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School of Economics and Commercial Law
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Internationalising mobile telecommunication services

- Solutions for earthmoving equipment

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PREFACE

This master thesis has been written at the Department of Marketing, the Institution of Business Administration at the School of Economics and Commercial Law, Göteborg University during spring 2001. Our assigner has been Pilotfish Networks AB, situated in Gothenburg.

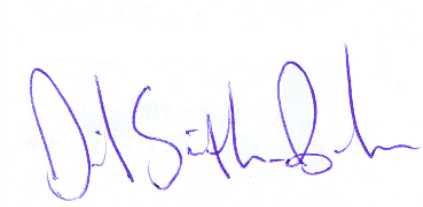
We greatly would like to thank our tutor, Joseph Molnàr, at the School of Economics and Commercial Law, for his valuable help and his heavy commitments. He has patiently reviewed the thesis several times and made useful comments.

Furthermore we would like to thank our tutor at Pilotfish, Pasha Rouzbeh, for giving us the opportunity to accomplish this thesis. We also would like to thank the other founders of Pilotfish, Per Kaiser, Karl Runeberg and Khalid Saiduddin.

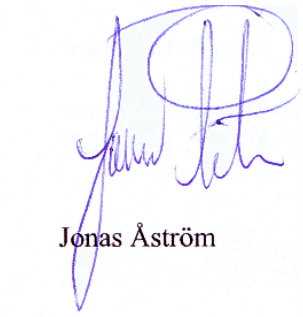
Finally we would like to thank all persons we have interviewed. Without your help we would not have been able to complete this thesis.

Our hope is that the thesis shall be of practical use for Pilotfish and we wish them all the good luck they need.

Gothenburg, 04/06/2001



Daniel Smith-Berndtsson



Jonas Åström

INFORMATION ABOUT THE AUTHORS

Gothenburg, 04/06/2001

Daniel Smith-Berndtsson was born in 1973 in Gothenburg where he also has grown up. He is studying at the Service Management Programme and the ADB-programme at the School of Business and Commercial Law at Göteborg University. He is almost finished with his Master of Science in Business Administration and he has approximately 1 year left before completing his Master of Science in Informatics. Further information is available at the author's website: <www.mobileservices.nu>

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SUMMARY

Internationalisation of mobile services is a very interesting topic and it is a natural continuation of our candidate thesis about mobile services for families with children[1]. The assigner for this thesis is the Swedish company Pilotfish Networks AB based in Gothenburg. The firm is a provider and operator of e-services and Telematics solutions and their first market were mobile surveillance, diagnostic and monitoring services for boats, with their product/service solution called seaKey. The company now intend to add new products with technological and/or marketing synergies with the existing product line (seaKey). They have come to the conclusion that the market of earthmoving equipment is very interesting where surveillance, diagnostic and monitoring of the machines are crucial. The term earthmoving equipment is a generic expression for machines designed for building construction and other construction work. Thus Pilotfish are mainly going to offer diagnostic, surveillance and monitoring services. The *diagnostic services* are for analysing the engine and detecting anomalies to be able to prevent engine breakdowns. The *surveillance services* are supposed to prevent theft of machines and making it possible to locate stolen ones. The *monitoring services* will make it possible for the owners of machines, mainly owners of several machines, to monitor the fleet and thus giving him/her more control. Further on in the thesis these three types of services will be referred to as surveillance, diagnostic and monitoring services. The main reason for not starting out with Sweden is because the market potential is believed to be too small. Thus, we intend to study which course of action a mobile services company should take when internationalising mobile services. We are looking at 11 different countries in Western Europe.

Our main problem*, How should a mobile services company internationalise,* is divided into two sub problems: a) *Make an analysis of foreign markets and select the most interesting market* and b) *Make an analysis of potential entry strategies and recommend an entry strategy in the selected market.*

In the frame of reference we discuss some differences between products and services internationalisation strategies. When it comes to product internationalisation theories, there are often step-by-step models for the international process. Regarding services, Roberts[2] claims that the business service firm also passes through a number of stages in the process of internationalisation, while Grönroos[3] makes a division into direct export, where no step-by-step learning can take place because the service has to be produced immediately, and systems export, where the company follows manufacturers they are supplying with services at their national market.

Moreover we introduce two ways of choosing target markets, i.e. by an opportunistic or a systematic identification. In an opportunistic identification of a market, the company receive information about an opportunity whereas systematic identification occurs when the company systematically investigate a number of markets and finally choose the most interesting market. We familiarize with Gozzo et al[4] and their opportunistic model in addition to Molnàr and Nilsson Molnàr's[5] systematic four-step model. Finally we discuss

[1] See our website, <www.mobileservices.nu>
[2] Roberts, J, [1999]
[3] Grönroos, C, [1999]
[4] Gozzo, M, Palm, G and Palmstierna, R, [1996]
[5] Molnàr, J and Nilsson Molnàr, M, [1999]

different types of entry modes, some of their advantages and disadvantages, and which criteria that influences the choice of entry mode.

When selecting our frame of reference, we found out that the best way for our assigner to select interesting markets is to use a systematic market selection approach. The main reason is that when internationalising a solution like Pilotfish's with a generic Telematics platform and mobile services connected to it, the actual product makes the internationalisation similar to a company internationalising a sole product. To be able to select the most interesting market and recommend entry strategy, we have collected both primary data, in terms of qualitative interviews with people within the business, and secondary data in terms of statistics, etc.

Regarding the market selection, we have found out in the preliminary screening that the most interesting countries for further research were Germany, France and Great Britain. The reasons were mainly because of excellent GSM coverage and a very high market potential. Finally we have concluded that Great Britain is the most attractive country to start out with and enter. Several persons interviewed agreed that the market potential is crucial and that Great Britain has a very large potential market. The reason for not choosing the country with the largest market potential, i.e. Germany, is mainly because Pilotfish already has a representative in Great Britain and several business contacts. The company demand is also estimated to be higher there.

When it comes to entry strategy, we have come to the conclusion that Pilotfish should keep their sales representative and possibly establish one or two more with knowledge within the area of earthmoving equipment. Pilotfish may both try to influence the pre- and the post-markets, i.e. on the pre-market some manufacturer of earthmoving equipment in the first hand and secondly a seller of the machines, and on the post-market owners of several machines. Furthermore, we believe that a joint venture is appropriate at a later stage, i.e. when Pilotfish has been able to investigate the different needs within the market and made adaptations to them. If the joint venture with a manufacturer of earthmoving equipment should succeed, systems export throughout several countries could arise, possibly making Pilotfish's solution worldwide.

In conclusion, the type of mobile service solution that Pilotfish offer consists of both a generic Telematics platform, i.e. a product, and several mobile services connected to it. Therefore we believe that an approach like ours is preferable. On the other hand, if a company should internationalise with solely a mobile service, i.e. with no need of a specific product, the situation might be radically different. Thus, there are probably differences if the mobile service is attached to a product or not. A single mobile service "only" has to be transported through a bearer like GSM, whereas Pilotfish's mobile service solution is attached to a product and physically has to be transported and implemented with *another* product, in this case earthmoving equipment.

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1 BACKGROUND, RESEARCH PROBLEM AND PURPOSE

In this chapter we will introduce our assigner and give a short background of how the internationalisation of products and services looks. We will also present the purpose and problem of our thesis. Finally we will introduce a layout of the whole thesis.

1.1 Introduction

Mobile services and Telematics are amongst the most discussed and vital topics of the IT-world at this moment and Sweden is seen as the centre of the so-called mobile revolution. Most new technologies are exposed to exaggerated demands and expectations in the beginning.[6] Gradually the interest diminishes, before it increases again and reaches a broader user group. An example of this development is the e-business sector on the Internet. It went trough an enormous hype and now has declined in many aspects. It seems that the mobile services business has followed the same course. The past year the business has been the centre of attention of the IT-world and is now entering a new phase where venture capital is pulling back, fewer companies are established and people in the business and the media have reduced their expectations[7].

At the same time the demands on the existing companies have increased. Strategies and basic data for decision-making have become more and more vital for the survival of the companies. The potential market is global, as is the competition. The investors and the company networks both exceed national boarders and there are large commonalties between different markets and the industry is closely related to the telecom, datacom and Internet industries, which all are global in their characteristics.[8]

Like our assigner Pilotfish Networks, many of the companies are small but with the intention to become, as fast as possible, a large or dominant actor in the global market.[9] To be able to make the right decision there is a need for thorough research. Thus, writing a thesis about how a company in the mobile services business should internationalise would be of interest. According to us, the subject is of great importance and fits well with our intention of a continuation of our first thesis "*Mobile services for families with children –A way of creating long-term relationships for the automobile industry!?*".[10] The assigner was Volvo IT and the focus was on relationship marketing and mobile services. The centre of attention was the Business-to-Consumer (B2C) market.

The mobile services- and Telematics business is a fairly new area. Therefore there is little or no academic research done. Our hope is that this thesis will give a deeper understanding of the internationalisation of mobile services businesses. We also intend to investigate the problems and possibilities associated with it, especially when selecting and entering the appropriate markets.

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[6] Gartner Group. Referred to during interview with Peter Gustafsson at Inserve, [2000-10-13]
[7] Interview with management at Pilotfish Networks, [2000-10-23]
[8] Eriksson, O and Grönborg, R, [2000]
[9] Interview with management at Pilotfish Networks, [2000-10-23]
[10] Smith-Berndtsson, D and Åström, J, [2000]

1.2 Mobile telecommunication services

Mobile telecommunication services are all types of services provided wirelessly through telecommunications systems, e.g. GSM, regardless if the "user" is a person or a machine. It is commonly referred to as mobile services. To be able to access the services a person needs a device, e.g. a mobile phone or a Personal Digital Assistant (PDA). A wireless module is needed when the "user" is a machine. Such a module is like a mobile phone without a display, buttons, a microphone or a loudspeaker. Instead hardware and software, memory and process capacity are added, that will make it able to transmit and receive signals. Usually modules are divided into two groups: Telemetrics and Telematics.[11]

Telemetrics is the technology involving automatic measurement and transmission of data from remote sources. The process of measuring data at the source and transmitting it automatically is called telemetry. Originally, data was transmitted over wires, but now Telemetrics frequently refers to wireless communication. Telemetrics applications include the monitoring of space flights, meteorological data transmission, videoconference, the GPS (Global Positioning System), wildlife tracking, camera control robotics, and oceanography.[12]

Telematics is derived from the French word Telematique[13] and refers to the use of computers alongside telecommunications systems. The goal is to efficiently conveying information over vast networks to improve a host of business functions or government-related public services. The most notable example of telematics may be the Internet itself, since it depends on a number of computer networks connected globally through telecommunication backbones. Telematics ranges from all forms of dial-up service, through the Internet, and onto broadband applications such as Full Service Network, i.e. a single network that integrate the transmission of voice, data, image and video together. A more precise definition of Telematics might relate to computer services offered from, or through, telecommunications systems. In a typical Telematics application a device collects the required data from a moving source. It is then transferred through a wireless network into a server from which it is made available through, for example, a web-application.[14]

When using the term mobile service in the thesis we mainly refer to the concept of Telematics, if not otherwise stated.

1.3 The company Pilotfish

The assigner for this thesis is the Swedish company Pilotfish Networks AB based in Gothenburg and it has around 25 employees. The firm is a provider and operator of e-services and Telematics solutions with an international perspective.

The company's technology allows free flow of information between the Internet and different types of local mobile and stationary networks. The users are given the possibility of virtually being able to log on to these systems/networks using a secured internet

[11] Sundström, N, [2000]
[12] Whatis.com's website, [2000-10-20]
[13] Ethoseurope website, [2000-10-28]
[14] Whatis.com's website, [2000-10-20]

connection or using mobile terminals such as regular mobile phones. Information on Internet can also be downloaded into these networks on demand and the process can be monitored remotely. Information can also be uploaded to the Internet to be used by, or shared with, third parties.[15]

The main product is a generic Telematics platform that enables other applications, i.e. mobile services, to be connected to it. Pilotfish has already developed its own service called seaKey[16], which has a set of remote monitoring and alarm services for boat owners that enables the owner to virtually enter the boat and check different parameters. This concept could be applicable to other products such as a car or a house. See figure 1:1 below. For industrial applications wireless monitoring, remote controlling and diagnostics systems are examples of possible services in the future. The main features and delivered customer values of the product/service are wireless control, surveillance and safety.

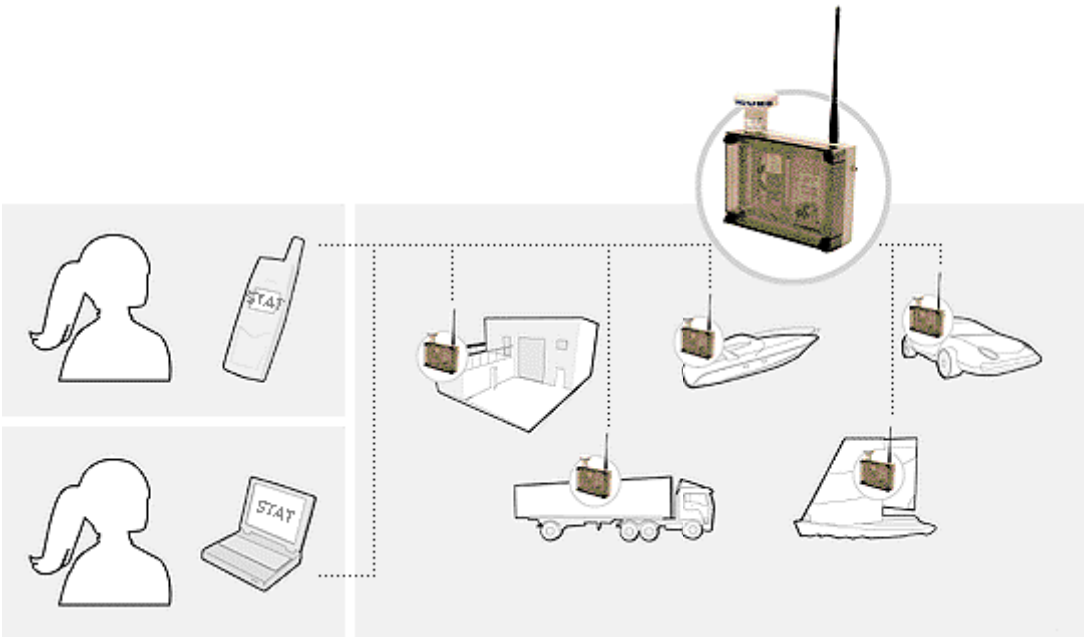


Figure 1:1 Pilotfish's concept.

