast to other companies in the same sector, an international experience. This can be a competitive advantage if it is able to coordinate its connections to the same direction.

The international among others

A company that exists in this category works in the most competitive environment since all companies have international experience and have connections in an international network. In this situation only a few multinational companies exist in the market.

According to the network theory every company is driven by its network of relationships in the potential market before its entry. The underlying purposes are, according to Doz and Hamel (1998), to be involved in a network and create an alliance is:

- **Cooperation:** (Turning potential competitors or “complementers” into allies),
- **Co-specialisation** (Creating synergy effect by combining resources),
- **Learning and internationalisation:** (Learn from each other or form international alliance)

The existing connections and relationships they have with suppliers, customers and politicians etc in a country are decisive factors in the internationalisation of the company.

Networks can be seen as either strategic or learning alliances (Hill, 2005). In the learning alliance the companies combine knowledge from each other to be more competitive. The members of an alliance of this nature are usually not competitors but have products that are compatible when offering them together (e.g. system sale). In a strategic alliance the involved companies can be rivals from the same country as well as from different countries forming cooperation in attempt to increase their competitiveness.

3.3.1 Explanatory value of the network model

A common assumption about the high-tech industry is that it is highly internationalised. This assumption has probably emerged because of the advanced technologies that integrate people and companies such as the internet and mobile phones are easier to associate with the high-tech industry. If this in general should be true about the high-tech industry, these companies should have a more internationalised network than the low-tech industry. The low-tech industry on the contrary is less associated with internationalisation and networks. Although possibilities of forming system-solutions of low-tech products do exist, it is less common than in the high-tech industry. The natural connection to international networks which are emerging through daily business activities is thus not developing in this sector. Our hypothesis is therefore that the network model has little value when it comes to explain the internationalisation process in low-tech companies.

3.3.2 Hypothesis 3- The Network theory

“Companies working in the high-tech sector have generally more access to internationally experienced networks than companies working in the low-tech sector. The Network model has therefore a more explanatory value of the internationalisation process in the high-tech sector than to the low-tech sector”

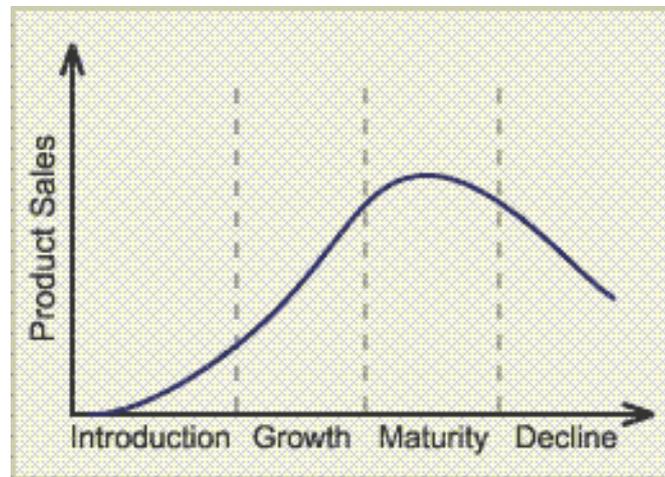
3.3.3 Hypothesis 4- The Network theory

“High-tech companies has a higher degree of collaboration with larger companies due to the abilities to combine technological products to each other in an easy and cost conscious way”

3.4 Product life cycle theory

Product life cycle theory was developed by Ray Vernon in 1966 in an attempt to explain the trade between the USA and Europe (Hill, 2003). He had studied the internationalization process of American companies and his main ideas of the theory are as followed.

To develop new products and processes demands an intensive two-way communication between producer and user, meaning that these two must be located in a closer range of each other (Johanson et al. 2002). This indicates that the product and the process will be developed in countries where the demands arise, likely to be a country with high income and high working costs (Ball *et al.* 2002). The export activities at this time consist of excess production from the manufacturing plants in the innovating country (Hollensen, 1998). When the home market grows and the production can be made in a large scale the company can start to market its product through a one-way-communication. Eventually the home market is mature and because of economy of scale benefits the company expands its sales into other countries (Johanson et al. 2002). After a while, when the demand in the new country has grown it will be more beneficial to move some of the production to this country, the company then becomes international. When the new market has grown to the size that makes it possible to produce in economy of scale the whole production will be moved out of the home market. This means that the innovating country instead will import products from the foreign countries (Hollensen, 1998).



www.quickmba.com

Figure 3.3 The product life cycle

The product life cycle describes that products passing through different stages such as introduction, growth, maturity and decline (Doz and Hamel, 1998).

3.4.1 The international product life cycle

Since Vernon developed the product life cycle in 1966 there has been a radical change in the global economy. Many markets have lost the luxury of earning adequate profits at each stage of a product's life cycle. They have all learned to follow new rules such as get to the market place quickly, at a reasonable price, and look at profitability from a total life cycle viewpoint. Dr Chadar's research (Penn-State, 2005) shows that the most successful global companies achieve a reputation for providing value throughout the international product life cycle. More focus on research and development and shorter life cycles makes these companies attractive strategic partners for new emerging high-tech companies. In turn, the global companies can refresh their technology and avoid an otherwise inevitable slide to the

mature stage which gives cutthroat competition and slim profit margins. Today the "Triad" of the largest economies - North America, Japan, and Western Europe stand for about 70 percent of world production and consumption. From 1963-1986 the Harvard Multinational Enterprise project investigated the global marketing activity of 280 US, 163 European, 60 Japanese and 58 developing-nation corporations. The study revealed a three-stage international product life cycle guiding strategic behaviour (Penn-state report, 2005).

Phase 1- High-tech

At this stage, products have

- unique "leading edge" technologies
- high engineering content
- few manufacturers and competitors
- high gross profit margins
- manufacturing within Triad
- high R&D-to-sales ratios (10 percent or more)
- technically oriented advertising support
- relatively small domestic market and export

Phase 2 - Growth and Internationalisation

Products at this stage have

- some standardization with established technologies
- greater emphasis on process engineering
- more competitors
- declining gross profit margins
- international manufacturing
- less emphasis on R&D
- more mass marketing and advertising
- growing domestic and export market

Phase 3 - Mature

In this stage product have:

- thorough standardization
- no emphasis on engineering
- intense competition
- no profit margins (a price to cost ratio approaching 1.0)
- manufacturing where factors of production are least expensive
- no R&D
- no advertising

In the original product life cycle (Vernon, 1966) the product follows the stages from introduction to decline in a natural way. However these new studies shows that in the international product life cycle the companies tries to push the product back towards phase one by investing more in R&D. Furthermore Dr Ghadar argues that the estimated product life cycle has shrunk from 15-20 years to about three years today. Meanwhile the costs of R&D have continuously increased.

This rather new developed theory focuses on larger companies. However, all global companies have suppliers and partners which often fall under the small company sector. These small companies are affected by the changes. More R&D and a larger emphasis on new technology give an entry for small high-tech companies. The pressure of short product life cycle forces companies to move quickly into the global market, selling products at reasonable process. Many companies cannot do this on their own and that is why collaborations and networks has become much more important both for small and large companies.

3.4.2 Explanatory value of the product life cycle theory

The length of a specific product's life cycle from the development to the withdrawal is most often unpredictable. The complexity increases also by the different life-cycles in various countries. As the product life cycle theory predicts the product is often in the mature phase in the innovation country and in the introduction phase in the importing country (Doole and Lowe, 2001). This lengthens the life of these products in a way that makes them even harder to predict. Since we in our earlier hypothesis stated that companies in the high-tech sector probably go international in several countries simultaneously we can also assume that their product life cycle thus is clearly shorter than those in the low-tech sector.

The product life cycle theory also assumes that companies have to produce new products as their old mature ones should decline and be withdrawn. In the low-tech industry companies can sell the same line of products that they have been doing for decades, there is nothing that tells us that a product must go through the phases of the product life cycle theory. The low-tech products, e.g. furniture, can very well go from stages of maturity to a rapid period of growth because of different reasons such as a change in customer preferences. Concerning the timing to start selling products in another country we assume that companies in the high-tech industry must be faster due to the shorter life cycles.

3.4.3 Hypothesis 5- Product life cycle

“The product life cycle has more explanatory value in the high-tech industry than in the low-tech industry due to the differences in product life cycles”

3.5 Comparison of theories

The product life cycle and the Uppsala internationalisation model describe the internationalisation process as a chain where the company learns something which it then use in its international expansion. However, there is a difference. In the product life cycle it is knowledge about the product that is important and in The Uppsala model it is knowledge about the market. In the product life cycle the company focus is on the market where the demand arises. The process continues with more commitment in terms of investments. Production plants and other facilities are then moved to the chosen country. The product life cycle is based on observations in the USA. Since the USA has a large home market the American companies can become competitive before their internationalisation. The Swedish companies on the other hand must go international to become competitive. Product life cycle does not really deal with the company as such but rather how the income and cost level in different countries affect the international trade and the foreign investments. The Uppsala model describes how the company focus on a close range market with low physical distance. The internationalisation process includes interplay between market commitment and market knowledge. When the market knowledge grows, so does the commitment. The network theory differs from the other two theories. The internationalisation of the company is not driven by a specific competitive advantage of one company; instead it is the network relationships that have been built up within the company that is the fundamental explanation of going whether abroad or not. A common situation is that the small company is a supplier to a larger company and uses this company's network to become international. Limited knowledge is what limits the internationalization process of the company in the Uppsala model. In the network theory limited knowledge is not an important issue since the company uses its network's knowledge, thus the larger company's knowledge.