Source: Pilotfish Networks website, [2001-05-01], <www.pilotfish.se>

Until now the company has been directed towards the consumer market with its product seaKey. Their target group is relatively small and the total potential market size is approximately 2 million users worldwide[17]. At an early stage the company decided that is was better to dominate a small target group and have well functioning product/services than be one of several actors competing in larger segments. This strategy has so far turned out well, attracting both larger companies as partners and owners and also venture capital. The experience that Pilotfish now has gained from working with strong partners and developing the product/service by themselves gives them a very strong competitive advantage. This knowledge and experience can make the difference between success and failure when the new strategy is applied.

[15] Pilotfish Networks website, [2000-10-12]
[16] SeaKey website, [2000-10-12]
[17] Interview with management at Pilotfish Networks, [2000-10-23]

The company is now looking into the Business-to-Business (B2B) segment and is currently investigating if their Telematics platform and seaKey is applicable to other markets, possibly the B2B market.

Several things will be different if Pilotfish decides to enter the B2B market. A company that is active in this market has completely different conditions and opportunities than a company focusing on the B2C segment. If the target market consists of other companies the company has to consider their businesses, their customers' needs, their business environments etc. The demand for the seller's service/product is derived, in the end, from the other company's customers' demand for whatever service/product they produce. All this makes it a very interesting segment, but at the same time the requirements and obstacles are hard and difficult.

If possible, seaKey can enter a new product category with none or very little modification. The strategies, skills and experience that the organisation has obtained earlier can be very useful when moving seaKey into another market. They are interested in using an expansion strategy that is like concentric diversification, i.e. they want to add new products with technological and/or marketing synergies with the existing product line (seaKey)[18]. They have come to the conclusion that the market of earthmoving equipment is very interesting where surveillance, diagnostic and monitoring of the machines are crucial[19]. The term earthmoving equipment is a generic expression for machines designed for building construction and other construction work. Examples of such machines are excavators, road graders and trucks.[20] See figure 1:2 below for examples.

Figure 1:2 Examples of earthmoving equipment.

Pilotfish are mainly going to offer three different types of mobile services, i.e. diagnostic, surveillance and monitoring services. The *diagnostic services* are for analysing the engine and detecting anomalies to be able to prevent engine breakdowns. This type of services would mainly be interesting for the machine owners and the producers of the machines. The *surveillance services* are supposed to prevent theft of machines and making it possible to locate stolen ones. The main persons interested would be the machine owners and insurance companies. The *monitoring services* will make it possible for the owners of

[18] Ibid.
[19] Ibid.
[20] Nationalencyklopedin website, [2001-04-28]

machines, mainly owners of several machines, to monitor the fleet and thus giving him/her more control. Further on in the thesis these three types of services will be referred to as surveillance, diagnostic and monitoring services.

The management also has the motivation to enter the international arena from start. The reason is that they believe that the Swedish market is too small. The risk and cost of entering a larger foreign market is compensated by the large market potential and possible profits in the future. The decision to go international is crucial and is very important for the company's future and existence. Pilotfish has never before exported any of their products or services, i.e. they lack experience in the internationalisation process. They only recently have located a sales representative focusing on the seaKey market in Great Britain, and he is employed by the company. Thus he only knows the seaKey market and has not got the knowledge in the area of earthmoving equipment.[21]

The management now feel that they need a solid base for their decision-making and assigned us to make a research in the area. Their problem and main concern is to be able to understand and choose the most appropriate foreign countries/markets to enter.[22]

1.4 Internationalisation

There are many central issues for understanding the changing global economy. The traditional way of doing business has been to capture the home market and start the expansion out in the world after a couple of years. For many companies it is a matter of survival when they decide to go global, especially in the IT-business where many companies are born into a worldwide business. Their marketplace is global and therefore internationalisation is of vital importance.

When it comes to services, they have mainly been seen as locally produced solutions, and service firms have been considered local establishments. The service sector is expanding over national borders, though slowly. The existence of significant non-tariff barriers in many service industries, the complex nature of service production and the belief among practitioners in service businesses that it is difficult to market services abroad, are according to Winstead and Patterson[23] the main reasons of the relatively slow growth of the internationalisation of services. Other more general obstacles for internationalisation of both services and manufactured goods are, according to them, lack of resources, too little knowledge about exporting and finally a belief that cultural and linguistic differences will make internationalisation too demanding. A rapid globalisation of the world economy during the 1990's, which probably will continue in the next millennium, has increased the opportunities for marketing services abroad.[24] Services are becoming increasingly internationalised – 1997 global exports of commercial services exceeded $1.3 trillion.[25] Services are now the fastest growing part of international trade.[26] They also account for a greater share of foreign direct investment than does manufacturing for the most developed economies of the world.[27] A major aspect of this trade growth has been

[21] Interview with management at Pilotfish Networks, [2000-10-23]
[22] Ibid.
[23] Winstead, K.F and Patterson, P.G, [1998]. Referred to in: Grönroos, C, [1999].
[24] Hassan, S.S and Kaynak, E, [1994]
[25] World Trade Organization, [1998]. Referred to in: Clark, T and Rajaratnam, D, [1999]
[26] Bradley, F, [1995]. Referred to in: Grönroos, C, [1999].
[27] Dicken, P, [1998]. Referred to in: Clark, T and Rajaratnam, D, [1999]

the information technology, especially the convergence of communication, computing, and entertainment technologies.[28]

When entering a new international market the firm's risk increases, but also its possibilities. The company must therefore prepare its business by adapting to the new market conditions. A company who wants to internationalise has the following important decisions to make according to Kotler[29]:

1. *Should the company establish itself or not in a foreign market?* The management must therefore examine if the company has any motive for internationalisation and if so, what kind of motive.

2. *What market or which markets are the most interesting?* The company should have a clear goal and vision. How attractive a market is depends on several factors such as the service or product, income level, political stability and climate.

3. *What is the best way of entering the new markets?* There are a lot of different possibilities, but direct and indirect exports are very common types.

4. *What part or which parts of the marketing mix should be utilised?*

5. *What kind of organisational adaptations are needed?*

In our opinion the first question is less relevant when it comes to mobile services. Instead, the key question for a firm in a global industry, such as mobile services, is not whether to globalise or not, but *how* and *how fast*. But of course the management may have different kind of motives when it comes to *why* the company should internationalise. As in the case with Pilotfish, they mainly have proactive motives such as technological advantage and managerial urge.[30]

In the mobile services business many of the involved companies are relatively small in turnover etc.[31] They are small in their size but their ambitions and predictions of future world market shares are large. Networks and co-operations with larger traditional companies are an essential part of their strategy. The step from being a domestic company to becoming an international actor is a key factor for these firms. Unfortunately, many of these aspiring global companies have difficulties when making the transition from a national to a global focus. Although the company may be an aspiring global business, it may be very complicated to choose which countries or markets to enter first, i.e. the selections of target markets, which are essential.

When a company has made a selection about which market to enter there is another very important question to ask, namely in which way the company should enter the market. There are several ways to do it, and the advantages and disadvantages must be evaluated. Furthermore the company has to choose what marketing mix to utilise when approaching the target market. There may also be a need of making organisational adaptations depending on, for example, what entry mode the management chooses to implement.

[28] Fisk, R.P, [1999]
[29] Kotler, P, et al, [1996]
[30] Interview with management at Pilotfish Networks, [2000-10-23]
[31] Ibid.

1.5 Research problem

Since the market of earthmoving equipment is totally new to our assigner Pilotfish i.e. they have not even entered the market in Sweden with their product/service solution, our thesis becomes more complicated. The reason is mainly that we are not able to relate to any earlier experience within the company.

The main interest for Pilotfish is to find the most attractive market opportunities and take advantage of them. But where are the best markets and which criteria should be used for choosing the markets? It is important to remember though, that companies seldom have enough resources to take advantage of every opportunity and this means that some areas must be left alone. Thus, it is crucial to select the most prosperous countries/areas for further internationalisation.[32] Bradley[33] discusses two types of cost associated with choosing the wrong market, namely the actual cost of unsuccessfully attempting to enter the wrong market and the associated opportunity cost of missing successful market opportunities, which suggests a thorough and careful selection of the new markets.

Main problem: *How should a mobile services company internationalise?*

We will have to se whether a systematic or an opportunistic approach is most suitable when choosing a foreign market and we must consider the fact that this type of mobile service solution consists of a mobile service connected to a product. To be able to solve our main problem we have chosen to divide it into these sub problems:

Sub problems:

a. Make an analysis of foreign markets and select the most interesting market.

b. Make an analysis of potential entry strategies and recommend an entry strategy in the selected market.

The reason for the division into subproblems is to make it more clear what the problems are and what information we need.

According to our assigner, there are a number of different countries that are interesting for further analysis, namely (not in any specific order) the ones in table 1:1 below. The company Pilotfish have chosen these countries mainly because they believe these are the most interesting within Europe. Therefore we do not intend to investigate any other countries/areas.

[32] Daniels, J and Radebaugh, L, [1995]
[33] Bradley, F, [1991]

Table 1:1 Countries for investigation.

1. Austria	2. Belgium
3. Denmark	4. Finland
5. France	6. Germany
7. Ireland	8. Norway
9. Switzerland	10. The Netherlands
11. The Great Britain	

1.6 Purpose

Our purpose is to study which course of action a mobile services company should take when internationalising mobile services.

1.7 Perspective and relevance

This thesis will be written with the perspective of a mobile service *company*. When it comes to relevance, our general opinion is that the subject is very relevant to any company who wants to internationalise mobile services. Not only our assigner.

1.8 Layout of the thesis

To enhance the clearness of our thesis we have chosen to summarise the layout of the chapters in figure 1:3 below.

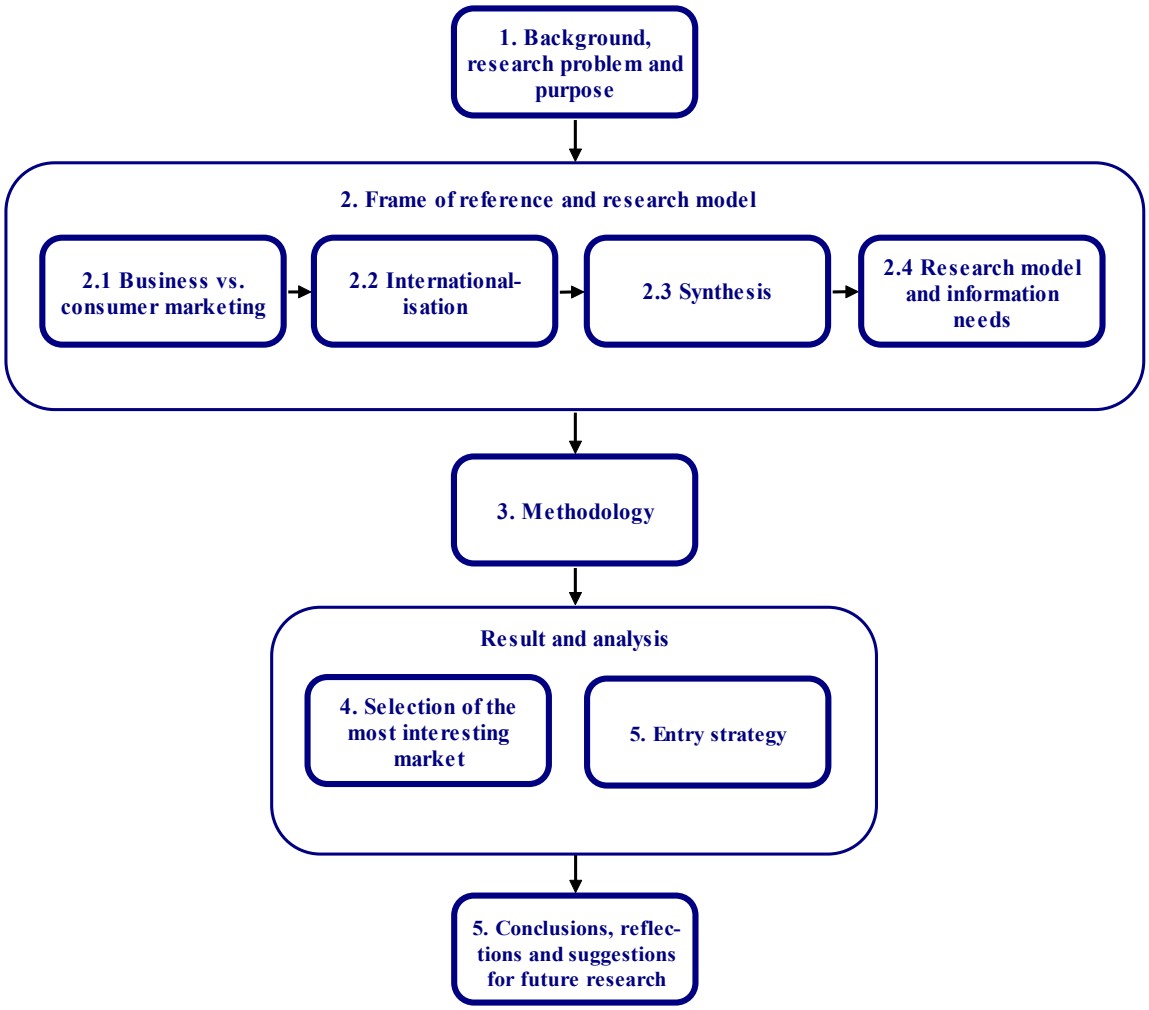


Figure 1:3 Layout of the thesis.

In chapter 1 we will give a short introduction to the concept of internationalisation, introduce our assigner and our research problem. In chapter 2 we will develop a frame of reference, i.e. present a deeper knowledge regarding internationalisation. Concepts like market selection and different entry modes will be discussed. The chapter will end up with a synthesis and a research model including the information needs. In chapter 3 we will present the methodology chosen for our research and also different advantages and disadvantages involved with it.