3.6 Complementary theories in internationalization

These theories were added both for us as authors and to our readers in order to deepen the understanding in the field of internationalization. However, they were not included directly in our research or in our interviews with the respondents.

3.6.1 Born Globals

In all of the most well-known theories of internationalization it is clarified that companies are first active on the market where it is developed in and then goes abroad. However, this behavior cannot be generalized to all companies since some of them seem to be born already internationalized. These companies usually referred to as Born Globals, invest internationally instantly after its creation and are therefore developing much faster than the traditionally home-oriented companies (Johansson and Vahlne, 2002). This is a relatively new phenomenon so there are no internationally accepted definitions or theories of Born Globals. We are in spite of this aware of its existence and the possibility of finding companies of this category in our research.

3.6.2 First mover advantage

The first company to enter a certain market often gains more market shares than late arrivals (Ball *et al.* 2002). Although this theory does not explain the actual internationalization process it does concern an important aspect of it. The advantages of being the first mover vary in different industries and it is an interesting observation whether it has more influence in high-tech companies or low-tech companies. It has already been pointed out to have more impact in “industries where the global market can profitably support only a limited number of companies” (Hill, 2005 p170).

One of the forces that can explain why some companies become international players is the first mover advantage. The first company to enter a market will, according to this theory, earn substantial advantages such as:

-Market control as it can develop network connections in a more easy way than the late arriver. The first-mover can also control prices and the supply (monopoly effect).

-Brand recognition which leads to product loyalty among its customers.

-Cost benefits by the larger market share and higher production rate.

(Financial Times Mastering Management, 2001)

The benefits that are connected with being the first company on a market do not come for free. Speed, resources, and commitment are fundamental parts to be a successful first-mover (Venchar, 2004).

3.6.3 Transaction Cost Theory

The transaction of a certain product involves a variety of costs. Until this point all the production costs have been added and from now the costs can be defined as exchange costs or transaction costs (Knutsson, 2000). To do an accurate cost analysis the prices for searching the best supplier, prices, and qualities must be considered (Williamson and Masten, 1999). Costs for negotiations, writing contracts, and controlling the other business part's obligations are also relevant issues for such an analysis. This is the fundament behind the transaction cost theory.

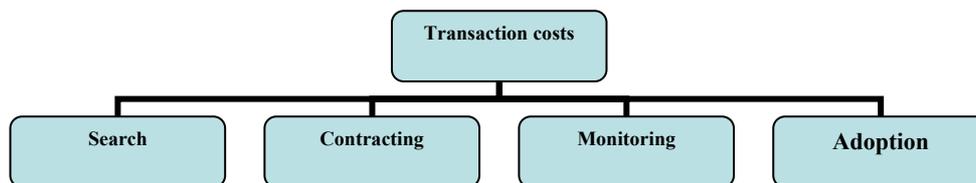


Figure 3.4 The Transaction cost theory

After this definition the theory explains how to be competitive according to the principles of the transaction costs. Being competitive in this area means to achieve the lowest transaction costs possible. The most common way to do this is to repeat transactions with the same company, for example a supplier. This way the costs of searching for information, and also largely the cost of control, can be lowered as the company trust for this supplier is increasing (Hollensen, 1998). The negative aspect of this is the dependence to that company, causing decreased flexibility of cutting costs by changing supplier. One extreme version of this is the mutual ownership where the companies become totally integrated (Williamson and Madsen, 1999). This vertical integration is mostly common when the business activities is characterised by very high transaction costs.

The explanation of why a company decides to outsource parts of its organisation according to the transaction cost theory has been investigated by many researchers. According to the two authors, Williamson and Madsen (1999), considerations should be not only for the production costs but also for the costs belonging to coordination activities. To clarify this concept we can take an example of a company that decides to outsource production to a foreign country. According to the transaction cost theory this company has evaluated the advantages to be higher than the disadvantages in both production costs and transaction costs. The company becomes international either because of the savings in distribution costs, new production facilities (increased production efficiency) or closeness to the market.

We chose not to include this theory in our research since the Transaction cost analysis focus on larger companies. The small companies that we focus on have other resource capabilities and therefore struggle under different circumstances than large companies. It still gives a good overview of the cost management in companies and is therefore included in our dissertation.

3.6.4 Eclectic paradigm (OLI)

The eclectic paradigm is the dominant theoretical framework for accommodating a variety of operationally testable economic theories of foreign direct investment (FDI) and the foreign activities of MNEs (Gray, 1999). The paradigm describes how the foreign direct investment is determined by three sets of interdependent variables, which themselves consists of three sub-paradigms (Dunning, 1993). The first is the competitive advantage that the company tries to engage with FDI, this is specific for each investing company. This sub-paradigm states that, the greater the competitive advantage of the investing company, relative to those of other companies, the more they are likely to be able to engage in, or increase, their foreign production (Dunning, 1993). The second is the attraction of different locations in other countries or regions. This sub-

paradigm avers that the more advantages given by this new location compared to the domestic location, the higher the incentive is for FDI. The third paradigm describes how a company through FDI can get better ways of organising its core competence. With FDI in other markets and regions it can get better market channels, higher competence and a more structured organisation (Dunning, 1993).

We choose to not select this theory in our theoretical framework since it describes different reasons why a company becomes international through FDI. It does not describe the process of internationalisation in any way. Since we focus our research on the internationalisation process of different companies we found that this theory did not match our core problem definition. However we used the information given to get a better understanding in the field of internationalisation.

3.7 Definition of a small company

The descriptions of a small company vary in different market areas around the world. The problem has probably emerged since most of the companies in the world actually are small. According to the definition made by the European Commission (2003); a small company's employee rate shall not exceed 50. The financial aspect states that an annual turnover shall not exceed 5 million EUR nor shall the total annual balance sheet exceed 5 million EUR. Furthermore, a small company should not by more than 25 percent be owned by a larger corporation unless it is a financial investor such as a bank or venture capitalist, and in addition is not a research centre, research institute, contract research organization or consultant. To complicate the issue further the definition can differ between industries as well (Dawes, 1995). In this dissertation we will define small companies as follows:

Definition of a small company

Employees > 50

Annual turnover > 5 000 000 Euro

Ownership = > 25 percent owned by a larger organisation

3.8 Characteristics of High-Tech

High-tech refers to high-technology, that is the cutting-edge and the most advanced currently available. High-tech products represent a technological solution to a customer's problem that is not only new but, previously, not even considered. These types of products are developed within the company. There are not any definitive descriptions of the attributes connected to high-tech products. However, if you compare with a conventional product (low-tech) it might be easier to understand the definition of a high-tech product. A conventional product is often developed through established technology that can be purchased by everyone through well-known market channels (Haati et al. 1998). High-tech markets are also often synonymous with complexity and are working under rapidly changing technological conditions with shorter life cycles and more demand for rapid decisions.

”A market-oriented definition of a high-tech product would be...a product that is an innovative application of technology to the solution of marketplace problems”

(Sigillum Universitatis Islandiae, 2000)

The most important issues for handling a high-tech product on a high-tech market are the combination of research/development and marketing. Since the product is the first in line the company must educate the customers and explain why they need the product. The company's decisions must be taken quickly and its product must be launched as fast as possible due to the short life cycle of high-tech products.

3.9 Characteristics of low-tech

There are some attributes that are characterizing a low-tech company or a traditional firm. This definition can naturally vary depending on purpose or what literature you are reading. In this dissertation we chose to define a low-tech company with the following definition. The company is strictly oriented towards production. The company focuses its investments to engineering workshops and an effective organization. Almost none of the investments are put on research and development.

“The conventional companies are based on an established technology that can be purchased through well-known market channels” (Haahti et al. 1998 p19)

In our definition of low-tech companies we as mentioned above state that these have generally lower costs for research and development but more static costs than the companies in the high-tech sector. This is due to the product features that demand a minimum of technology development but more expensive raw material compared to the high-tech sector.

4 EMPIRICAL METHOD

4.1 Selecting companies

In order to investigate our research problem we conducted interviews with six different companies. Our focus in this dissertation was on small high-tech and small low-tech companies, that is three from each category. In our selection we sorted out companies that had over 50 employees, an annual turnover exceeding 5 million Euro, and companies that were owned by a larger organisation.

4.2 Selecting respondents

The interviewed person in the selected companies must, in order to give informative answers, be well versed in the internationalisation process of their respective company. We had no restriction that the respondents must be the CEO or the owner, but that he or she must have the right knowledge about the company. In small companies it is relatively easy to get an interview with either the CEO or the owner because of the small organisation.

4.3 Interview

To collect information about the internationalisation process of companies the use of a qualitative method is needed. This is because the type of information we needed was difficult to capture with another method. The amount of data concerning why, how, when the companies went international demanded therefore a personal interview. We chose to do this by telephone since the distance would make our resource allocation very ineffective because of time wasted on travel. Every interview took approximately 30 minutes in which the questions were brought up in a structured way. The questionnaire was sent in advance to simplify for the interviewed persons and to ensure the quality of the respondent's answers.

4.4 Design of questionnaire

The first step in our construction of our questionnaire was to specify what information we wanted. The interview should not be more time-consuming for the respondent than what is absolutely necessary, so information that can be found elsewhere should obviously not take up valuable time in our interview. Secondly, we should consider how the collection is going to be managed. Since we wanted the respondents to answer freely and not be forced to answer in a certain way, we should use open-ended questions where no answers or alternatives are provided.

Our questionnaire was divided into parts each investigating the Uppsala model, the network model or the product life cycle theory. The questions were especially designed to answer how well each of the models was able to describe the interviewed company's internationalisation process. Naturally, we used exactly the same questionnaire in all of our interviews in order to get as accurate results as possible.

4.4.1 Research questions

To investigate what impact the product life cycle theory had on the interviewed companies we constructed the following questions.

1. In what phase were your products when you started your internationalisation? (introduction – growth – maturity – decline)
2. Did your company have some collaboration with other companies as you developed your products for the foreign market?
3. If yes, what types of companies were they and what nationalities had they?
4. Does your products follow the product life cycle phases (introduction – growth – maturity – decline) or have you seen any other directions such as a product going from maturity back into growth.

5. Did you start your internationalisation because your home market was saturated?

To investigate what impact the Uppsala model had on the interviewed companies we constructed the following questions.

6. On what market or markets was the company focus at the time for the company's internationalisation?

7. Did you successively increase your investments in those countries where you started your internationalisation?

8. Why did you choose this market or markets as your first foreign country approach? What was the most important factor concerning what market to choose?

9. What form of expansion did you choose? (export – sales agent – sales office – production facility)

10. Did you in any way change your way in internationalise your company as the process went on?

To investigate what impact the network model had on the interviewed companies we constructed the following questions.

11. Is it possible that the surrounding network (e.g. suppliers, customers) of your company can explain your internationalisation?

12. Was your network located inside or outside Sweden?

13. Has your network in any way forced you to precede your internationalisation process in a way other than what you planned for?

4.5 Validity

Validity is defined as to what degree the findings really measure what they are aimed at measuring and if the findings “capturing what they are supposed to do” (Ghauri and Grønhaug, 2002 p. 67). It is therefore important to have a high validity in the research. We constructed our questionnaire in order to receive answers to implement in our theories. We tried to formulate the questions in a way that would exclude any misinterpretations. The threats to validity can be charted as history, testing instrumentation, mortality, maturation and ambiguity about casual direction (Robson 2002; cited by Saunders *et al.*, 2003).

4.6 Reliability

Reliability is about how well the research methods yield the same results on other occasions and if similar observations will be reached by different observers. Put in other words the reliability tells us about the stability of our research findings (Ghauri and Grønhaug, 2002). When describing various errors Saunders (2003) distinguishes three different types, participant errors, subject and participant errors, and observer error and bias. We tried to reduce the participant errors by contacting our respondents long before the interview so they could schedule our phone call to when it suited them. Subject bias means that participants might answer in a way that their superiors want them to do (Saunders *et al.* 2003). This was not an issue for us since we only interviewed the managing directors of the companies.

4.7 Generalisability

The generalisability of the research is important to estimate, because it will tell if your research can be generalised and applicable to other research settings such as other organisations (Saunders *et al.* 2003,). One of our purposes with this dissertation is that it will be applicable to other companies both in the high-tech and low-tech sector. One distinction in our

dissertation is our focus on small companies which leads to eliminations of larger companies. Furthermore we focus on the high-tech and the low-tech sectors which mean that our findings can only be applicable to companies located within these sectors. At last we only describe the situation for Swedish companies. However, we think that our finding can be useful for companies located in other countries as well.

5 CASE STUDY

To investigate whether there are any differences in the internationalisation process between small high-tech and small low-tech companies we conducted a case study. Three companies from each sector were chosen according to the definitions stated earlier in the theoretical framework. In this chapter we will give a short background of our companies and their respective internationalisation process. Finally we present a comparison between the companies in the high-tech sector to the ones in the low-tech sector.

5.1 Low-tech companies

These companies were all chosen to represent the low-tech sector in our research by the definitions set out earlier under the heading “Characteristics of low-tech”. In an attempt to avoid any misunderstanding about what sector a certain company should be classified in we selected only companies working in clearly traditional activities with a minimum of technology involved. The following companies were selected to represent the low-tech industry in this research:

- Smederöd Trading AB
- Albin I Hyssna AB
- Allinwood AB

5.1.1 Smederöd Trading AB

5.1.1.1 Business activity and history

Smederöd Trading was established in the early 80's and can today offer a wide range of sun protection products. The main office and storage facility is located in Gothenburg while its production is in Värmland. Its main product is its venetian blinds but they also provide functional complements such as mechanical scrolling components, textiles, and wooden details. Since its introduction 25 years ago it has grown to be an international company selling its products to every continent of the world. Smederöd Trading AB has eight employees and an annual turnover of fourteen million SEK.

Smederöd Trading AB is by our definition a low-tech company. Its production and development process does not involve technologies that can be described as “cutting-edge” or the most advanced currently available. The development and production of sun-protection products are made through established technologies that are not protected by any patents or even owned by Smederöd Trading. These are the grounds for our decision of refer Smederöd Trading as a low-tech company.

Smederöd Trading AB	
Employees	8
Annual turnover	14 MSEK (2004)
Owners	Familyowned

Table 5.1 Smederöd trading AB

5.1.1.2 Internationalisation process

Smederöd Trading AB decided to sell its products outside of Sweden to explore something new. This decision was thus not made because the market in Sweden was saturated in any way. The internationalisation process in Smederöd Trading can be divided into two parts. In the first the founder of the company started its export activities in a very small scale with India because of a personal contact over there. Australia was the next step on its internationalisation process which was chosen because of the big market and not because of contacts on that market. The same reason was behind the decision to enter the Japanese and the New Zealand markets. Then the Scandinavian market was entered. In the second part of its internationalisation process, Smederöd Trading got influenced by Annika Widén, the daughter of the founder of the company. She had contacts in USA which she used in order to start export products over there. Annika Widén took the internationalisation one step further as she collaborated with retailers in the USA, exploring what type of products and what type of design to use in this specific market. The company chose an already existing product range that had been sold in Sweden and introduced it on the American market. Since this resulted in a positive way Smederöd Trading also manufactured products exclusively for that market, after a couple of years. The foreign sales have always been by export and the company has no intention of changing that. Today the sun-protection company has sales in all over the world and is still expanding into new countries.

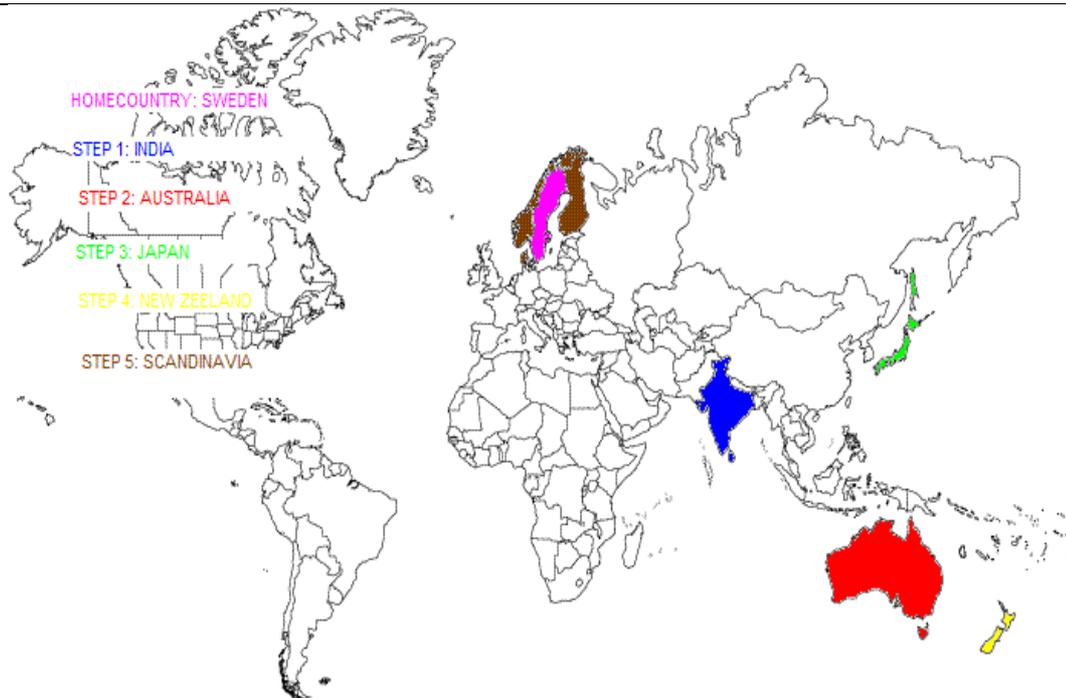


Figure 5.1 Map over Smederöd AB's internationalisation.