In the following chapters 4 and 5, we will make recommendations concerning what market our assigner should choose for implementing their products/services and also make recommendations about what entry mode suits there intensions most. Finally, in chapter 6, we will make a summation of our conclusions, give some reflections and make suggestions for future research.

2 FRAME OF REFERENCE AND RESEARCH MODEL

In this chapter we will first discuss some differences between business and consumer marketing. Furthermore we will discuss the internationalisation process and especially market selection theories. We will also make a comparison between products and services and discuss different entry modes and their advantages and disadvantages. Finally we will end the discussion with a synthesis and our research model.

2.1 Business and consumer services marketing

There are a number of differences between industrial and consumer marketing worth mentioning, for example complexity, buyer/seller interdependence, functional dependence and the buyer process.[34] When entering new markets and internationalising a service, especially when changing from a consumer market focus to an industrial market focus, it is of great importance, according to us, to take these differences into consideration.

2.1.1 Complexity

One of the prime differences between consumer and industrial marketing is the complexity. The business offerings consist of complex systems of products and services. Flodhammar et al[35] argue that a function is sold and not a product. The foremost goal is to develop systems that solve a problem, in cooperation with the customer. According to Webster[36] it is necessary to fulfil the true needs of the customer and not to focus entirely on the technical aspects and the product/service.

2.1.2 Buyer/seller interdependence

Buyer/seller interdependence is connected to the fact that there is a derived demand in industrial markets. This is because the customers' customers' underlying need is influencing the demand and it is of great importance that the supplier pay attention to this regarding industrial goods. This derived demand is one main characteristic of industrial marketing. Webster[37] states that industrial customers' purchases reflect their expectations about their future product demand.

The interdependence comes from the fact that a seller may be dependent on the customer if this company is very significant for the seller's turnover. On the contrary, the buyer is dependent on the supplier for inputs regarding for example delivery, repairs and quality.

[34] Webster, F.E Jr, [1991]
[35] Flodhammar, Å et al, [1991]
[36] Webster, F.E Jr, [1991]
[37] Ibid.

2.1.3 Functional interdependence

Further, according to Webster[38], functional interdependence exists due to the nature of industrial marketing requires all functions, including R&D, engineering etc, must be customer oriented. Webster[39] argues that a marketing-oriented industrial company is often much closer to its customers than the typical marketing-oriented consumer company.

2.1.4 The buyer process

When studying literature on buyer behaviour, emphasis is almost exclusively on consumers and not industrial buyers. But of course there are exceptions. Webster and Wind[40] stress that research about consumers neither are applicable nor have much relevance for the industrial marketer. According to them the reason for this is that there are several differences between industrial and consumer purchase processes. Industrial buying takes place in an organization influenced by a lot of different people, budget, cost etc. Flodhammar et al[41] stress that the representatives of the companies are both professional buyers and seller. They also emphasize that the complicated purchasing process often results in a long relationship between the buyer and the seller. A lot of research during the last decades support this fact.[42] Networks connect these business relationships, where the parties must build mutual trust and knowledge through interaction. The different networks are more or less international, but when it comes to international markets the company is engaged in an extended network comprising of a number of actors, e.g. foreign distributors, customers and agents.

2.1.4.1 Consumer marketing

In consumer marketing the point of sale is often where the buyer-seller relationship ends, although the attitude is changing. The term 'lifetime customer value' is becoming more popular. Berry and Parasuraman[43] stress the significance of building a stabile and prolonged relationship with the customer and react and adapt to different stages in a person's life. Normann[44] also emphasizes this. We agree and believe that the term 'lifetime customer value' is important in both customer and industrial marketing, although it may have been understood by the business market to a greater extent. Further, when it comes to customer buyer behaviour, the traditional customer is influenced by the surroundings he/she is situated in, sometimes even without knowing it, according to Kotler[45]. The factors influencing the customer's buyer behaviour may be divided into four groups: cultural, social, personal and physiological factors.

2.1.4.2 Business marketing

Webster and Wind[46] indicate that there are four different categories of variables determining the business buyer behaviour: individual, social, organizational and

[38] Ibid.
[39] Ibid.
[40] Enis, B.M and Cox, K.K, [1985]
[41] Flodhammar, Å et al, [1991]
[42] Forsgren, M and Johansson, J, [1992]
[43] Berry, Leonard, L, Parasuraman, A, [1991]
[44] Normann, R, [1992]
[45] Kotler, P, et al, [1996]
[46] Enis, B.M and Cox, K.K, [1985]

environmental factors. There is also a division of every category into task and non-task variables. Task variables are those directly related to the buying problem and non-task factors are those that extend beyond the problem. Although one dimension may be predominant in any given set of variables, there are often both task and non-task dimensions. A buyer behaviour model can help the marketer to analyse available information about the market and to identify the need for additional information.

2.2 Internationalisation

2.2.1 General expansion strategies

According to Kotler[47] a company may have a growth strategy that is intensive, integrative or diversified. This is true whether the firm intends to internationalise or not. Intensive growth is when the corporation identifies opportunities within its current operations. There are three key types of intensive growth, i.e. market penetration, product development and market development.

		Markets	
		Existing	New
Products	Existing	Market penetration	Market development
	New	Product development	Diversification

Figure 2:1 Product/market expansion matrix.

Source: Modified from Molnár, J and Nilsson Molnár, M, [1999], p. 29

In figure 2:1 above we can see that market penetration is when a company seeks to increase sales of existing products on its current markets, for example by more aggressive marketing. Product development means that the company tries to increase sales on existing markets by introducing new or improved products. When the company takes its existing products into new markets it is called market development.[48]

Integrative growth takes place when the company seeks to expand through integration with other parts of the marketing channel system. The integration can be of three different types, i.e. backward, forward and horizontal. Backward integration is when the company seeks to gain increased control of the supply systems. If the company tries to increase

[47] Kotler, P, [1986]. Referred to in: Molnàr, J and Nilsson Molnàr, M, [1999]
[48] Molnàr, J and Nilsson Molnàr, M, [1999]

control of its distribution systems it is called forward integration. When the company seeks ownership of its competitor it is a matter of horizontal integration.[49]

Diversification growth occurs when the company finds opportunities outside the current marketing channel system, i.e. new products for new markets in figure 2:1 above. There are three different types: concentric, horizontal and conglomerate. Concentric diversification is when the company wants to add new products with technological and/or marketing synergies with the existing product line. This type of products normally appeals to new classes of customers. When the company wants to add new products that could appeal to its existing customers through technology unrelated to its current product line, it is called a horizontal diversification. Conglomerate diversification occurs when the company desires to add new products unrelated to the company's current markets, products or technology.[50]

As we discussed in the background Pilotfish has a concentric diversification strategy.

2.2.2 Internationalisation strategies

2.2.2.1 Products

When studying literature about a firm's process of internationalisation, the process is often associated to the Uppsala-model by Johanson and Wiedersheim-Paul[51]. This model is based on the assumption that a company wants to minimize risks and there are four different levels that a company passes through:

1. No regular export activities.

2. Export through regular representatives (agents).

3. Establishment of sales division abroad.

4. A production unit is established abroad.

There has been many attempts since the Uppsala-model to develop more sophisticated step-by-step models for the international process in the traditional manufacturing sector, e.g. by Czinkota and Ronkainen[52]. The process can start in a minor scale using indirect export channels followed by several steps towards more direct channels. In the beginning of the process the manufacturing firm therefore does not fully have to understand quality expectations, distribution structures etc, on the foreign market according to Grönroos[53].

2.2.2.2 Services

According to Grönroos[54] the service firm mainly has two alternatives regarding export strategies: direct or systems export. Direct export usually takes place on industrial markets, e.g. consultants and firms repairing and maintaining valuable equipment. The

[49] Ibid.
[50] Ibid.
[51] Johanson, J and Wiedersheim-Paul, P, [1975]
[52] Czinkota, M.R and Ronkainen, I.A, [1998]
[53] Grönroos, C, [1999]
[54] Ibid.

company may have its base on the domestic market and when needed, they move the resources and system required to produce the service abroad. The risk of making mistakes can be substantial because no step-by-step learning can take place. This is because the service has to be produced immediately.

Systems export is when two or more firms, whose solutions complement each other's, export together. For example when a manufacturer delivers equipment or turnkey factories to international buyers, there is a need for engineering services, distribution and cleaning. Systems export is the traditional mode for service export and the international services are mainly marketed in industrial markets.

Professor Grönroos[55] also emphasizes that service firms traditionally start going abroad by following manufacturers that they are supplying with services at their national market, i.e. systems export. Following existing clients when they go abroad is a common way to internationalise. According to Weinstein[56] and Vandermerwe & Chadwick[57] it may be an opportunity, but the service firm may also feel obliged to do so, e.g. because the clients are very important. In the last few years, the development of new technologies for electronic commerce has made services less dependant on local operations and thus, ways of internationalisation has become more diverse according to Winstead and Patterson.[58] Professor Fisk[59] points out that the development of new technology is satisfactory, but he means that an over-reliance on technology and insensitivity to customer needs are quite dangerous. He further stresses that technology for the customer merely is the means to the end rather than the end itself. Smith-Berndtsson and Åström[60] agree in their thesis about mobile services and emphasize that a mobile service must add value to the user and also be filled with a relevant content that pleases the customer.

Furthermore, the technology today has made it possible to internationalise in completely different ways. The Internet, satellite communication and digital television etc create new possibilities for all firms. Grönroos[61] implies that service firms in many cases do not choose to go abroad. Instead potential customers on foreign markets pick up service offers for a domestic market and require the firm to deliver internationally as well.

With the information above in mind, the three different types of strategies therefore are:[62]

1. Client-following mode
2. Market-seeking mode
3. Electronic marketing mode

Grönroos[63] emphasizes that these types are not mutually exclusive. A firm using the Internet as a form of electronic marketing mode can do this deliberately to get access to

[55] Ibid.
[56] Weinstein, A.K, [1977]. Referred to in: Grönroos, C, [1999].
[57] Vandermerwe, S and Chadwick, M, [1989]. Referred to in: Grönroos, C, [1999].
[58] Winstead, K.F and Patterson, P.G, [1998]. Referred to in: Grönroos, C, [1999].
[59] Fisk, R.P, [1999]
[60] Smith-Berndtsson, D and Åström, J, [2000]
[61] Grönroos, C, [1999]
[62] Ibid.
[63] Ibid.

international markets. Thus, it is also a market seeking strategy as well as electronic marketing.

Further, the core of the service internationalisation process according to Edvardsson, Edvinsson and Nyström[64] is strongly connected to the package of the strategic knowledge. The ability to solve the customers' problems and to satisfy the customers' desires and needs, are important issues. When translating the service concept to a new cultural and linguistic environment there is of great importance that the company has a clear and distinct packaging solution that creates legitimacy. We believe that this is important whether or not it is a service or a product the company is going to internationalise. Furthermore according to Edvardsson, Edvinsson and Nyström[65] there are some strategic conditions a firm can influence in the long term, i.e. the competence, financial resources, internal and external relationships and finally image and expectations. The authors emphasize the great importance of creativity within the firm and to develop fresh ideas. The most important condition is the competence within the firm, i.e. research and development (R&D). As a consequence, financial capital is needed. When it comes to a successful internationalisation a proactive approach is preferred. Intuition and creativity is more important than analysis and predictability.

Relations within the company and with other companies through networks are essential to be competitive and to be able to be successful regarding for example R&D. Edvardsson, Edvinsson and Nyström[66] also state that their studies have shown that experience, useful contacts and stimuli of collaborators are not valuated enough. These aspects must be quantified to be able to make a correct picture of international investments, although they are difficult to measure. This is also supported by the Network theories, where the industrial market is built by relationships between different actors on the market.[67] These relationships are often "intimate" and long-term, since it is complicated and expensive to change business partners. To be able to be competitive and to establish a positive image within the customers' minds, there is a need of different marketing activities, which also require more financial capital.

Roberts[68] claims that the business service firm passes through a number of stages in the process of internationalisation. The length of time spent in each stage and which stages the firm passes is variable. The service firm may even skip one of several stages, e.g. through a merger or acquisition. The five stages are:

1. Provision of services to domestic clients only – i.e. no export.

2. Provision of services to foreign clients in the domestic market – domestically located exports.

3. Provision of services to foreign markets through embodied service exports (e.g. a report that is sold internationally by a company), transhuman exports (e.g. a lawyer or a doctor working outside the home country) and wired exports (i.e. music distributed through e.g. the Internet).

[64] Edvardsson, B, Edvinsson, L and Nyström, H, [1992]
[65] Ibid.
[66] Ibid.
[67] Hammarkvist, K-O, Håkansson, H and Matsson, L-G, [1982]
[68] Roberts, J, [1999]

4. Establishment of a presence, e.g. a subsidiary, in the new market through which to deliver a service largely produced in the home market – i.e. intra-firm exports.

5. Establishment of service production facility in the overseas market.

According to Roberts[69] business services are exceptionally diverse and include activities concerned with both handling tangible products such as machinery repair or catering, and providing intangible expertise, like accountancy or consultancy services.

2.2.3 Motives

Czinkota and Ronkainen[70] are discussing the major internationalisation motivations of small and medium-sized firms and differentiate them into proactive and reactive motives. See table 2:1 below. Proactive firms are stimulated to attempt strategic change, i.e. these businesses become international because they want to. Reactive motivations influence firms that are responsive to environmental changes and adjust to them by changing their activities over time, i.e. reactive firms go international because they have to.

Table 2:1 Different exporting motives.

Proactive motives	Reactive motives
Profit advantages	Competitive pressures
Unique products	Overproduction
Technological advantage	Declining domestic sales
Exclusive information	Excess capacity
Managerial urge	Saturated domestic markets
Tax benefit	Proximity to customers and ports
Economies of scale	

Source: Czinkota, M.R and Ronkainen, I.A, [1998]

2.2.4 Choice of foreign target markets

A choice of a foreign market is associated with a lot of possibilities but also limitations. There may be difficulties in choosing the most appropriate ones and a large potential market may for example be more difficult to reach or take a longer time to establish than a smaller market. There is also a need to examine the advantages and disadvantages and balance them with the internal resources of the company and the vision of the management. Moreover, the product or service must possibly be brought into line with the consumer needs.[71] The time to market is crucial but it is important to remember that the time *on* market is equally crucial.