5.1.1.3 Comparison with existing theories

By starting its foreign sales in the India, Australia, Japan and New Zealand, Smederöd Trading clearly did not follow the Uppsala model. After entering those distant countries it went back for the Scandinavian market and from there it expanded into the rest of Europe. Personal contacts have influenced the internationalisation process in Smederöd Trading. First the founder took its products to India and then his daughter used her contacts in the USA. The most useful existing theory to explain this behaviour would be the network theory, since personal contacts which can be referred to as small “networks” within the company seem to be the strongest force when it comes to choosing what market to enter.

5.1.2 Albin i Hyssna AB

5.1.2.1 Business activity and history

The furniture producing company Albin i Hyssna AB started its business in 1920 in Hyssna, Sweden. It is still today a family-owned business with 26 employees and a 27 million SEK annual turnover. Its products are manufactured for all indoor environments but are especially focused to fit into the elderly care institutions with a traditional design and a good quality. The craftsmen in Albin i Hyssna often collaborate with external artists/designers to get fresh and yet classical design into the furniture. This is what distinguishes Albin i Hyssna from the rest of the furniture producers in the market and what has made it so successful.

Albin I Hyssna represents a low-tech company in our research on the same grounds that were used to select Smederöd Trading AB. Furniture production could have been considered as a high-tech activity if the production would have been characterised of mass-production and produced in technology intensive machines not available in well-known market channels. In this case however, the production is handmade and a minimum of technology is used in the development and production process.

Albin i Hyssna AB	
Employees	26
Annual turnover	27 MSEK (2004)
Owners	Family-owned

Table 5.2 Albin I Hyssna AB

5.1.2.2 Internationalisation process

Albin i Hyssna only uses sales agents in its foreign businesses and has never worked together with any other foreign companies to develop products. The company first went to Germany to sell its products. Germany had a strong demand and the management of Albin i Hyssna saw the possibilities of increasing its volumes over there. Denmark, Norway and Finland were the next step of its internationalisation and after these three Scandinavian countries they decided to enter more European countries like Luxembourg, Belgium and the Netherlands. Today Albin i Hyssna even exports its products to the USA and Japan.

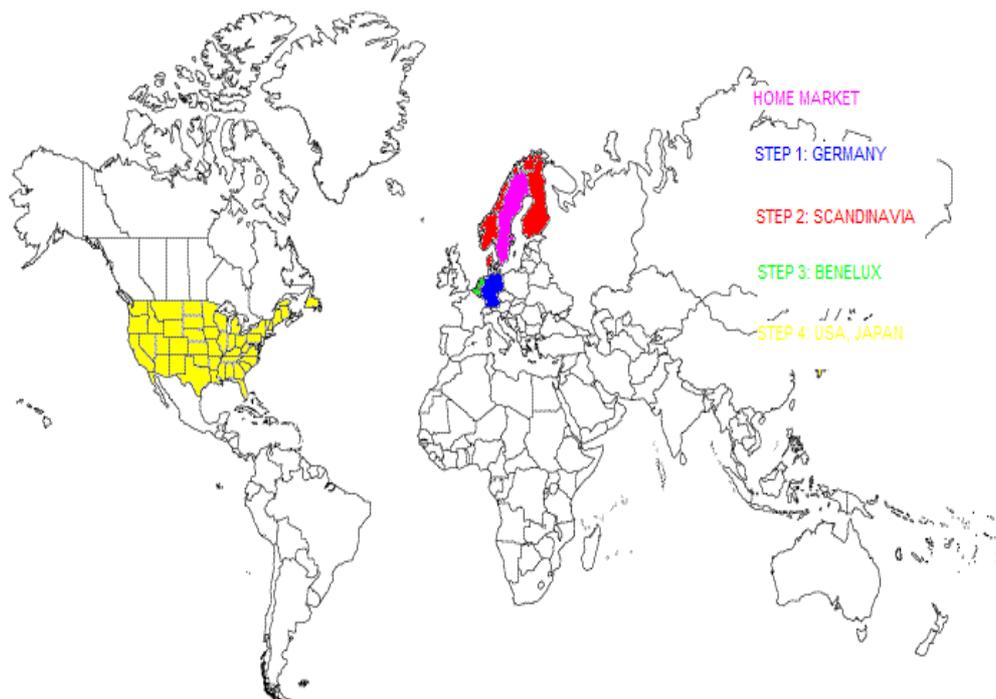


Figure 5.2 Map over Albin I Hyssna AB's internationalisation.

5.1.2.3 Comparison with existing theories

According to the Uppsala model companies start their foreign operations in nearby countries. Albin i Hyssna first went to Germany before entering the geographically closer Scandinavian countries. This can be explained in the Uppsala model by the so called physical distance, meaning that the similar conditions on the German market compared to the Swedish market may explain its internationalisation pattern.

5.1.3 Allinwood AB

5.1.3.1 Business activity and history

With roots from the northern part of Sweden Allinwood AB mixes both traditional and modern design into their furniture manufacturing. The company's main office is located in Skellefteå but has its production in Tibro. Annika Marklund is the CEO and the majority owner of Allinwood. Most of its international sales are from its collection called "Tuvan" which also is the name of the birthplace of Annika Marklund. Allinwood has lately increased its foreign sales particularly in England where now over 60 retailers sell its products.

Allinwood AB is a furniture producing company. Its business activities cannot be considered as technology intensive and its products, despite new design, must be characterized as conventional. Allinwood AB is therefore considered as a low-tech company.

Allinwood AB	
Employees	17
Annual turnover	30 MSEK (2004)
Owners	Annika Marklund

Table 5.3 Allinwood AB

5.1.3.2 Internationalisation process

Allinwood started its international activities by exporting its products to Norway. The reason behind the choice of entering this market first was foremost the geographical closeness. England and USA were its next step in Allinwood's internationalisation process. This came naturally as the CEO of Allinwood's personal experience of England. She thought that her products could be sold there just as well as in Sweden and Norway. The good reputation and interest of Scandinavian design made her vision come true and the export started. Allinwood has always used sales agents in its foreign countries and has no intention of changing that. The company has today foreign sales in Norway, England, USA, Finland, and France.

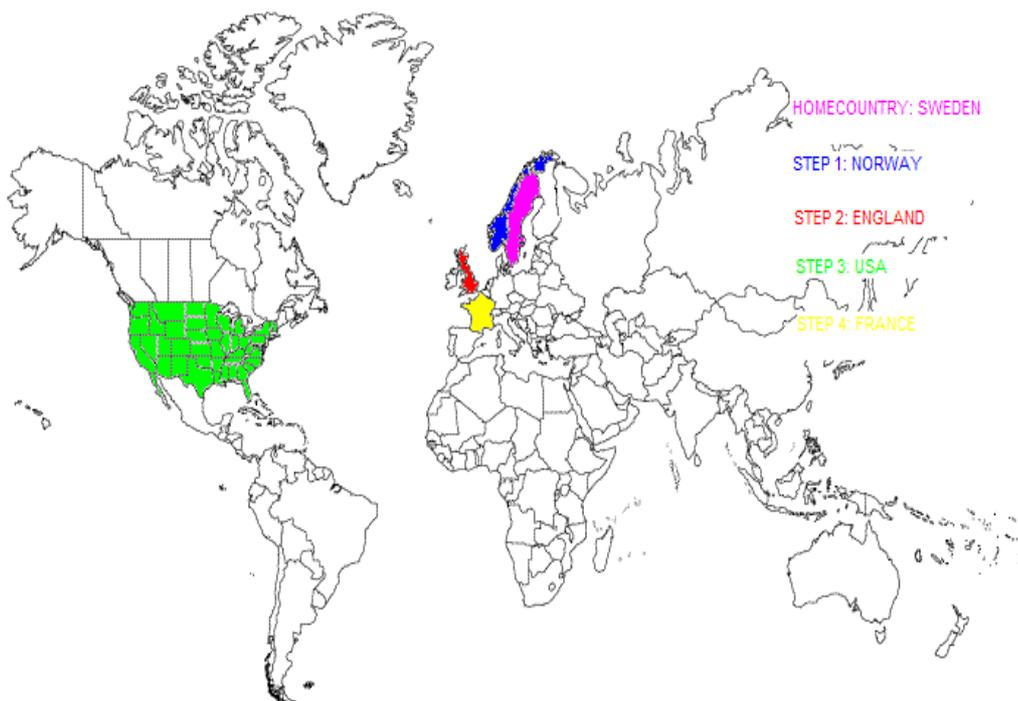


Figure 5.3 Map over Allinwood AB's internationalisation.

5.1.3.3 Comparison with existing theories

Allinwood started its internationalisation process by exporting to Norway. This first step follows the pattern described in the Uppsala model. England was the next country to enter. Allinwood chose this country due to the personal experience of the CEO. This choice can also be explained by the Uppsala model even though England was chosen because of the personal experience we view England as a country with low psychical distance compared to Sweden. As knowledge is gained by the company larger steps is taken. The third country that Allinwood decided to enter confirms this. The choice was the US which was chosen because of its big market. Throughout the internationalisation process the same type of internationalisation approach has been used. The company has since it started used sales agent both as distributors and as developers of products.

5.2 High-tech companies

These companies were all chosen to represent the high-tech sector in our research by the definitions set out earlier under the heading “Characteristics of high-tech”. In an attempt to avoid misunderstanding about what sector a certain company should be classified in we selected only companies working with research and new in-house developed products. The following companies were selected to represent the high-tech industry in this research:

- W. Ruberg AB
- Hökinstrument AB
- Elastocon AB

5.2.1 W. Ruberg AB

5.2.1.1 Business activity and history

Wilhelm Ruberg started this company in Kristianstad in 1932. He developed different kinds of gas-pumps such as fire pumps and motor pumps. Ruberg is always trying to be one step ahead of its competitors and has developed many innovative solutions. Today the production and head office are in Immeln just outside of Kristianstad and the company employs 23 people. Its products exist today on a wide range of markets from Belgium in Europe to Vietnam in Asia. Ruberg AB emphasises its connection to the well developed infrastructure in Kristianstad, recognised by Everöd airport and Kristianstad train station.

W. Ruberg AB	
Employees	23
Annual turnover	23.5 MSEK (2004)
Owner	Bert Karlson

Table 5.4 W. Ruberg AB

5.2.1.2 Internationalisation process

Ruberg AB realised early that it had to expand to foreign markets in order to increase its revenues. The business of gas-driven pumps is relatively small so as the company became successful it quickly earned about 90 percent of the market in Sweden. The gas-pump market is similar in most countries which was a great benefit when entering new markets. The products that Ruberg started to sell in the foreign countries were the same as the ones sold in Sweden. Ruberg first decided to enter the French market. This was not because of a personal network or other company specific advantages; the reason was simply a need of a challenge for the management in Ruberg who saw a big potential market. Its pumps were and are still today sold at retailers which in some cases actually sell the products to other countries. After the French market the nearby countries Belgium and the Netherlands were entered and after these the focus turned to the Scandinavian market. In all foreign countries the pumps are sold at retailers and it is only in Hong Kong where Ruberg uses sales agents.

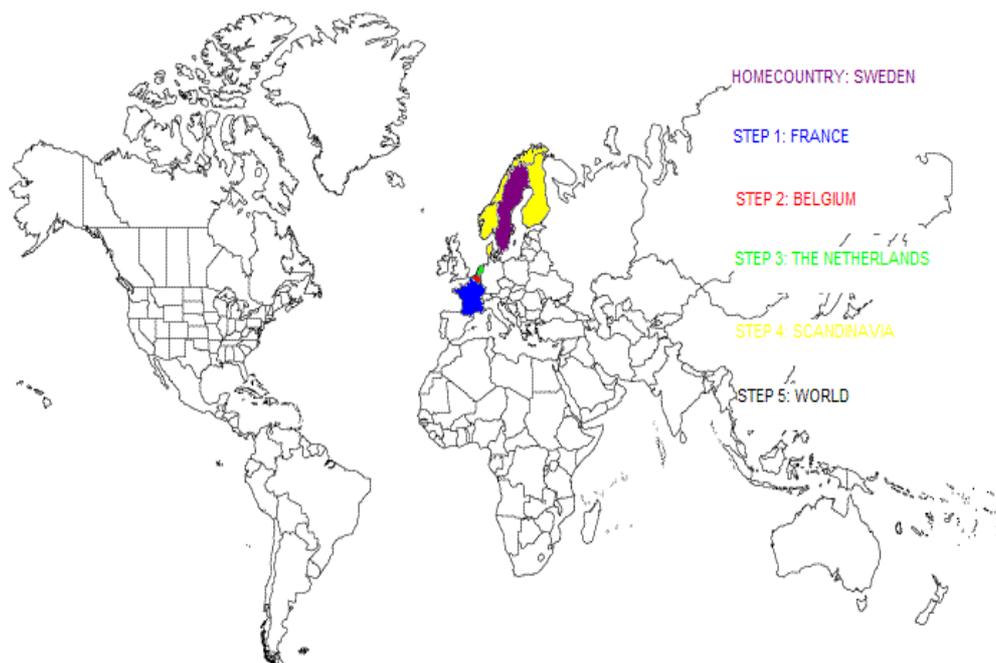


Figure 5.4 Map over Allinwood AB's internationalisation

5.2.1.3 Comparison with existing theories

The choice of France, Belgium and the Netherlands as its first foreign markets had some similarities with the Uppsala model. Although France is not the geographically closest country for companies located in Sweden we finally defined it as a physically close country. The countries entered after France are the nearby countries Belgium and the Netherlands. Since Ruberg had no international network or production facilities outside of Sweden we concluded that the Network theory could not explain its internationalisation process. We could however see a pattern described by the product life cycle as the market in Sweden was highly saturated and that its products were in a mature phase. This can be viewed as the step one of this theory. Step two should then be to outsource parts of their production to France, a scenario which has not occurred. The product life cycle was originally meant to describe how the production moves from an expensive country to a low cost country. In the case of Ruberg, we have not seen a tendency to move the production. The best explanation was according to their establishment chain the Uppsala model.

5.2.2 Hökinstrument AB

5.2.2.1 Business activity and history

Hökinstrument AB produces state of the art sensor instruments and provides consulting services within this field. The company was founded by Bertil Hök in 1986. He had a long experience of this technology from earlier employments in Siemens-Elcoma and ASEA. Hökinstrument sells four different products, mainly for the medical care. One of them is the “Respi Rate Meter” which is an instrument for respiratory patient monitoring.

Hökinstrument AB	
Employees	3
Annual turnover	1.2 MSEK (2004)
Owner	Bertil Hök

Table 5.5 Hökinstrument AB

5.2.2.2 Internationalisation process

The internationalisation process of Hökinstrument AB differs from the other companies in this study. Bertil Hök describes the company as totally customer-oriented which focuses only on the customer and not on markets or countries. Hökinstrument AB became international through selling its products to already global business customers. Thereby it entered the international field on a global base. This can be compared to the phenomena of Born Globals. Today products from Hökinstrument exist all over the world. However, it has not increased its international commitment in any way; the procedure is still the same as when it started its internationalisation.

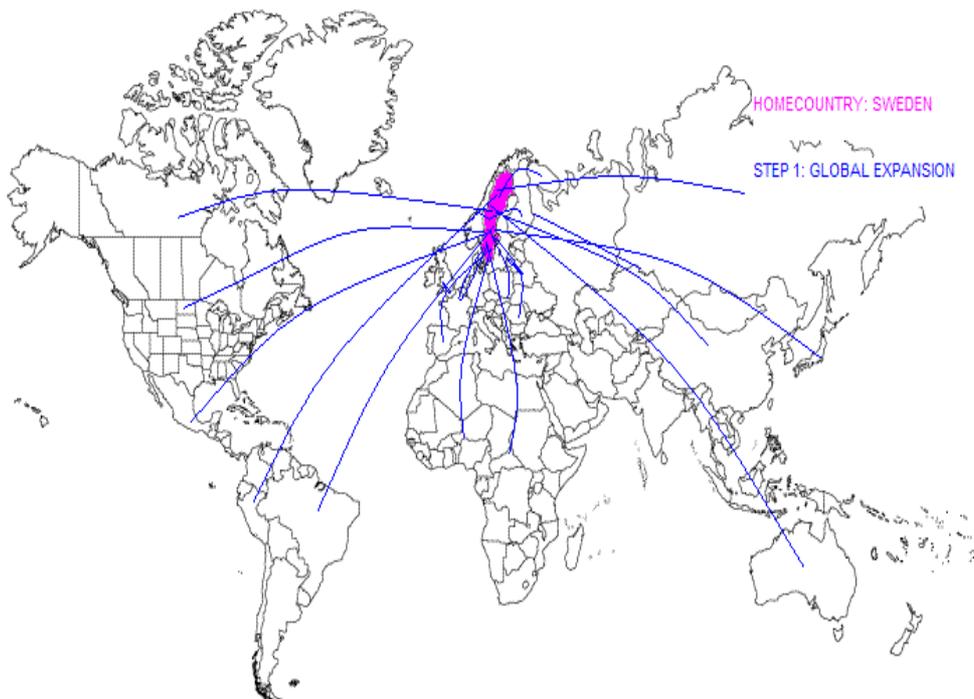


Figure 5.5 Map over Hökinstrument AB's internationalisation

5.2.2.3 Comparison with existing theory

As we wrote earlier Hökinstrument AB differs from the other companies. It became international on a global base through its network. It works as a totally customer oriented company which only focuses on developing products suited for its customers. Bertil Hök had through his earlier work built up a network which gave his company the advantage of going international on a global base right away. We can easily see the connection to the phenomena of Born Globals which describes how a company without almost any home market becomes international on a global base right away. Since Hökinstrument does not focus on either markets or countries the Uppsala model cannot be used. This is a clear case of a company's internationalisation process being explained by the network theory.

5.2.3 Elastocon AB

5.2.3.1 Business activity and history

Göran Spetz started what later came to be Elastocon in his garage in 1987. He had worked several years at Firestone where he controlled the quality of rubber with different kinds of testing equipment. At home he developed his own rubber testing instrument which he sold to a company even though the instrument at that time only existed on paper. Since then Elastocon has grown to have nine employees and with an annual sale of twelve MSEK. The company has 30 different instruments. One example is the “Cell Oven EB01” that is used to measure the aging process of rubbers and plastics under different conditions.