[69] Ibid.
[70] Czinkota, M.R and Ronkainen, I.A, [1998]
[71] Holmvall, L, [1995]

According to Bradley[72], the knowledge of the market opportunities can be based upon three alternative ways as seen in figure 2:2 below.

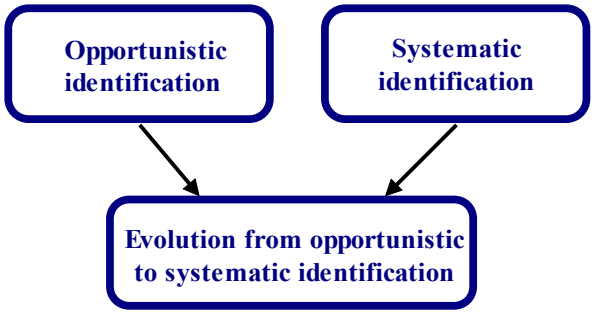


Figure 2:2 Different market selection strategies.

Source: Bradley, F, [1991], p. 214

In an opportunistic identification of a market, the company receive information about an opportunity by, for example, a spontaneous request from a country not importing the product. Systematic identification occurs when the company systematically investigate a number of markets and finally choose the most interesting market. Evolution from opportunistic to systematic identification may be seen as a combination of the first two alternatives. In this approach the company detects an opportunity on a certain market and evaluate this opportunity and compares it to other interesting markets in a systematic way.

2.2.4.1 Opportunistic market selection

Gozzo et al[73] have developed a market selection model based on an opportunistic view. According to them, the choice of markets is relatively random and it is often a spontaneous order from a foreign country that initiates the export. Agents from different countries may also have contacted the company. Eventually the company may be represented in many countries, but it is possible that the sales volumes are low on most of the markets. It is not unusual that the company, for the first time, starts to evaluate the markets more thoroughly and systematically.

Since the "life expectancy" of many products has been shortened during the last decades, i.e. the life cycle is shorter, and new products and services enter the market frequently, a company cannot explore market by market in a slow and sequential way. If it does, there is a risk that other companies grab a large share of other important markets. Therefore it is of importance to study the market potential and explore the size of the market segments. Gozzo et al[74] also emphasize the importance of finding the right companies to cooperate with.

The model is based on a competition analysis. The company first chart its most important competitors, which market segments they have and where they have their existence. The next step is to give priority to the markets where the competitors are weak or are not present. When the company have a strong position on the chosen markets it is time to enter the other markets where the competitors are stronger. It is the competitors who are

[72] Bradley, F, [1991]
[73] Gozzo, M, Palm, G and Palmstierna, R, [1996]
[74] Ibid.

the company's opponents and because of that, it is crucial to know them and chart them. But it is also important to consider the company's internal resources, potential of the market, cultural distance etc. If a company is financially or technically superior to its competitors, it is possible to enter the markets where the competition is stronger, much faster than described above.

2.2.4.2 Systematic market selection

There have been many attempts to develop systematic market selection models. Molnàr and Nilsson Molnàr[75] have developed a four-step model for selecting the right target market. This model is a further development of Root's[76] model of systematic market choice. These models are not focusing on the traditional step-by-step strategies of internationalisation. Instead they concentrate on the most appropriate markets according to different criteria, whether they are neighbouring countries or not. The four-step model tries to give answers to the following questions:

- What is the market potential of the selected foreign markets?
- What are the sales potential for competing companies on the selected foreign markets?
- What are the company's sales possibilities in the selected markets?
- What segments of the chosen markets should the company concentrate its export marketing efforts?

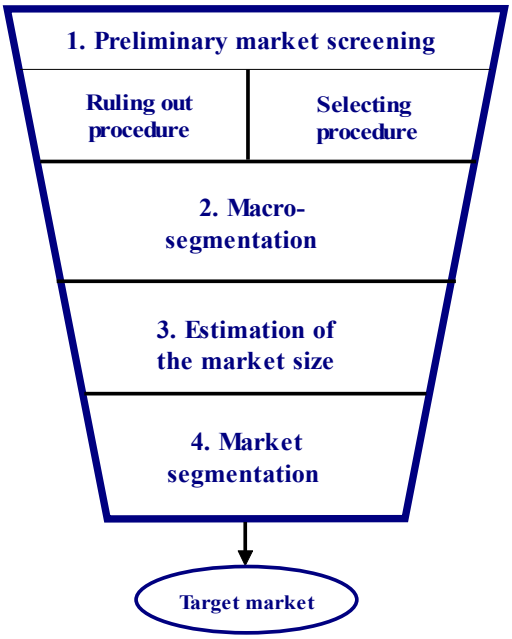


Figure 2:3 The four-step market selection model.

Source: Modified from Molnár, J and Nilsson Molnár, M, [1999], p. 33

[75] Molnàr, J and Nilsson Molnàr, M, [1999]
[76] Bradley, F, [1991]

There are of course four main steps in the model as seen in figure 2:3, namely preliminary market screening, macro segmentation, estimation of the market size and market segmentation.

Step 1: Preliminary market screening

The first step in the four-step model is divided into two parts, namely the ruling out procedure and the selecting procedure. The ruling out criteria are general factors at a macro economical level, while the selection criteria are more company specific factors. The techniques used in this screening should be based on easily available data useful enough to sort out the more attractive from the less attractive markets.

The ruling out process means that the less important markets will be ruled out and the more attractive ones kept for further investigation. The ruling out criteria could be, for example, technological, economical, demographical or political factors in the different countries. Examples of factors are level of technological development, technological skills, standard of living, GNP, size of population and political stability. According to Molnàr and Nilsson Molnàr[77] the ruling out criteria must be ordered in a sequential way, in order of importance, since it is very important for the outcome. The ruling out is mainly done to keep costs as low as possible when further investigation is to be done.

When it comes to the selecting procedure it is considered to be more suitable for industrial products than consumer products, because users of industrial products are usually fewer than consumer product users and thus it is easier to identify them in their foreign markets.[78] It consists of several important external and internal criteria. The external criteria are often divided into barriers for internationalisation and macro/micro environmental factors. Since every company has its own internal variables important to them, every product has its own character and every market is unique, the selection criteria can be almost anything, for example financial and personal resources within the company or any product specific criteria.

The final part in the preliminary market screening process is to compare the results and finally select the markets that are the same in the two parts.

Jeannet and Hennessey[79] describe another classification, which does not differ company related criteria from general criteria, divided into four main areas. These four criteria are size of market and growth, political conditions, competition and market similarity.

Step 2: Macro segmentation

The main purpose of the macro segmentation is to divide the market appropriately to be able to measure the market size in quantitative terms (step 3). The market can be divided into product groups, product sub-groups, industries etc.

Step 3: Estimation of the market size

[77] Molnàr, J and Nilsson Molnàr, M, [1999]
[78] Ibid.
[79] Jeannet, J.P and Hennessey, H, [1988]

After the macro segmentation it is time to estimate the market sizes of the selected markets in step 1. It is possible that the market size is too small, the competition too strong or the rate of growth too low.[80]

There are different factors influencing the market size, namely country related factors and demand related factors. The country related factors are different trade barriers and the competition on the market. Examples are customs regulations, import duties and product requirements. The demand related factors depend on how the market and the product are defined. Product within the same product category must not necessarily compete with each other. These factors are crucial when estimating market shares etc. Molnàr and Nilsson Molnàr[81] discuss four important features to take into account, i.e. the product definition, the unit of measurement, the level of measurement and the market definition.

A wide product definition means a big potential market and a small market share and vice versa. When it comes to unit measurement there is a large difference if the company uses a monetary or a physical measure. Monetary measures may cause problems with exchange rates and a physical measure may be difficult if the product is integrated within another product group. If using a monetary measure, there will be different results depending on the level of measurement, i.e. if the measurement is made on the producer level or retail level. Finally it is important to decide the market definition, i.e. if one is to consider a whole country or a region.

The market size can be measured in terms of market potential, market demand and company demand.[82]

- Market potential – the total market including the future and existing market for the product or service.

- Market demand – the total sales of the product or service when it comes to all the competing companies.

- Company demand – the specific company demand for the product or service.

All these different types can be divided into two sub categories, namely past/current demand and estimated future demand. To be able to estimate these types of market sizes, the macro segmentation done previously is of great importance. There are many different types of measurement methods illustrated in figure 2:4 below.

[80] Porter, M.E, [1990]. Referred to in: Molnàr, J and Nilsson Molnàr, M, [1999]
[81] Molnàr, J and Nilsson Molnàr, M, [1999]
[82] Molnár, J, [1990]

	Market potential	Market demand	Company demand
Past/ Current	**Methods** See →	**Methods** -Analysis of trade stats -Analogies -Expert judgements -Etc.	**Methods** -Analysis of internal data
Future	**Methods** See →	**Methods** -Time series analysis -Leading indicators -Statistical demand analysis -Analogies -Expert judgements -Etc.	**Methods** -Estimation of market shares on the basis of company... -strategies -goals -internal factors and -market conditions

Figure 2:4 Market size measuring methods.

Source: Molnár, J and Nilsson Molnár, M, [1999], p. 40

Step 4: Market segmentation

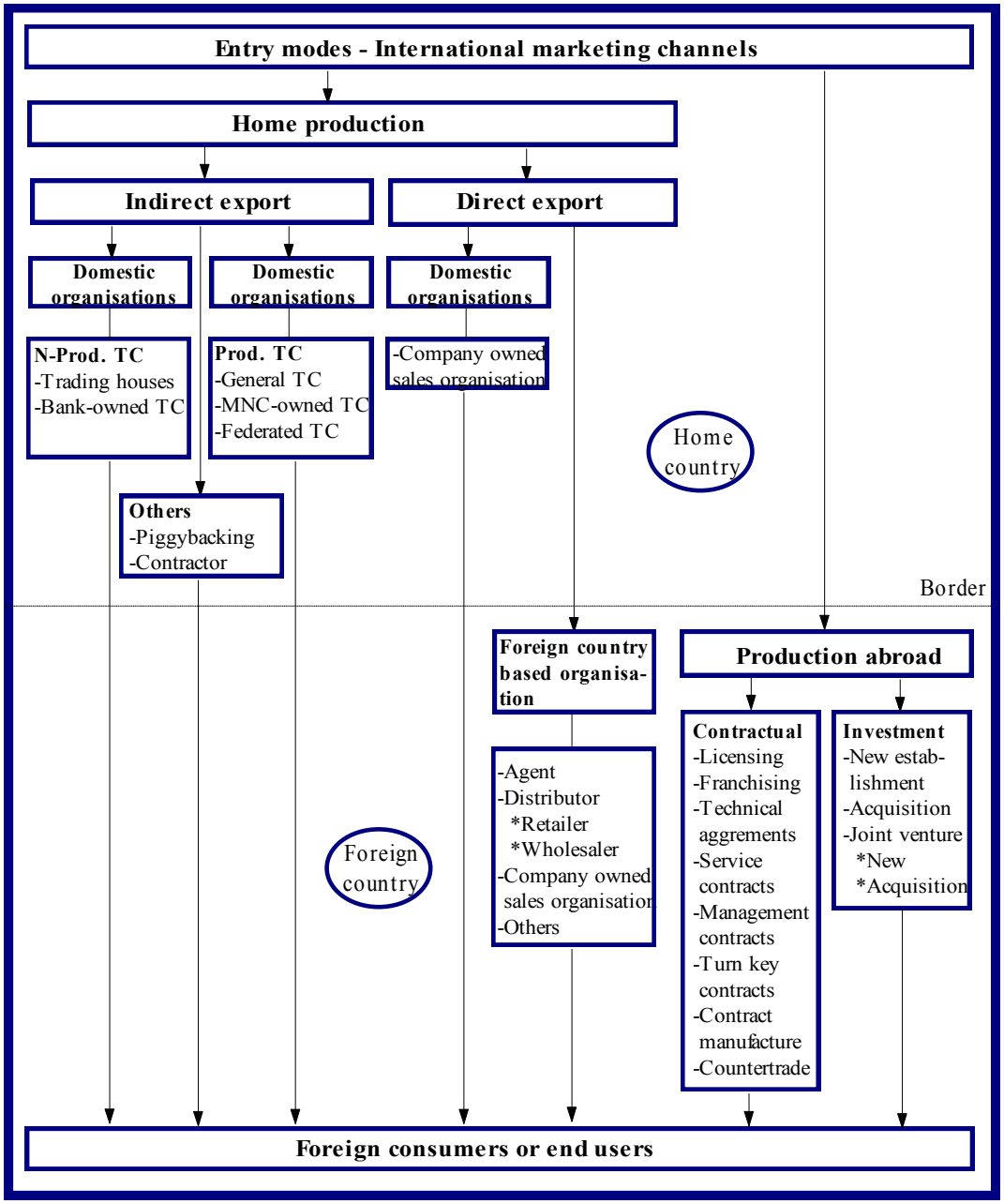
When segmenting the potential market, it is divided into several distinct groups of buyers. This is done because different segments often need different types of marketing mixes.[83] The foreign markets are also most often different from the domestic market, when it regards for example culture and demographics. It is also possible to segment the potential customers into categories like distributors, wholesalers and end-users. The last type may be for example a consumer, a service business or an industrial business.

2.2.5 Establishment and entry modes

2.2.5.1 Different types of entry modes

There is a lot of different entry modes discussed when it comes to manufactured goods, divided into direct and indirect modes.[84] Different markets may need various types depending on a large number of internal and external factors. Molnàr and Nilsson Molnàr[85] have made a summary of different entry modes, as seen in figure 2:5 below.

[83] Kotler, P, [1986]. Referred to in: Molnàr, J and Nilsson Molnàr, M, [1999]
[84] Czinkota, M.R and Ronkainen, I.A, [1998]
[85] Molnàr, J and Nilsson Molnàr, M, [1999]



N-Prod. TC = Non-producing trading companies
Prod. TC = Producing trading companies

Figure 2:5 Different entry modes.