Elastocon AB	
Employees	9
Annual turnover	12 MSEK (2004)
Owners	Göran Spetz

Table 5.6 Elastocon AB

5.2.3.2 Internationalisation process

Elastocon's instruments are sold in 30 countries around the world. It all started with England where sales agents got in contact with Elastocon and wanted to sell its products in their country. The years the CEO, Göran Spetz, had worked at Firestone had given him useful contacts which became a significant advantage when his company started its foreign activities. The new testing instrument was clearly better than those of the competitors so sales agents came to him instead of the other way around. After England the next step in the internationalisation process was the rest of Europe and then the Scandinavian countries. The quick internationalisation of Elastocon can be explained by the narrow and much specified business field that it is working in. After a couple of years Elastocon noticed a rising interest of its instruments in Asia and USA and started exporting its products to these countries too. Approximately 90 percent of Elastocon's instruments goes on export and that has to do with the internet revolution as customers around the world can see and read about its products.

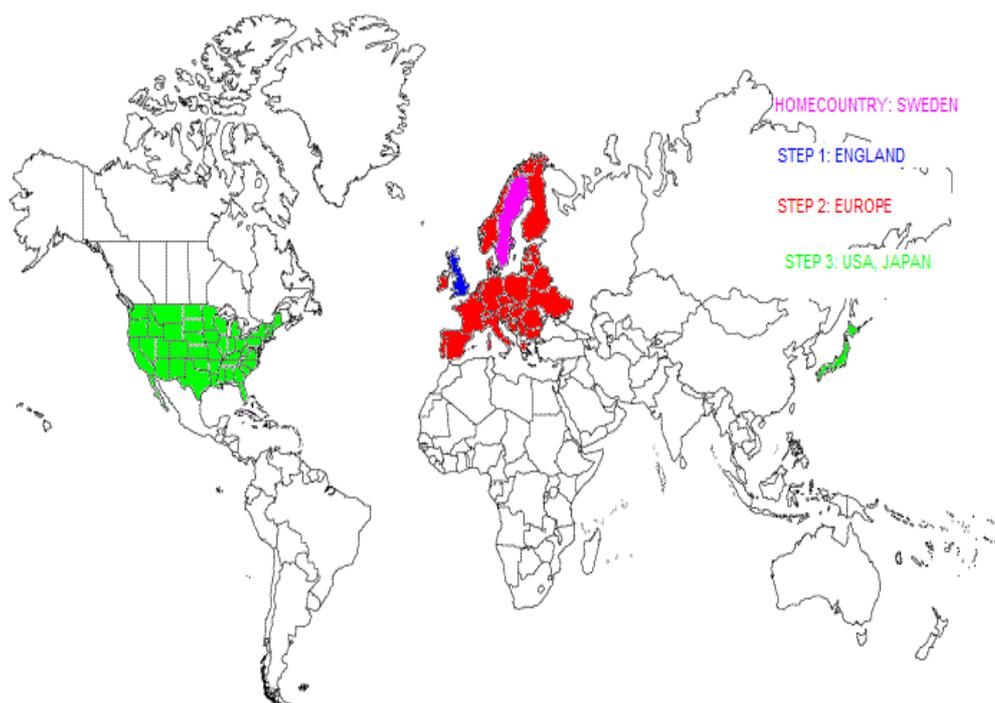


Figure 5.6 Map over Elastocon AB's internationalisation

5.2.3.3 Comparison with existing theories

In Elastocon the same phenomenon observed in Hökinstrument AB was found. Also in this case a form of instant internationalisation had occurred. In Hökinstrument AB, which was described earlier, the internationalisation was global instantly, but the internationalisation in Elastocon was limited to the European market the first couple of years before it entered the USA and the Asian markets. We chose, however, to refer to the internationalisation of Elastocon as Born Globals. Something that is essential for this kind of internationalisation is obviously to have international connections. The Network theory describes how the company get access to different networks. In small companies like Elastocon this is replaced by personal experiences from individuals in the company. With this fact in mind we cannot explain the internationalisation process with the help of the Network theory. The product life cycle theory has less explanatory value of the three chosen theories since the new found Born Globals concept entirely changes the internationalisation process described in that theory.

5.3 Low-tech market – Internationalisation process

The companies chose to represent the low-tech sector in our research are more influenced by big markets than the geographical distance when entering new markets. One mutual aspect in their internationalisation behaviour is the single-country focus, whereas all companies went to one specific country at the time and not several simultaneously. The personal experience has also a big impact on what market to choose. This observation seems to be linked to the small number of employees which naturally leads to more influence of the staff. We could see this even more clearly in one example as the internationalisation took another direction after the exchange of the CEO in that company. The factor of being first on one market is not an important issue in the low-tech sector. The companies indicate that they do not want the market to be in the introduction phase since this makes it harder and more expensive to enter and sell products on. They refer to the amount of advertising and other forms of promotion to get the customers interest. The choice of market is therefore also driven by how well developed the specific market is.

Each of the products exported from the low-tech companies were all developed by themselves. No collaboration with foreign or domestic companies was observed in the initial internationalisation process of our selected low-tech companies. However, in one company we could see a collaboration after a while as the company's products had been established on that specific market. All products used in the initial foreign sales were considered to be classified as mature. They had been sold in Sweden and thus not specially developed for the new market. The market commitment must be considered as generally low for the low-tech companies as they chose not to establish any sales office or production plants in the foreign countries. Common sales approaches are instead sales agents and exports directly to foreign retailers.

As conclusive marks about the low-tech market our findings foremost shows the fact that they seem to focus on one country at the time (single-country focus) and that the personal experience of the personnel has a high influence when choosing what foreign market to enter. The low-tech companies also work and develop their products individually and use a minimum of market commitment in their international sales.

5.3.1 Low-tech sector vs. Theoretical framework

5.3.1.1 Uppsala model

All companies in the low-tech sector focused on one country at the time in their internationalisation and did not increase their commitment substantially as the time went on. Nether did the companies in general go to the geographically closest markets first. Instead they referred to the personal experiences and contact-network within the organisation as they selected what market to enter. This personal experience and the market potential became significant features observed in the internationalisation strategy in the low-tech companies.

5.3.1.2 Product life cycle theory

The companies representing the low-tech sector in our research have located all of their production in Sweden. The internationalisation process is thus not performed by any form of outsourcing to low-cost countries but by exporting products to foreign countries. In the product life cycle theory emphasis lies on what phase the product is in. We could observe that all low-tech companies started by exporting products classified as mature.

5.3.1.3 Network theory

One interesting observation was the importance of personal experience within the company. In contrast to the network theory these contacts and network connections were built up outside the actual company and were not evolving between the company and e.g. suppliers or customers. The small size increases the influence from the personal and especially from the manager since the decision making process is rather hierarchic in these companies. No company had any collaboration with foreign companies in the initial foreign market entry. In one case new design and functionalities of some products were developed in cooperation with a foreign retailer, but that first occurred after a couple of years on that market.

5.4 High-tech market – Internationalisation process

We can easily see three important similarities within the high-tech sector; first is the fact that all three companies expand to several countries simultaneously, second is the importance of the product attribute and third is the potential of the chosen market. When a small high-tech company chooses what market to enter it does not focus on only one country. We will explain this several-country focus further in our conclusion. In order to get this kind of entrance to the international market, personal networks are absolutely necessary. Our respondents had all developed personal networks. This gave these companies the possibility to sell their products through this network without any direct marketing. In some cases the customers within the network came to them instead of the other way around. This followed by another interesting observation, the Born Globals. This means that some companies had no domestic sales before their internationalisation. The phenomenon of Born Globals was found in the high-tech sector and seems to have a connection to the differentiated products in the this sector which demands a geographically wide customer stock together with the personal network, giving them the opportunity to sell through a global company. To be the first company on a specific market seems to be of importance for

high-tech companies even though it is not something that these companies search actively for in their internationalisation process.

Our second finding was that all three companies in the high-tech sector puts much focus on their products. In this aspect importance of innovation and being first on the market is pointed out as crucial for all three companies. We can see that the development of products is integrated in collaborations with other companies. This issue has shown to be more important in the high-tech sector than in the low-tech sector. The third similarity is the focus on market potential. All three companies have expanded to markets with great growth potential. However, our thought is that this is important for all companies both in the high-tech sector and the low-tech sector.

5.4.1 High-tech sector vs. Theoretical framework

5.4.1.1 Uppsala model

Our research has shown that high-tech companies do not follow the steps of the Uppsala model. The internationalisation process was instead characterised by a focus on several markets simultaneously. In some cases even to the extent that the company falls under the phenomena of Born Globals, defined here as companies that sell its products globally instantly after its creation. The stepwise approach is therefore not the best way to explain their internationalisation process. Even though they all enter geographically close markets this is not a crucial incentive in choice of market. Furthermore they have the same commitment throughout their process. All of our research objectives use some type of sales agent in their distribution chain. However as stated earlier, none of them increased their commitment by e.g. open production plants or warehouses abroad.

5.4.1.2 Product life cycle theory

The high-tech sector demands a quick product launch. Two of our research objects states that their products were sold as early as in their development stage. We can also see the importance to reach a global market as fast as possible. It is once again stated that it is important for high-tech companies to launch their products quickly and to reach a global market. A small high-tech company must put great effort on developing custom suited products.