Source: Molnár, J and Nilsson Molnár, M, [1999], p. 100

Concerning entry strategies for service firms, the company can also choose between a direct and an indirect entry mode.[86] Direct entry is when the service firm establishes a service-producing organization of its own on the foreign market, i.e. a sales office for manufactured goods. When it comes to a service firm the time available for learning becomes short because a local organization normally has to be able to produce and deliver the service from the beginning. One way to decrease potential problems with this strategy is to acquire a local service firm operating on the same market or to form a joint venture.

[86] Grönroos, C, [1999]

Keeping key people becomes a central issue. According to Carman and Langeard[87] service firms using direct entry immediately face quality expectations, distribution structures etc, on the foreign market. According to Grönroos[88] this is not the case for product firms if they choose indirect export channels in a minor scale. Therefore it is of importance that the service firm chooses the proper strategy and entry mode. If the service firm wants to avoid establishing locally, totally or partly by itself, an indirect entry can be used. For example a consulting firm can give a local firm exclusive rights to use the concept of the firm through a licensing agreement. Other examples of indirect entry are through franchising or management contracts. Indirect entry is one of the least risky strategies, but the firm's control will be more limited.[89]

Dahringer and Mulbacher[90] have made another classification and include whether the market entry options involve only marketing or both marketing and production. Each technique involves marketing or both marketing and production but also trade-offs between market control and degree of risk. See figure 2:6 below.

		Indirect	Direct
Marketing only		*Casual exporting *Export management companies *Export trading companies	*Import houses *Wholesale or retail purchasing group *Export departments *Foreign sales representative or branch offices
Marketing and production	**Limited capital**	*Licensing *Franchising *Production or management contracts	
	Extensive capital		*Joint ventures *Direct foreign investment

Figure 2:6 Market entry alternatives.

Source: Modified from Dahringer, L.D and Mühlbacher, H, [1991], p. 311

Indirect entry, marketing only

Indirect entry involving marketing functions only is the entry technique that offers the lowest level of risk and the least market control to an expanding firm. There are several variations on this approach. If a company responses to a request from a company in a foreign country it is called *casual exporting*.

Export management companies function like external export departments and are always situated in the same country as the producing firm. The export management company

[87] Carman, J.M and Langeard, E, [1980]. Referred to in: Grönroos, C, [1999].
[88] Grönroos, C, [1999]
[89] Ibid.
[90] Dahringer, L.D and Mühlbacher, H, [1991]

performs all the services necessary to sell the exporter's product in a foreign market and assumes most or all of the company's risk of market entry.

Export trading companies only buys products or acts as an export agent, but also imports, invests, manufactures and engages in counter trading. These companies can operate in several national markets and can also handle a variety of products.

Direct entry, marketing only

Direct entry involving only marketing occurs when the firm becomes directly involved in the marketing of its products in the host market. This approach gains additional control but also entails a greater risk for the firm, because it requires that more corporate resources be invested out side the home market.

The simplest form is by selling to an *import house* that is based in the host country and provides marketing services through which products are sold to consumers. The level of risk is lower but the home company loses the ability to determine how its products are marketed in the host country. The same function is provided by *wholesale* or *retail purchasing groups*.

A *sales representative* is a good way of improving the organizations ability to react to market trends while maintaining a relatively low level of risk. They are mostly independent sales agents working on commission basis and may act as a foreign sales department for the home company.

Branch offices are staffed by employees of the home company. One advantage is that in addition to performing the sales function, the staff may perform other marketing functions such as customer service.

Indirect entry, marketing and production

There are three indirect market entry techniques that involve production with limited capital involvement: *licensing*, *franchising*, and *production* or *management contracts*. For organizations that want to enter foreign markets quickly with limited capital risk, licensing and franchising are especially popular. The first mentioned can be used with all forms of industrial property and the latter is usually limited to trademarks. Industrial property rights, including rights to technology, patents, processes, and trademarks (registered brand names) can be licensed. Often it is combined with a joint venture. There is a need for the home company to retain some measure of control to ensure that quality standards are maintained and the corporate mage or brand image remains positive.

An advantage of franchising compared to licensing is that it strikes a balance between adapting the marketing mix to local conditions and maintaining high standards in international markets. The risk is reduced for the home organization because the franchisee invests some of its own capital. The franchising organization tends to be more directly involved in the execution of that strategy in the host market, which also result in less control for the home organization.

A production or management contract allows the firm to be involved either in the manufacture of a product or in the management of an enterprise in a foreign market. Turnkey operations often include a production or management contract that stipulates that

the home organization will continue to manage the operation for a specific period at a specified fee.

Direct entry, marketing and production

As capital involvement increases, the level of risk and the need for control by the home firm also increase. Yet many companies are still willing to share control in order to share or diversify risk. One frequently used market entry technique that shares both risk and control is the *joint venture*. Usually the result is the creation of a third company. A joint venture often combines the market knowledge and skills of the host-country firm with the production or technical skill of the home-country firm. The desirability of joint ventures is often tempered by factors in the external environment, especially the legal and political environment. The selection of an appropriate partner is critical to the success of a joint venture. If the partners do not understand each other well, the venture may be a disaster. Partners are usually chosen on a case-by-case, or market-by-market, basis. When a corporation pursues such alliances as part of its overall strategy, they are referred to as strategic partnerships.

For companies with sufficient capital that want to maintain high levels of control and believe certain markets will be large enough to justify the capital expenditure, *direct foreign investment* may be viable market entry strategy; the company may make a direct acquisition or merge in the host market, provide venture capital to a firm serving the market, or establish a subsidiary. Establishing a subsidiary usually means hiring host-country employees and that limited capital participation may be offered to host-country investors. Still, primarily the home company retains both risk and control.

Foreign companies engaging in direct foreign investment not only face higher capital risks, but they may also be subject to protectionist policies, and more backlash than either domestic companies or joint ventures.

2.2.5.2 What criteria influence the choice of market entry?[91]

Decisions related to market entry are closely tied to the firm's broader decisions – especially its positioning strategy. One approach to making these decisions is to begin with an assessment of corporate strategy and to evaluate alternative market entry techniques in terms of their potential contribution to that strategy. For example when a basic corporate strategy is to minimize financial risk, market entry techniques that entail minimal capital involvement would be preferable. The decisions are not independent they affect each other. A prerequisite for these decisions is positioning, or determining a specific market position for the company's product. The positioning decisions influences the market entry and marketing-mix decisions. Positioning decisions, which flow from other corporate decisions, help determine the best way for the firm to enter a market and what the marketing mix should be.

There are different opinions among authors whether the same factors influence the choice of entry mode by service firms and manufacturers of goods or not.[92] Erramilli[93] has made a division of services into hard and soft services. Examples of hard services are education,

[91] Dahringer, L.D and Mühlbacher, H, [1991] (if no other source is stated)
[92] Grönroos, C, [1999]
[93] Erramilli, M.K, [1990]. Referred to in: Grönroos, C, [1999].

life insurance and music and they require limited or no local presence by the exporter. Consumption may also, to a great extent, be separated from production. Examples of soft services are food service, health care and laundry. Conversely, production and consumption of soft services are most often a simultaneous process and a local presence by the service firm or a representative is almost always necessary. Ekeledo and Sivakumar[94] suggest that the foreign market entry mode does not differ significantly between hard services and manufactured goods, whereas it differs considerably between hard and soft services.

The different forms of market entry, i.e. direct and indirect, are related to risk and control for both the home and the host organizations. The ratio between them is the more control the company wants, the higher are the costs and the risks for the company. As the home organization becomes more involved in marketing and production in another country, it shifts risk and control away from the host to the home organization. This approach is uncomplicated and easy to carry out; however, it often produces less than optimal results. A second approach is to begin by evaluating all possible market entry techniques from the standpoint of all relevant decision criteria, selecting the one that is likely to be most effective. The final decision is not made until all available information has been considered. Although it requires more market information it usually results in a better decision. See figure 2:7 below.

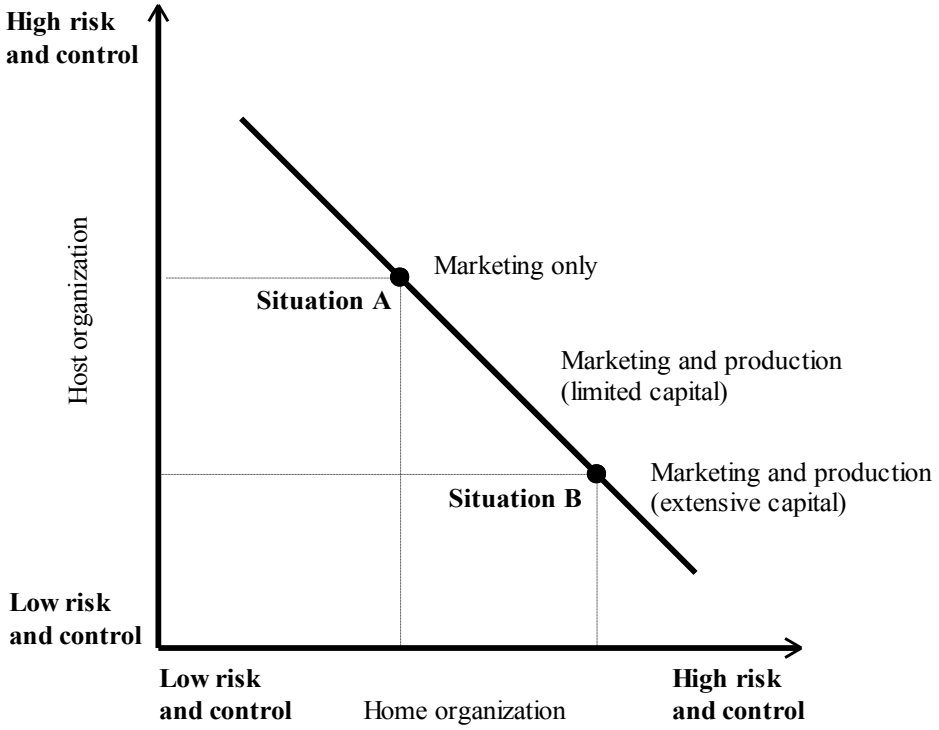


Figure 2:7 Alternative market entry techniques: involvement, risk and control.

Source: Modified from Dahringer, L.D and Mühlbacher, H, [1991], p. 310

The criteria, which a firm bases, its decisions about market entry technique may be classified into six categories: macro environments, industry conditions, market considerations, product considerations, financial considerations, and issues specific to the

[94] Ekeledo, I and Sivakumar, K, [1998]. Referred to in: Grönroos, C, [1999].

firm. As with the various market entry techniques, there are several subcategories within each one of these categories. The most effective decisions are based on careful review of all applicable criteria.

Macro environments

Macro environments affect the selection of a market entry technique by eliminating some options and making others more viable. *Economic considerations* such as limited buying power in the target market, may suggest entry techniques that minimize capital risk. Similarly *political conditions* influence both the choice and the success of a market entry technique. The existence of l*egal restrictions* effects the decision and can consist of requirements for local participation in joint ventures, government involvement, trade restrictions etc. The latter can, in an otherwise attractive market, make direct foreign investment the most appropriate entry technique. *Cultural environment* has to be considered. A society that is characterized by a high level of ethnocentrism is probably best entered through a management contract, licensing, or a joint venture.

Industry conditions

Industry conditions in different nations vary and an important factor is the *competition*, which influence the attractiveness of a market. One has to evaluate the market in terms of – size, intensity, relative market share, rate of growth, and technological sophistication. *Market volume* affects the choice of entry technique. In large markets, especially those with strong growth rates, direct foreign investment is more easily justified than in small markets with low or negative growth rates.

Market considerations

Market considerations have to be evaluated in several dimensions e.g. the nature of the market as well as the need and ability to influence it. If the company wishes to *influence* the market and is unable to do so from its home base, direct marketing and production entry techniques are called for. *Distance* is an important factor but the impact of it has been reduced due to the Internet and advances in telecommunications. The level of *technological development* in a market influences the entry. For example a company that manufactures a technological product may choose to enter a technological advanced market by licensing. If the market is underdeveloped technologically, direct production with capital involvement maybe necessary, to ensure appropriate use of the technology. *Resource supply and control* requirements is an important part. A company that wants to be vertically integrated from raw materials through distribution should probably use a direct production entry technique. *Infrastructure* in a nation can either act as resource or a constraint. A less developed infrastructure suggests capital involvement. A country with a highly developed infrastructure entails an indirect technique or a direct, marketing-only strategy. *Distribution* channels and objectives require local partnerships when the distribution system is complex and resistant to change. Also direct investment in distribution systems maybe necessary when marketing objectives cannot be met using existing distribution systems. Because of its close link to market influence and control, the availability of *information* is an important factor in market entry decisions. When in-depth market information is necessary but difficult to obtain, the best strategy is a direct, marketing-only entry technique or direct marketing and production with capital involvement. In both of the cases a local partner is needed, either because it possesses the

necessary information or because it is better able to gather the information than a foreign organization would be.

Product considerations

Numerous *product characteristics* influence both the rate and of diffusion in a market and the choice of a market entry technique. The greater the market's resistance to a product, the greater the need for a market entry technique that gives the organization direct control. The greater the level of *service* needed to support a product, both before and after the sale, the more the preferred market entry technique will be one that entails direct product involvement. Examples of services can include warehousing, repair or warranty programs, spare parts, promotional support, technical training, product-update programs, or superior customer services. *Product usage* affects the degree of control needed in particular markets. For industrial markets, entry techniques involving direct marketing or production (often with capital involvement) is required. Just as the marketing mix changes at each phase of the *product life cycle* market entry techniques also change. For products in the introductory phase of the life cycle, indirect market entry techniques may be appropriate. There is also the possibility that the market is very attractive and the product is new, it may be much easier to invest directly in the early stages, gain product and brand awareness and thereby gain market share quickly while raising barriers to entry by competitors. Companies with products in the mature phase often extend the direct approach followed during the growth phase, so that the product will maintain its market position and profit margin as long as possible. During the decline phase the firm may switch back to an indirect approach, decreasing the degree of risk as sales fall.