5.4.1.3 Network theory

We observed that our research objects in the high-tech sector used a network to become international. They sold their products to or through a larger company, a collaboration that benefits both sides. The small high-tech company reaches a global market and the large company can complement their existing product range and get innovative incentives. Furthermore the importance of personal experience is pointed out. It is often through the personal experience that the networks arise. These connections are thus already established before the creation of the company which is an important contribution to the Network theory.

5.5 High-tech vs. Low-tech

- Differences in internationalisation process

By analysing the text above about the internationalisation process at the high-tech sector and the low-tech sector we were able to distinguish important differences between them.

5.5.1 The Uppsala model

The most significant contrast was the country approach. Low-tech firms preferred the single-country approach, thus the traditional way of internationalisation while high-tech firms had more tendencies to approach several countries at once. Already at this early stage of our analysis we got indications of gaps in the explanatory abilities of our theoretical framework. Two kinds of business sectors with so different business activities should or could obviously not be explained in the same model.

“Low-tech firms preferred the single-country approach, thus the traditional way of internationalisation, while high-tech firms had more tendencies to approach several countries at once”

A comparison between the internationalization processes in high-tech companies to low-tech companies through the Uppsala model shows us some similarities and some differences. We can see that both sides prefer to enter countries with low physical distance. However the reasons for this differ. A low-tech company chooses to enter a country with low physical distance due to the simplicity in the process and due to the potential of the market being entered. A high-tech company on the other hand enters a market with low physical distance as a part of their strategy of going in to many countries simultaneously. However market potential is just as important for high-tech as for low-tech and furthermore we can see that

personal experience of a market often influence the choice of what market to entry. This goes for both high-tech and low-tech.

“However, market potential is just as important for high-tech as for low-tech and further more we can see that personal experience of a market often influences the choice of what market to entry”

There was no observed difference in market commitment between the high-tech companies and the low-tech companies. Both sectors used either sales agents or direct export to retailers in their foreign markets, thus a minimum of commitment. The low investment strategy did not change as their knowledge of one market increased; instead the low market commitment was consistent over time.

5.5.2 The Product life cycle theory

A difference was visible in the aspect of which phase the products were in at the time of the internationalisation. The low-tech products had all been sold for a while in Sweden before the internationalisation. In the high-tech sector the products were sold internationally instantly; in one case even before it even had been finally constructed. It appears that the business activity and the difference in product life cycle affect how and in what phase the companies internationalise their products. In two of our high-tech companies we could observe the Born Globals phenomenon. This was a clear difference in the internationalisation process between the high-tech and the low-tech sectors.

“It appears that the business activity and the difference in product life cycle affect how and in what phase the companies internationalise their products”

5.5.3 The Network Theory

Companies in the high-tech sector have generally a sophisticated cooperation with their customers. This is a decisive factor when it comes to why they become international. The collaboration often concerns research and development. In the low-tech sector the network relations are less profound and the foreign sales do not emerge through multinational customers, as in the high-tech sector. In both sectors the most important factor concerning the choice of market is the personal experience. This type of “network-connections” differs, however, from the usual Network theory since they occur outside, or even before the creation, of the company. They do not emerge through business activities with customers or suppliers.

“In the low-tech sector the network relations are less profound and the foreign sales do not emerge through multinational customers, as in the high-tech sector”

5.6 Our addition to the existing theories.

One of our hopes with this dissertation was to develop our own model which could be a contribution to the existing theories in the field of internationalisation. Our theoretical framework describes three recognised theories.

- The Network theory
- The Product life cycle
- The Uppsala model

These three theories describe different prospects in the international process. The network theory focuses on the network surrounding the company. How it influences the process when the company goes abroad. The product life cycle describes the international process by focusing on what state the product exists in when the company goes abroad. And at last the Uppsala model shows the connection between market knowledge and the market commitment.

To describe our model we must first focus on the Uppsala model and the network theory. The Uppsala model shows the importance of low physical distance between home market and the selected market. The model describes how a company chooses to enter a market at a close range or with similar culture. It focuses on the term “low physical distance” between markets.

Furthermore the network theory describes the importance of relationship between different companies. It describes how one company becomes international through another company. Often it is a rather small company functioning as a supplier to a larger already international company.

Our research has shown a new dimension in the international process. It shows that the selected theories fail in describing the typical internationalisation process of a small Swedish either high-tech or low-tech company. Our research has shown that one of the most important factors when a small company selecting which market it should expand to is the company's personal experience of the market. A majority of our research objects have stated that it is their own personal experience that has been the decisive criterion.

As we stated before both The Uppsala model and the Network theory lacks this aspect. The Uppsala model states the importance of low physical distance between markets and the Network theory shows how relationship between companies or persons explains the international process. However none of them describes the importance of personal experience to a foreign market. If a person in a company has experience and is well versed about a certain market through earlier work or education this naturally lowers the degree of uncertainty and the importance to choose markets with low physical distance. This is explicit in small companies since it is easier for a small work force to adapt this experience.

5.7 Summary

When comparing our findings in the high-tech sector to the findings in the low-tech sector we found both differences and similarities. The similarities are the strong influence of personal experience and no increase of commitment over time. Our findings showed that the stepwise internationalisation process described in the Uppsala model has less explanatory value than the amount of personal experience of the staff. This personal experience has been collected outside of the company, something that is specific for small companies according to our research. There are three main differences between the high-tech and the low-tech sector. The first is concerned with the number of countries entered simultaneously or separately. In the low-tech sector they use the single-country approach which means that they enter one country at the time. It also uses mature products and do not collaborate with foreign companies in its internationalisation process. In the high-tech sector the companies instead uses a multi-country approach. This refers to the several countries entered simultaneously. Another difference is that the companies' uses new developed products and often collaborate with other companies in their internationalisation process.

LOW-TECH	SMALL COMPANIES	HIGH-TECH
Single country focus	Personal experience	Muliti-country focus
Mature products	No increase of commitment	New developed products
No collaboration	Contacts built up outside of the company	High collaboration

6. Conclusion

In this chapter we state our findings drawn from the analysis. With a starting point from our purpose we discussed different aspects of the internationalisation process in six small Swedish high-tech and low-tech companies. Our purpose was to investigate if there were any differences in the international process between them. Furthermore, we wanted to see if this process could be generalised and put into a model. In order to develop our own model we had to investigate if the internationalisation process of small Swedish high-tech and low-tech companies could be explained by the existing theories.

We have studied the internationalisation process in two different business sectors, the high-tech and the low-tech sector. In our research we found that the existing theories give a rather good explanation in how companies go international. However, none of them focuses exclusively on small companies and there is no distinction between high-tech and low-tech companies. Since our research has shown that there are major differences between these businesses sectors we wanted to explain how the two sectors differ in their internationalisation process. Our findings showed that the existing theories lacked in information. To fill these gaps we developed our own model which includes the most characteristic feature of the two sectors concerning their choice of market. This finding showed that it was foremost the personal experience in small high-tech and low-tech companies that was decisive factor in the choice of market. The full description of this phenomenon is described in the chapter “Our own theory”. Furthermore we found main differences that characterised the internationalisation process of the two sectors. In the low-tech sector the use of a single-country approach was preferred and there was no direct collaboration with other domestic or foreign companies that affected their internationalisation process. Our

research has also found some differences in the product life cycle. These findings state that low-tech companies prefer to enter new markets with mature products. On the contrary the high-tech sector uses a multi-country focus and has an extensive collaboration with large companies concerning research and development as well as in their internationalisation process. Finally our findings also highlight the fact that high-tech companies to a larger extent use new-developed products as they enter new markets. Although our research questions do not focus on the difference in the internationalisation process between small and large companies we observed some specific features of small companies that can be useful in both sectors. As we mentioned earlier the personal experience is one decisive factor in the choice of market for both high-tech and low-tech companies. These experiences were built up outside of the companies, something that is contrary to the traditional network theory where these experiences were built up within the company when doing business with other companies. The Uppsala model states that there is interplay between knowledge and an increase of market commitment. However, our study has shown that this is not true about the small companies. There is no increase of commitment in these companies included in our research.

LOW-TECH	SMALL COMPANIES	HIGH-TECH
Single country focus	Personal experience	Multicountry focus
Mature products	No increase of commitment	New developed products
No collaboration	Contacts built up outside of the company	High collaboration

6.1 Answers to our hypothesis

Hypothesis 1

“The internationalisation process in a differentiated industry, such as the high-tech sector, is more likely to have focus on more than one country at once since the number of customers per country or market is very few”

When comparing our findings to our first hypothesis we state that our thoughts were correct. The companies we investigated in the high-tech sector used the multi-country approach, thus entering more than one country at once. This is explained by two main factors. The first factor concerns the small number of customers per country, which forced the high-tech companies to enter several countries simultaneously. The second factor is the influence from larger companies which they collaborate with in their sales process. These companies automatically spread the company to more than one market at once.