Financial considerations

Financial considerations as acceptable financial *risk* and *capital* requirements influence which form of market entry is best and is often central to the market entry decision. Acceptable levels of financial risk are determined largely by corporate strategy. For companies with low tolerance for financial risk and limited capital, indirect production entry is more attractive than direct production entry, and indirect, marketing-only entry may be preferred. Franchising is popular because they share financial risk with host-country firms. Also the higher the financial *costs* of market entry (for example, expensive marketing campaigns or high capital requirements for plant and equipment) the more likely the organization is to enter into a joint venture or strategic partnership rather than establish a wholly owned subsidiary. Small companies, for example, may find that the only way to enter a major market that requires extensive marketing support is to sell through an export trading company. The export trading company may be able to bundle together several products that may be profitable sold as a group. Or the home organization may wish to sell to an import house or a wholesale purchasing group in the host market, which performs similar services. *Currency risks* increase the degree of risk associated with direct marketing and production entry techniques.

Issues specific to the firm

Issues specific to the firm. Firms with varying goals, objectives, strategies, and international experience will choose different market entry techniques, even for similar products in the same national markets. *Corporate mission and goals* affect the market entry decision. A company whose goal is to be number one or two in every market should probably choose a direct market entry technique. Those firms who see the international

sales as “extra ” are more likely to select an indirect market entry technique. The firm’s *sales objectives* also influence its market entry strategy. High sales or market-share objectives demand a major presence in the market. In such situations the company is likely to establish a joint venture or a subsidiary. A firm that wants to test a market or start a long-term sales-growth trend can use an exporting approach or sales representatives. When the firm has become familiar with the market and wishes to increase its control, it can move toward higher-risk forms of market entry, like direct foreign investment. The firm’s *non-financial resources*, such as personnel, strong management, and planning or control systems, also affect its market entry decisions. Without properly trained and experienced personnel, for example, an organization is well advised to avoid high-risk, high-control entry strategies. A small company without extensive non-financial resources may still be successful in foreign markets. An indirect strategy, such as using an export management company or selling directly to an import house, allows the company to use external personnel with the necessary skills and experience. The firm’s *competitive strategy* may dictate certain entry techniques. Decentralization of responsibility for example, and autonomous subsidiaries will demand a direct market entry strategy. The firm’s *experience* is related to the degree of risk it is willing to accept. A firm that is entering its first foreign market is at the beginning of the marketing experience curve. A firm that has been involved in foreign markets for years is usually willing to accept higher levels of risk, because it has progressed along the experience curve and is better able to manage risk. Frequently a firm that is entering foreign markets for the first time uses a market that it perceives to be similar to its home market as a bridge, waiting until it has gained a comfortable level of international experience before entering a more dissimilar market. *Bridging* is similar to a market rollout campaign, in which the company uses its experience in a particular market segment to gain a competitive advantage in similar segments.

2.2.5.3 Advantages and disadvantages with different entry modes

Of course, different entry modes have different advantages and disadvantages. When it comes to some of the entry modes discussed above, Lindqvist[95] has made a summary of these pros and cons as shown in table 2:2 below.

[95] Lindqvist, M, [1991]

Table 2:2 Advantages and disadvantages with some entry modes.

Foreign entry form	Advantages	Disadvantages
Direct export	Low costs of market entry	Limited market knowledge
Local representatives	Low costs of market entry and operations Access to local market knowledge and contacts Almost immediate capability of stocking, promoting and selling Local selling support and services available Provide an opportunity to reach relevant markets	Control problems, resulting in agency costs Geographic distance, providing physical distribution strains Cultural differences, providing communication blocks Trade restrictions
Wholly-owned subsidiary	Avoids costly and time-consuming negotiation over inter-firm contracts Reduces control costs Increases economies of scale by combining different functions Keeps technological or administrative abilities and secrets inside the firm	High capital investment costs Limited access to local market channels High vulnerability and low flexibility to environmental changes
Joint ventures	Low costs of market entry Reduce risk Economies of scale by pooling skills and resources Overcome host government restrictions Immediate access to local market knowledge Strengthen the strategic position in the industry	Conflicting goals and policies Cultural differences
Licensing	Earning returns of R&D efforts before a technology becomes obsolete Overcomes local entry barriers Requires limited market knowledge and capital investment	Risk of technology imitation Administrative requirements
Export group	Share costs and risks of internationalisation Provide a complete product line of systems sales	Risks of unbalanced relationships
Export management corporations	Access to local market experience and contacts	Limited product experience Direction towards “wrong” geographical areas or industries Control problems

Source: Lindqvist, M, [1991], p.21

2.3 Synthesis

In the frame of reference above we have briefly discussed some differences between business and consumer services. We have notices that the foremost goal regarding business services is to develop systems that solve a problem, in cooperation with the customer. A long-term relationship evolves over time and networks with several companies often grow. Therefore it is important that the parties build mutual trust and knowledge through interaction with each other.

Furthermore we have discussed general expansion strategies and some differences between products and services internationalisation strategies. When it comes to product internationalisation theories, there are often step-by-step models for the international process. Regarding services, Roberts[96] claims that the business service firm also passes through a number of stages in the process of internationalisation, while Grönroos[97] makes a division into direct export, where no step-by-step learning can take place because the service has to be produced immediately, and systems export, where the company follows manufacturers they are supplying with services at their national market. Additionally Grönroos[98] discusses three different, but not mutually exclusive, strategies, i.e. client-following, market-seeking and electronic marketing mode.

Moreover we have briefly discussed different proactive and reactive motives for internationalising. We have also introduced two ways of choosing target markets, i.e. by an opportunistic or a systematic identification. In an opportunistic identification of a market, the company receive information about an opportunity whereas systematic identification occurs when the company systematically investigate a number of markets and finally choose the most interesting market. We have seen Gozzo et al[99] and their opportunistic model in addition to Molnàr and Nilsson Molnàr's[100] systematic four-step model.

Finally we have introduced different types of entry modes, some of their advantages and disadvantages, and which criteria that influences the choice of entry mode. We have also seen that Erramilli[101] has made a division of services into hard and soft services. Production and consumption of soft services are most often a simultaneous process and a local presence by the service firm or a representative is almost always necessary. Ekeledo and Sivakumar[102] suggest that the foreign market entry mode does not differ significantly between hard services and manufactured goods, whereas it differs considerably between hard and soft services.

With the above in mind, we think that a mobile service company must take several aspects into consideration when going international. First of all the management must have a motive to internationalise, just as our assigner Pilotfish already has. Secondly, there is a need to consider whether their target group are consumers (B2C) or businesses (B2B). In our case, Pilotfish has expressed a desire to make the B2B-market their centre of attention. Furthermore, we believe that there are differences whether the company

[96] Roberts, J, [1999]
[97] Grönroos, C, [1999]
[98] Ibid.
[99] Gozzo, M, Palm, G and Palmstierna, R, [1996]
[100] Molnàr, J and Nilsson Molnàr, M, [1999]
[101] Erramilli, M.K, [1990]. Referred to in: Grönroos, C, [1999].
[102] Ekeledo, I and Sivakumar, K, [1998]. Referred to in: Grönroos, C, [1999].

chooses to focus on the pre- or the post-market. For example, if Pilotfish is going to sell their mobile services and products, custom-made for monitoring and control, directly to different owners of earthmoving equipment, i.e. what we call post-market, or if they should focus on some major, multinational producer of such equipment, i.e. the pre-market.

There are also differences if the mobile service is attached to a product or not. A single mobile service "only" has to be transported through a bearer like GSM, whereas Pilotfish's mobile service solution is attached to a product and physically has to be transported and implemented with *another* product, in this case earthmoving equipment.

2.4 Research model and information needs

For simplicity, we have chosen to repeat our research problem discussed in section 1.4.

Main problem: *How should a mobile services company internationalise?*

Sub problems: *a. Make an analysis of foreign markets and select the most interesting market.*

b. Make an analysis of potential entry strategies and recommend an entry strategy in the selected market.

To be able to answer our first subproblem, we try to analyse the different countries chosen in section 1.5 and make a recommendation of the most interesting market. The second subproblem regards the mode of entry and we will make recommendations of which mode is most appropriate to choose. See figure 2:8 below for a summation.

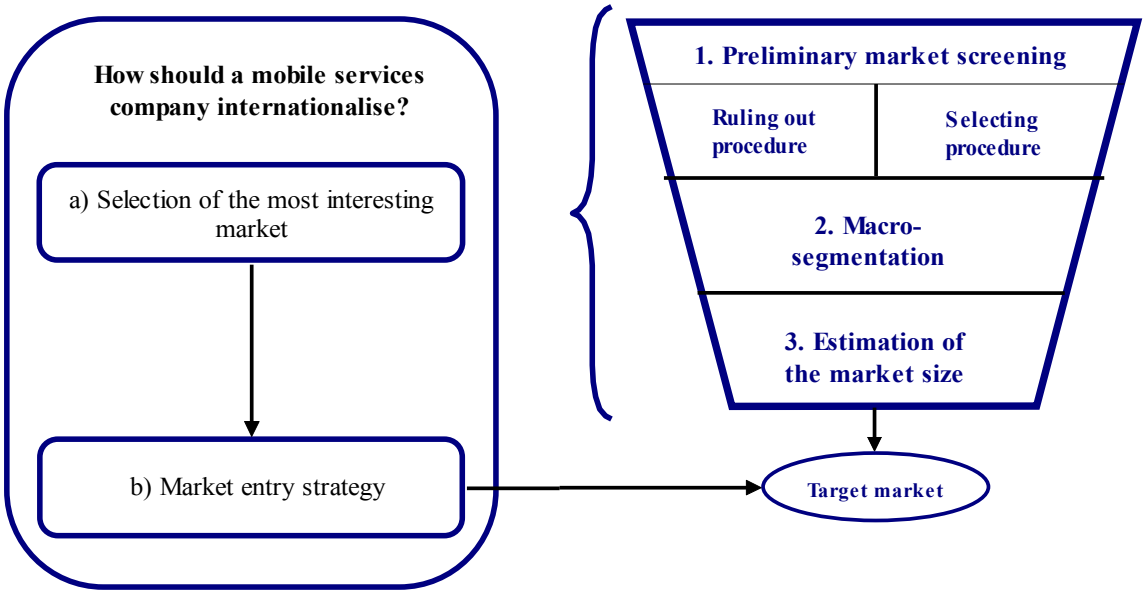


Figure 2:8 Research model.

It is important to notice that the research model is adjusted for mobile services like the ones Pilotfish are offering, i.e. more like hard services, as discussed earlier in the synthesis.

When it comes to information needs they are represented in table 2:3 below.

Table 2:3 Our information needs.

Subproblem	Information needs
a) Selection of the most interesting market	
Phase 1: Preliminary market screening	*Primary and secondary data* Ruling out criteria: GSM coverage, general technical level and economical level Selection procedure: Specific company/product relevant criteria and specific decisive factors for technical products
Phase 2: Macro segmentation	*Primary and secondary data* How do we best divide the market into segments to be able to estimate the market size?
Phase 3: Estimation of the market size	*Primary and secondary data* What is the market potential of the selected foreign markets? What are the sales potential for competing companies on the selected foreign markets? What are the company's sales possibilities in the selected markets?
b) Market entry strategy	*Primary and secondary data* Macro environments Industry conditions Market considerations Product considerations Financial considerations Issues specific to the firm

2.5 Delimitation

It is significant to observe that our research model is adjusted for mobile services like the ones Pilotfish are offering as discussed in the synthesis, i.e. more like hard services. Furthermore, our intension is only to investigate the countries/areas discussed in section 1.5.

Moreover we will not take step 4-5 discussed in the background into consideration, i.e. which part or parts of the marketing mix should be utilised and what kind of organisational adaptations are needed. Neither are we going to discuss Pilotfish's motives regarding their internationalisation.

3 METHODOLOGY

In this chapter we will explain how we intend to solve the main- and sub problems of the research, i.e. which methodology we will choose. This is important since the reader, after reading this chapter, has a possibility to understand how the research is implemented and what it is based upon. Thus, we will discuss our design of the research and present how we have collected the information. We will also evaluate the chosen methodology in terms of validity and reliability and discuss alternative ways of designing the research. Finally we present a disposition of our research process.

3.1 Research design

In order to fulfil the purpose and for the research result to be analysed correctly it is of importance to know which data collection methods and data types are used. Choosing the design of the thesis means that one decides how it should be designed technically. An investigation can be classified after the approach of its purpose and the kind of information needed. Different investigations can be divided based upon how much information or knowledge that exists within the specific problem area. The chosen research approach specifies which type of information that should be collected and which data sources that should be used at the data collection phase. Marketing research like this can either be exploratory, performance monitoring or conclusive. The latter two can either be cross-sectional or longitudinal in their research design.[103]

3.1.1 Exploratory research approach

If the knowledge within the area is limited, the research tends to be exploratory. The purpose of exploratory investigations is to identify, precise and structure problems. The intention is also to gather knowledge on the area in order to get an as all-round image as possible. The most common source of information is secondary data, observations and expert- or group interviews.[104]

3.1.2 Conclusive research approach

The intension with a conclusive research approach is to provide information for the evaluation and selection of a course of action in a marketing situation. There are two types of this approach, i.e. descriptive and casual research.[105]

3.1.2.1 Descriptive research

Descriptive research is suitable to use when portraying or making predictions regarding a marketing phenomenon or situation.[106] Such a research is often used when there already exists much research within the problem area. The purpose is to investigate different alternatives in order to find out which one is the most appropriate. These investigations can treat both past and present time.[107] Well-defined research problems and information

[103] Molnàr, J and Nilsson Molnàr, M, [1999]
[104] Lekvall, P and Wahlbin, C, [1993]
[105] Molnàr, J and Nilsson Molnàr, M, [1999]
[106] Ibid.
[107] Davidsson, B and Patel, R, [1991]

needs are necessary in order to be able to make a descriptive research. The foremost information sources are secondary data and interviews.

3.1.2.2 Casual research

In casual research, the studied reality is to be structured according to one's preferences so that the features of interest are well highlighted. An important trait of experiments is manipulation of special variables. Casual research is often implemented when the researcher wants to know if two or more variables are connected.[108]

3.1.3 Performance monitoring research

Performance monitoring research is intended to highlight signals concerning potential threats or opportunities. The research gives information about the marketing systems by controlling the marketing programs in accordance with the plan. The main source of data is interviewing respondents, secondary data and observations.[109]

3.1.4 Cross-sectional and longitudinal research design

In a cross-sectional approach, the research is done on breadth, and this design can be divided into surveys and experimental approaches. When implementing a survey, one observe and register reality "as it is" in a passive way, without trying to influence or change it. The aim of a survey is to tell something about an underlying population which the investigated objects represent. In a longitudinal research the interest lies in the development of time in one or more occurrences. Most often secondary data is used, i.e. data already collected for another purpose.[110]

3.1.5 Qualitative and quantitative approach

There are discussions concerning qualitative and quantitative design, which deal with the problem of how materials and information should be gathered and how it should be adapted and analysed.[111] A quantitative analysis is less abstract and use more "raw data" than qualitative analysis. The latter is primarily based on words, while the second is more based on math.[112] Patel and Davidsson[113] mean that the two methods can be described with the help of an axis, where the quantitative method is in the one end and the qualitative in the other. Thus, in reality the two methods are not incompatible and mostly all research can be found somewhere between the two ends.

A qualitative design is used when the collected and interpreted data cannot be quantified, i.e. expressed in figures. A quantitative investigation is often used when having a question starting with *what* or *how*. If the problem concerns for example the understanding of people's experiences a qualitative approach is preferable. The method is also less structured in advance than researches with quantitative designs, which are merely dependent on digits and admit interpretation by statistical methods. The quantitative

[108] Molnàr, J and Nilsson Molnàr, M, [1999]
[109] Ibid.
[110] Ibid.
[111] Davidsson, B and Patel, R, [1991]
[112] Svenning, C, [1997]
[113] Davidsson, B and Patel, R, [1991]

method is characterized by control from the researchers side, since a given method is used in advance in order to describe the surrounding world through measuring or testing.

One cannot say that a qualitative analysis is better than a quantitative. The difference between the two designs is smaller than one can believe. The analysis and interpretation is in both cases subjective by its character, and a quantitative design does not necessarily mean that a statistical inference to an underlying population can be admitted.

3.1.6 Our choice of research design

Our investigation is a combination of the exploratory research and the conclusive approach. Since our main problem implies identifying how to internationalise, i.e. select and enter a market, our research mainly has a descriptive approach. As in descriptive research approaches in general, we intend to describe *what* it is like without explaining *why*. In order to fulfil our first sub problem, i.e. to make an analysis of foreign markets and select the most interesting one, an exploratory approach may be useful. A similar approach will be used for the second sub problem, i.e. to make an analysis of potential entry strategies and recommend an entry strategy in the selected market.

The choice of approach and design is to some extent determined in advance when it comes to solving the practical assignment on Pilotfish's behalf, i.e. to analyse the foreign markets and make recommendations. This is because Pilotfish requested an investigation, where the selected countries were to be included and certain characteristics about the markets were to be considered. Hence, technical design other than a cross-sectional study would be difficult to defend if we are to meet the requirements and expectations from Pilotfish.

Regarding the choice between a quantitative or qualitative kind of investigation, the split between the main and sub problems implies both kinds. According to us, the main problem is of a qualitative nature, i.e. the data collected cannot always be meaningfully interpreted into figures. For solving the subproblems, we have used a mixture of quantitative variables and a qualitative approach.

3.2 Data collection

Large amounts of market information are used in the process of analysing and selecting foreign markets. This information can be collected from many different sources, which can be systematised in several ways, e.g. internal/external and formal/informal. Internal informal and formal sources are relevant to consider and when it comes to national sources there are many different types. When the national sources of information become insufficient, international formal and informal sources have to be employed. The rule of thumb when deciding to collect market information is to start with the internal sources, then continue with the national ones, and if necessary, also seek information from the international sources.[114] We intend to follow this approach as we collect information for our research.

[114] Molnár, J and Nilsson Molnár, M, [1999]

3.2.1 Primary and secondary data

The data that a researcher collects can be of two different kinds: existing data (secondary data) and data that has been collected by the researcher (primary data).[115] The first consists of, for instance, earlier made investigations and public statistics, while the later is data that has been collected especially for an investigation.[116] The information collected from formal sources is roughly equivalent to secondary data while the information collected from informal sources is roughly equivalent to primary data.[117] As most researchers, we will use both primary and secondary sources for all of our research problems.

Primary data is data that is collected specially for the investigation and this can be done either through communication or through observation of their behaviour. Collection of primary data is takes both time and costly and it can be hard to receive the desired information. An advantage of the method of observing is that there is no dependency of what a person knows, remembers or wants to answer. Disadvantages are that it is only possible to study the behaviour and not knowledge, opinions or attitudes. Also, only what is in progress can be studied, not the past or the thought of the future.[118]

Secondary data is, unlike primary data, collected not specially for the research in question. The data can be internal or external, where the internal data only exists within the company while the external data is collected from sources outside the organisation. Some of the used material are statistics, which can be characterised as either descriptive or hypothesis testing. The first kind gives a description of the data collected in figures. The second one has the purpose to test statistical hypothesises.[119] Since this material sometimes is not adapted to suite the kind of problem that is to be investigated, it can be difficult to evaluate the quality and usefulness of it. Secondary data usually does not give a complete image of the information needed and therefore it is often completed with primary data. One advantage with secondary data is the time- and cost savings that is made in comparison with the collection of primary data.[120]

3.2.2 Communication methods

Information from respondents can be collected through observation or communication.[121] We have chosen not to describe the observation technique, since we do not use it in this thesis. Communication based data collection refers to the questioning of respondents. There are several ways of asking questions – personal interviews, telephone interviews or by questionnaire.[122] Collecting information by personal interviews is a very flexible way of receiving information and is the method we plan to use for receiving useful information from experts.

There are several limiting factors for the methods efficiency, e.g. the respondent reluctant ness to leave information and different situational factors that affects the communications

[115] Wiedersheim, P and Eriksson, L-T, [1993]
[116] Kinnear, T.C and Taylor, J.R, [1996]
[117] Molnàr, J and Nilsson Molnàr, M, [1999]
[118] Lekvall, P and Wahlbin, C, [1993]
[119] Davidsson, B and Patel, R, [1991]
[120] Kinnear, T.C and Taylor, J.R, [1996]
[121] Ibid.
[122] Lekvall, P and Wahlbin, C, [1993]

procedure. In desire to please the interviewer the respondent causes a distortion of the information, so-called interviewing errors. The respondent can feel doubt for the questions if he/she is not familiar with the problem area. He/she can also feel pressured to correspond, despite that experience is entirely missing, and intentionally correspond wrong in order to satisfy the interviewer. The influence from these "error factors" can however be reduced through planning the instrument before for the information collection. The personal interview gives the interviewer the possibility to study the environment that the respondent is in, facial expression, body language plus other visual signals. Another advantage is that the interviewer has the possibility to ask the respondent to develop or explain something that feels unclear or interesting. The main advantage with the use of communication is the versatility, i.e. the possibility to obtain a widely spectrum of valuable information.

There are several different ways of interviewing people. The most common way to choose which kind of interview the researcher should use, is to decide the level of structure desired. An interview with a very solid structure is the one extreme while a totally unstructured interview that is more like a discussion is the other extreme. In a structured interview it is decided in advance which questions that will be asked and in what order they will be asked. A structured interview is useful when there are many respondents and when a quantification of the results is important.[123]

A partly structured interview is used when the researcher wants some information from all respondents, usually in qualitative investigations. These interviews are based upon some questions that should be answered. But neither the order of the questions nor the exact formulations of the questions are decided in advance. The purpose is to give the respondent a chance to give his point of view of things and the researcher can hence get new ideas. It is recommended that an unstructured interview be used if the aim of the questions partly or fully is for the researcher to learn from the interview. Perhaps the researcher does not know enough of the subject in order to being able to ask relevant questions. One of the goals with an unstructured interview is actually to learn enough about a subject or a situation so that one, in the future, will be able to formulate questions for coming interviews. Usually this kind of interview is used in the beginning of an investigation and the respondent can be an expert on the subject. It is rare that an investigation is solely based on unstructured interviews. It is common that a combination of all three types is used.[124]

3.2.3 Sampling

The target population can be defined as the number of all investigation units that it is interesting to be able to draw conclusions of in an investigation.[125] When the research is to be done it is possible to choose between doing a total investigation where all elements is included, or a sample investigation, where only some of the target population is selected.

There are two sampling methods – probability sampling and non-probability sampling. In probability sampling each separate elements have a known chance to become chosen and inference can be drawn from the sample and be valid for the entire population.

[123] Merriam, S.B, [1988]
[124] Ibid.
[125] Davidsson, B and Patel, R, [1991]

The other type of sampling method, non-probability sampling, is based partly on the researchers judgement and because of this no static inference can be drawn. The result is only valid for the investigated units. Qualitative investigation mainly uses this method, since generalising statistically is not a goal. The most common form of non-probability is a method called aim-oriented sampling, which often is used with limited population e.g. the actors in a certain line of trade or within an expert field.

3.2.4 Our choice of data collection

During the problem analysis we mainly use secondary data. The small amount of primary data that has been collected consists of interviews with management at Pilotfish. The majority of the secondary data used in the thesis is external and consists mostly of books, articles, reports and databases collected from libraries and the Internet.

The first subproblem, i.e. to make an analysis of foreign markets and select the most interesting market, we use secondary data such as statistics about technological level and economical situation in the countries when completing the first step, the preliminary market screening. We also use primary data gathered from Pilotfish regarding internal factors in this screening. Furthermore in the second step, the macro segmentation, we use primary data to find out how the market of earthmoving equipment usually is divided. But we also look at statistical data, i.e. secondary data, to make it easier to adjust the segmentation according to the data that exists. Finally in the third step, estimation of the market size, we mainly use statistics and expert interviews for estimating the market potential and demand. See table 3:1 below for persons interviewed. The reason for choosing these people to interview is mainly because many of them are believed to have great knowledge about the area of earthmoving equipment. We also want to have representatives from both the owner of the machines, i.e. Maskinentreprenörerna, and the producers of the machines, i.e. Maskinleverantörerna. Furthermore we want to have representatives from the insurance market, i.e. Larmtjänst, which is owned by most of the insurance companies in Sweden.

As stated earlier, it will not be easy to obtain internal data from Pilotfish regarding earthmoving equipment, since the company is not present in this particular market in Sweden or anywhere else. It should be noticed that for some European countries it is probably difficult to find accurate statistics simply because it sometimes barely exists. For estimating the company demand we primarily make interviews with management at Pilotfish but we also use internal company material.

Finally in the second subproblem, i.e. to make an analysis of potential entry strategies and recommend an entry strategy in the selected market, we collect mainly primary data from management at Pilotfish, but also secondary data such as statistics about different conditions in the country chosen.

The personal interviews made in the research are mainly structured, but spontaneous questions have also been made.

We have chosen to summarize the persons we will interview in table 3:1 below.

Table 3:1 Persons interviewed.

Name	Company	Position within company	Type of interview	Date/time of interview	App-endix
Runeberg, Karl	Pilotfish Networks AB	Founder of the company	Personal	15/05/2001, 13.00-15.00	1
Rouzbeh, Pasha	Pilotfish Networks AB	Founder of the company	Personal	15/05/2001, 13.00-15.00	1
Hallström, Bengt	Dieselcleaning AB	Chief Executive Officer	Personal	15/05/2001, 17.00-18.00	2
Haabma, Leena	Byggmaskinföreningen (The Swedish Rental Association)	Managing Director, BMU Service AB	Personal	17/05/2001, 09.30-10.30	2
Svedberg, Marcus	Exportrådet (The Swedish Trade Council)	IT & Telecom	Personal	17/05/2001, 11.30-12.45	3
Rönström, Lars	Maskinentreprenörerna (Organisation representing the machine owners)	Representative of the business	Personal	17/05/2001, 13.30-16.30	2
Carlsson, Mats	Larmtjänst AB (Owned by several insurance companies)	Special agent/The operative group	Personal	18/05/2001, 09.00-10.00	4
Kellner, Göran	Larmtjänst AB (Owned by several insurance companies)	Special agent/The operative group	Personal	18/05/2001, 09.00-10.00	4
Bäckström, Björn	Maskinleverantörerna (The Swedish Trade Association For Suppliers of Mobile Machines)	Chief Executive Officer	Personal	18/05/2001, 11.30-14.00	2
Nilsson, Gunnar	Maskinleverantörerna (The Swedish Trade Association For Suppliers of Mobile Machines)	Former manager	Personal	18/05/2001, 11.30-14.00	2

3.3 Evaluation

The risk of errors occurs through out the whole research process.[126] Since different sources of error can lead to the wrong conclusions, it is important to try to eliminate them. It is therefore necessary to be aware of the different sources of errors that can affect the thesis' quality and alignment. Possible sources of errors are reduction of the target population, wrong alignment and content, work and adaptation errors, interview errors and measurement errors.

3.3.1 Validity

To be acceptable, a method should prove high validity, i.e. it should be valid which it will be if the information collected makes it possible to answer the purpose of the research. Validity means that one measure what is intended to be measured.[127] It is actually impossible to decide whether a method is valid or not, since the judgment often becomes more or less subjective. However, there are some methods that usually are used in order to decide the validity of a method. One of them is immediately experience validity, which is the method we have chosen to be sure that our method should be valid. Immediately experience validity means that a method is likely to be valid if some experts on the field consider it to be valid.

3.3.2 Reliability

The reliability of the research has to do with the capacity of the method to resist random influence. If the same measurement is done many times and every time the result is more or less the same, the method has a high reliability.[128] A high reliability therefore means that the actual measurement does not influence of whom it is that performs the research or the circumstances that it takes place under.[129] Insufficient reliability means that the respondents answer varies more than what is acceptably, which can depend on different measurement errors e.g. instrument errors, interview errors or respondent errors.

At unstructured interviews is it easy that the so-called interviewer effect occurs, which affects the result. In order to increase the reliability, two or more interviewers can be used in order to check each other. Another advantage with two or several interviewers is that after an interview they can compare their opinions and registrations of answers and observations.