Hypothesis 2

“The low-tech industry can be viewed as relatively less competitive as the high-tech industry and due to the higher, more static production costs and that they are more bound to its heritage keeps its internationalisation process and its business activities limited to export in a few selected geographically nearby countries”

In our research we found that the competitiveness in fact is higher in high-tech sector compared to the low-tech sector. This is due to the demand of differentiated, new developed products. However, we cannot draw any conclusion in the internationalisation process between the high competitiveness and the use of stepwise country approach. None of our respondents uses the stepwise approach in the sense of exporting to a few selected geographically nearby countries. This is observed in both the high-

tech sector and the low-tech sector. We can by analysing our finding draw conclusions that no company puts its main focus on the geographical distance when selecting which foreign country to enter.

Hypothesis 3

“Companies working in the high-tech sector have generally more access to an internationally experienced network than companies working in the low-tech sector. The Network model has therefore a more explanatory value of the internationalisation process in the high-tech sector than to the low-tech sector”

Our findings shows that the high-tech sector has more access to internationally experienced network. This is due to the generally higher interest of high-tech products in the larger multinational companies, which often collaborates and therefore ends up in the same network. The collaboration mentioned here cannot be found in the low-tech sector.

Another aspect of network connections is the importance of personal experience of other markets in both sectors. This includes foreign contacts often developed by employees of the company and are not linked to the business activities in any way. Compared to the traditional way of explaining how companies gain access in network, thus by doing business with other companies this states that it is the personal contacts aside of the companies that is the most decisive factor.

Hypothesis 4

“High-tech companies has a higher degree of collaboration with larger companies due to the abilities to combine technological products to each other in an easy and cost conscious way”

This hypothesis was shown to be correct. Collaboration was very common in the high-tech companies but very rare in the low-tech companies. The collaboration in the high-tech sector is focused on the research and development since larger multinational companies often have sales arrangements with smaller high-tech companies. Our findings also stated that these larger multinational companies often wanted to increase their product range by collaborate with small high-tech companies and offered to introduce their products internationally. The low-tech sector had no collaboration with other companies in their product development or internationalisation process. Although the ability to combine products exists we have not found this in our research group.

Hypothesis 5

“The product goes through the stages of the product life cycle theory faster in high-tech companies compared to low-tech companies due to the demand for new development in that business sector”

As the product life cycle theory states and as we found the companies introduces their products to markets where the demand arise. The introduction process is followed through in the same way in both sectors. However, after the introduction, the low-tech companies let their product go through the whole product life cycle in a natural way. The high-tech company however tries to keep its products in the introduction phase as long as possible. This is done by putting new research and development to its already existing products, giving new reasons for the customer to purchase. None of our respondents has exceeded in the process where they can make profits in moving their production to the chosen country.

6.2 Further research

After studying the internationalisation process and a lot of related theories very extensively we found some interesting subjects for further research.

- Since this dissertation is conducted on a rather small number of companies we are not able to generalise the results. Further research could involve more respondents to confirm our results.
- The traditional theories of internationalisation process do not define what type of companies they apply to, or not apply to. Therefore further research can do similar case studies as ours but with other business sectors such as the service sector to the production sector
- We found that two of our respondent companies were Born Globals. This is a rather unexplored phenomenon in the internationalisation process which would have been interesting to do further research about.

References

Books

- Andersson, G. (1979). *Joint venture between small firms - a case study of the introductory stage of a joint venture process*. Lund : Studentlit.
- Arthur, W.B. (1994). *Increasing returns and path dependence in the economy - with a foreword by Kenneth J. Arrow*. Ann Arbor : University of Michigan Press
- Ball, D.A., McCulloch, W.H., Franz, P.L. (2002). *International Business – The Challenge of Global Competition*. Boston : McGraw-Hill/Irwin.
- Cyert, R.M., March, J.G. (1992). *A behavioural theory of the company – Second Edition*. Cambridge, Mass. : Blackwell.
- Dawes, B. (1995). *International Business – A European Perspective*. Cheltenham : Stanley Thornes.
- Doole, I., Lowe, R. (2001). *International Marketing Strategy – Analysis, Development and Implementation – Third Edition*. London : Thomson Learning.
- Doz, Y.L., Hamel, G. (1998). *Alliance advantage: the art of creating value through partnering*. Boston, Mass. : Harvard Business School Press
- Dunning, J.H. (1993). *The Globalization of Business : the challenge of the 1990s*. London : Routledge
- Ghauri, P., Grønhaug, K. (2002). *Research Methods In Business Studies – A Practical Guide*. Harlow : Financial Times Prentice Hall.
- Gray, P.H. (1999). *Global Economic Involvement : a synthesis of modern international economics*. Copenhagen : Handelshøjskolens forl.
- Haahti, A., Hall, G., Donckels, R. (1998). *Internationalization of SMEs: the Interstratos project*. London : Routledge.

- Hill, C.W.L. (2005). *International Business – Competing in the Global Marketplace*. Boston, Mass. : McGraw-Hill.
- Hollensen, S. (1998). *Global Marketing : A Market-Responsive Approach*. London : Prentice Hall.
- Houman, P. (1995). *Collaborative Internationalization of small and medium-sized enterprises: SMEs participation in the international division of labour*. Copenhagen : Jurist- og Økonomiforbundets Forlag
- Hörnell, E., Vahlne, J.E., Wiedersheim-Paul, F. (1973). *Export och Utlandsetableringar*. Stockholm : Almqvist & Wiksell.
- Johansson, J. (1972). *Exportstrategiska problem*. Stockholm : Askild & Kärnekull.
- Johansson, J., Vahlne, J.E. (1990). *The mechanism of internationalisation*. Uppsala: Department of Business Studies Uppsala University.
- Johansson, J., Vahlne, J.E. (2002). *The internationalization process of the firm : a model of knowledge development and increasing foreign market commitments*. Uppsala : Univ.
- Knutsson, H. (2000). *Process-Based Transaction Cost Analysis – A Cost Management Exploration in SCA Packaging*. Lund : Lund Business Press.
- Kotler, P. (2000). *Marketing Management – The millennium Edition*. Upper Saddle River, N.J. : Prentice Hall.
- Lorange, P., Roos, J. (1993). *Strategic Alliances: formation, implementation, and evolution*. Cambridge, Mass : Blackwell.
- Mark-Herbert, C., Nyström, H. (2000). *Technological and Market Innovation*. Uppsala : Sveriges lantbruksuniversitet.

- Marquardt, R. (1990). *Bankers Internationalisering : dimensioner för fortsatt forskning*. Uppsala : Univ., Dept. Of Business Studies.
- Penrose, E.T.(1995). *The theory of the growth of the company*. Oxford : Oxford Univ. Press.
- PriceWaterhouse (1995). *Doing business in Sweden*. USA: Price Waterhouse World Firm Services BV, Inc.
- Saunders, M., Lewis, P., Thornhill, A. (2003). *Research Methods for Business Students – Third Edition*. Harlow : Financial Times/Prentice Hall.
- Williamson, O.E., Masten, S.E. (1999). *The Economics of Transaction Costs*. Cheltenham : Edward Elgar.
- Woods, M. (2001). *International Business*. London : Palgrave

Articles

Buskirk, B.D., Popper, E.D. (1998). ‘*Growth Strategies for High Tech Firms*’, the Graziadio Business Report. Available from:
<http://gbr.pepperdine.edu/981/marketing.html>

European Commission (2002). ‘*SMEs in Europe*’, Luxembourg: The European Union’s office for official publications. Available from:
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/smes_observatory_2003_report7_en.pdf

European Commission (2003). ‘*Internationalisation of SMEs*’, Luxembourg : The European Union's office for official publications.

Available from:

http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/smes_observatory_2003_report7_en.pdf

Johanson, J., Vahlne, J.E. (1992). '*Management of foreign market entry*', Department of Business Studies, Uppsala University

Johanson, J., Vahlne, J.E. (1993). '*Management of Internationalization – with commentary by Dieter Hahn*', Department of Business Studies, Uppsala University

Internet sources

Financial Times Mastering Management (2001). *Management A-to-Z: First-mover advantage*. [online] (cited 24th Oktober 2005) Available from http://www.ftmastering.com/mmo/mmo07_6.htm

Venchar – Ideas, analysis and opinions on technology (2004). *First mover advantage and barriers to entry*. [online] (cited 24th October 2005) Available from http://www.venchar.com/2004/01/first_mover_adv.html

QuickMBA – Knowledge to Power your Business (2004). *The Product life-cycle*. [online] (cited 24th October 2005) Available from <http://www.quickmba.com/marketing/product/lifecycle/>

Penn State – Center of Global Business Studies (2005). *The Evolving Role of Global Business*. [online] (cited 24th October 2005) Available from <http://www.smeal.psu.edu/cgbs/speeches.html>

Sigillum Universitatis Islandiae (2000). Informational Technology. [online]
(cited first October 2005) Available from
http://www.hi.is/~joner/eaps/es_ithf.htm

Telephone interviews

Annika Marklund, CEO, Allinwood AB,
Interviewed 2005-10-25

Annika Widén, CEO, Smederöd AB
Interviewed 2005-10-25

Jan-Olof Alexandersson, CEO, Albin i Hyssna AB
Interviewed 2005-10-25

Bertil Hök, CEO, Hökinstrument AB
Interviewed 2005-10-26

Bert Karlsson, CEO, W.Ruberg AB
Interviewed 2005-10-26

Göran Spetz, CEO, Elastocon AB
Interviewed 2005-10-26