When it comes to qualitative investigations the term reliability in a traditional meaning cannot be used. Instead, one should consider variables such as "level of dependency" and "connection". This implies that instead of demanding that other researchers should receive the same results as we did if they would have done the research in a similar way, we should strive to receive results that are meaningful, consistent and dependent.[130]

[126] Lekvall, P and Wahlbin, C, [1993]
[127] Svenning, C, [1997]
[128] Lekvall, P and Wahlbin, C, [1993]
[129] Kinnear, T.C and Taylor, J.R, [1996]
[130] Merriam, S.B, [1988]

3.3.3 Our evaluation

When it comes to the validity of our research we believe that it is relatively high since we have thoroughly chosen relevant theories for the topic and we also have a thorough understanding of the theories. Furthermore, we have discussed the method with doctoral candidates at the Viktoria Institute and with our tutor Joseph Molnár, and they agree that this method is suitable. It would also have been useful to interview experts in the European countries, but mainly because of economical reasons and high expectations on the interviewees, we have not done this. This might affect both the validity and reliability negatively.

Furthermore we believe that the overall reliability of the research is high. The persons we have interviewed have been experts on the field and have been very interested in our research and keen to help us. Unfortunately the question about market potential in the European countries (e.g. question 3.2 in appendix 3) has been difficult for the interviewees to answer in specific numbers. This might deteriorate the reliability. When it comes to the reliability of the secondary sources it is of course difficult for us to know their reliance. It is possible that the information can be angled. It is therefore important to be critical to the sources and preferably compare the information from different sources. By using us of personal interviews we increase the possibility that our questions are answered and also in a way decreases the risk for internal reduction. Analysis errors can always occur since there is a risk for rendering errors. When it comes to processing errors, they are non-existent in principal, since we will use a tape recorder during the interviews.

3.4 Analysis of data

In this section we have chosen only to present in what way we have analysed the data collected throughout the research. When analysing the information collected through personal interviews, we have listened to the recordings of the meetings and written down the conservations on the computer. We have also grouped the answers from the different interviews and the different questions. Because of this we will be able to more easily make the analysis, draw conclusions and give recommendations.

3.5 *Research process*

In order to give the reader an understanding of how we have implemented this study we will describe the research process of the thesis illustrated in figure 3:1 below.

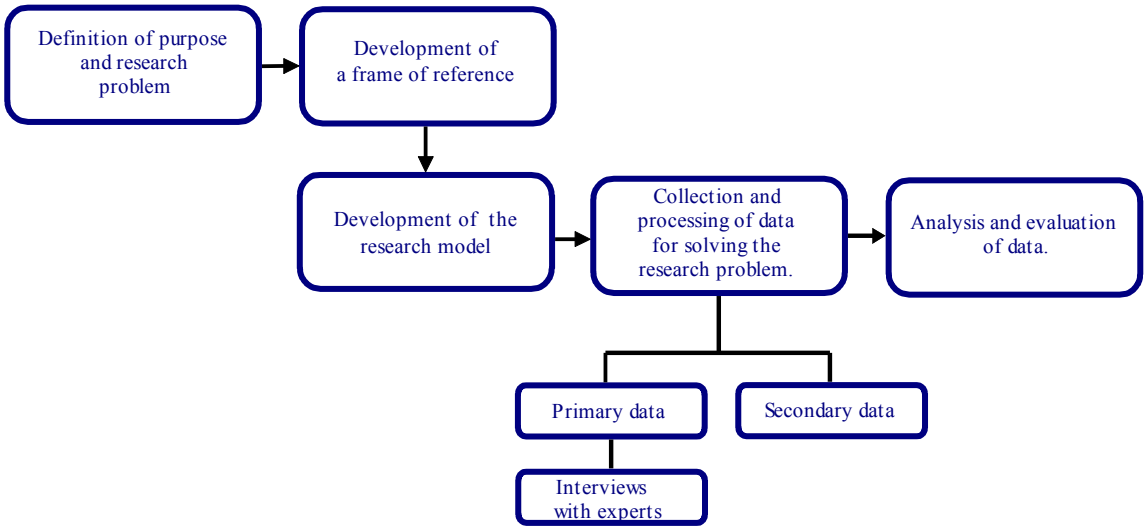


Figure 3:1 Research process.

As shown in figure 3:1 above, the step "development of frame of reference" is done to be able to create a research model. The collection and processing of data involve, as discussed earlier, both primary and secondary data. The primary data will be collected from different people, mostly experts. See also section 3.2.4 *Our choice of data collection*. Finally we will end up with an analysis and evaluation of that data for us to be able to come to any conclusions and recommendations.

4 SELECTION OF THE MOST INTERESTING MARKET

In this chapter we will make a preliminary market screening of the 11 countries, in terms of a ruling out and a selection procedure. After that, we will choose 2-4 interesting countries to analyse further and make macro segmentation. The analysis of the 2-4 countries will regard estimation of market size in the chosen segments. Finally we will select and recommend the country that we believe is the most interesting to enter when it comes to the area of earthmoving equipment.

4.1 Preliminary market screening

4.1.1 Ruling out procedure

There are a number of variables that we think are of importance when it comes to Telematics products and services in all the countries. First of all, Pilotfish's generic Telematics platform requires GSM - Global System for Mobile communication. Therefore it is of vital importance that the country/area where Pilotfish will implement its platform and mobile services has a GSM coverage that is the best possible. Secondly, we believe it is useful to study the more general technical situation in each country. It will give us an indication of how far the technical development has reached and the general willingness to accept and adapt new techniques/technologies. Thirdly, it is relevant to analyse the general economical situation in the countries. We have chosen to look at the Gross National Product (GNP) per capita and the rate of inflation. The level of GNP shows the general growth in the country and the inflation shows us the price level, which may affect the margins. Finally we will study the common willingness to invest in these areas, which shows where the investors choose to invest their money and which markets they focus on, and thus believe in. See figure 4.1 below for a summation.

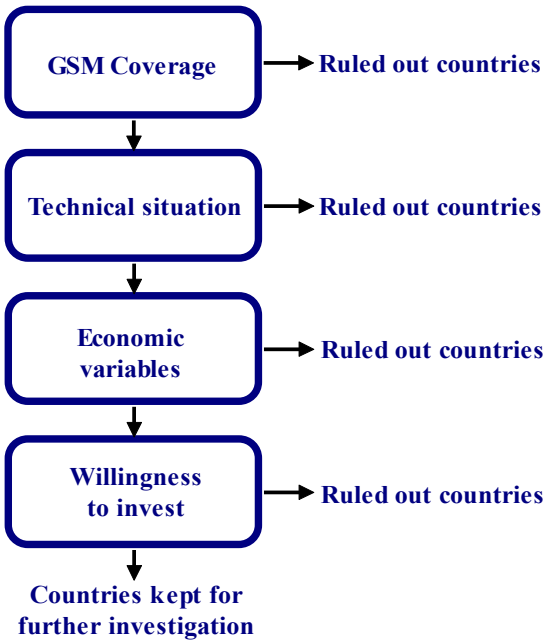


Figure 4:1 Ruling out procedure.

To be able to determine the GSM coverage, we have looked at the leading operators' GSM coverage in the different countries.[131] The coverage is fairly acceptable in most countries, but due to non-sufficient GSM coverage, compared to the other countries, we have chosen to rule out Austria and Switzerland.

When it comes to the technical situation, the American magazine Forbes has, in the beginning of the summer of 1999, made a ranking of the Western European countries. See table 4:1 below. It has been made out of the per capita share of computers, telephones, Internet subscriptions and the average access to computer power.[132]

Table 4:1 Forbes ranking of the Western European IT-countries

Country	Points
USA	100
Sweden	95
Norway	91
Denmark	90
Finland	87
Switzerland	85
The Netherlands	78
The Great Britain	76
Germany	68
France	66
Austria	65
Belgium	64
Ireland	60
Italy	53
Greece	42
Spain	42
Portugal	39

Source: Teldokrapport 130, [1999], Teldoks årsbok 2000, p 83

Norway, Denmark and Finland are the top countries in The Western Europe, except for Sweden who is the number one. Of our 9 countries left, Belgium and Ireland are the ones at the bottom of the list. This factor is especially important when it comes to B2C, but also when analysing a B2B-market. Forbes ranking is based on the people, i.e. the consumers, living in the countries. One can assume that this measurement is also representative for the companies, since the technological level among consumers is probably applicable for the whole country. Due to the above we have chosen to rule out Belgium and Ireland.

Regarding the percentage growth of GNP in 1999 it varies between 0,8 and 3,6 %. Note that the average in EU was 2,3 %. The trend is upward in for example Finland and Germany and the highest growth of GNP 1999 was also in Finland and the Netherlands came second. The countries that are below 2 % are Norway (0,8 %), Denmark (1,2 %) and Germany. As of March 2000, the highest annual inflation rate was in Finland (3,2 %)

[131] GSM World website, [2001-04-25]
[132] Teldokrapport 130, [1999], p 83

and Denmark (3,0 %). The lowest rates were in the Great Britain (0,7 %), the Netherlands (1,6 %) and France (1,7 %).[133] Due to this we have chosen to rule out Denmark.

The Swedish direct net investments in foreign countries, between 1998-2000, have mainly been done in adjacent countries, such as Finland, Norway and Germany. Other interesting areas have been the Great Britain and the Benelux-countries.[134] The least investments have been made Austria. Instead, if we have a look at the total (not only the Swedish) gross investments, we can see that they, expressed as a percentage the last years, have increased mostly in Finland and France. In the year 2001 they are calculated to increase with 6,5 % and 5,0 % in these two countries. The trend is ascending in for example Germany while it has been negative in Norway.[135] Another interesting aspect is that about 28 %[136] of the total Foreign Direct Investments (FDI) flows in EU member states in 1998 went to Great Britain (48,9 million ECU). The Netherlands (29,1 million ECU) and France (24,6 million ECU) were the second and third largest FDI-markets in 1998.[137] Due to this we have chosen to rule out Norway.

With the above mentioned in mind we have chosen to keep the following countries for comparison in the selecting procedure: Finland, The Netherlands, Great Britain, Germany and France.

[133] Eurostat News Release, [2000]
[134] Konjunkturinstitutet website, [2000-07-06]
[135] Ibid.
[136] Avg. 19 % between 1992-98, but although the highest shared with France, who also had an avg. of 19 %
[137] Passerini, Paolo, [2000]

4.1.2 Selecting procedure

In the selecting procedure we have chosen to rank the countries out of several important selection criteria in table 4:2 below. We would like to emphasize that the rankings of each country is made in relative position to the other countries we are investigating. Explanations will be given below the table.

Table 4:2 Ranking of countries.

Rating
1 = Below average
2 = Average
3 = Good
? = Unknown

Selection Criteria / Country	Austria	Belgium	Denmark	Finland	France	Germany	Ireland	Norway	Switzer-land	Nether-lands	Great Britain
EXTERNAL FACTORS											
Barriers to internationalisation											
- Tariff barriers	3	3	3	3	3	3	3	2	2	3	3
- Non-tariff barriers	3	3	3	3	3	3	3	2	3	3	3
- Physical distance	2	2	3	3	2	3	2	3	2	2	3
- Psychological distance	2	2	3	3	2	3	2	3	2	2	3
Macro and micro environment											
- Political stability	2	3	3	3	3	3	1	3	3	3	3
- Economical stability	3	3	2	3	2	2	3	3	3	3	2
- Market potential	1	2	1	1	3	3	1	1	1	2	3
- Competition	3	1	2	3	1	1	3	3	3	2	1
INTERNAL FACTORS[138]											
- Language knowledge	2	1	2	1	1	3	3	3	2	2	3
- Experience of country	1	1	1	1	2	2	1	1	1	1	3
- Business contacts	1	1	1	1	2	2	1	2	1	1	3
- Financial resources	1	1	1	1	3	3	1	1	1	2	3
TOTAL:	**24**	**23**	**25**	**26**	**27**	**31**	**24**	**27**	**24**	**26**	**33**

4.1.2.1 Explanations concerning the external and the internal factors

Tariff barriers[139]

Within the European Union (EU) there are no custom tariffs. Therefore we have chosen to rank all the EU-countries 3, while Switzerland and Norway have been graded 2.

[138] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]
[139] Exporthandboken, [1998]

Norway is a part of the EES-agreement, which has been valid since January 1, 1994, and the EES-agreement includes EU-countries and EFTA-countries, excluding Switzerland.

Non-tariff barriers

The factors taken into consideration are mainly specific rules for how technical products should be marked and tested. The most important factor is a directive from EU called Electric Mobility Compatibility (EMC) that includes Norway but not Switzerland. EMC states that the machines and equipment must be inspected and approved by an independent third party[140]. Furthermore, if the product is marked with the European norm CE, it will guarantee that the product/solution fulfils the requirements of safety, construction, design and use.

Physical distance

Regarding physical distance the countries most far away from Sweden have got the lowest grade, i.e. 2. The reason why we have chosen not to rank any of the countries with the grade 1 is because every country is part of one continent - Europe. It is important to note that this criterion should be used with caution since the actual physical distance measured in time units is rather small. For about 100 years ago it would take several months to get to Australia, today it takes approximately 24-36 hours. But of course the cost increases with the transport distance, and thus, this will be reflected in the total cost of the product/service solution.

Psychological distance

The psychological distance is probably greater to countries such as France, the Netherlands, Belgium, Ireland, Switzerland and also Austria. The reason is mainly because of differences in culture etc. When it comes to the other countries, we believe the distance is experienced as smaller.

Political stability

All the countries in the European Union (EU) are believed to have political stability and therefore we mostly give high grades. Due to certain political disturbances lately, we give Austria the grade 2 and Ireland 1. Note that by political stability we mean that the risk of e.g. war and terrorism is low.

Economical stability

The term economical stability may be interpreted in different ways. It can be the general stability of the economical *system*, often related to the political stability, or it can be the general economical stability in terms of GNP, inflation etc. We have chosen the last point of view and we have used the same statistics and reasoning as in the ruling out procedure, see section 4.1.1.

Market potential

It is very important that the market potential is large to be able to succeed. The size of the country is relevant as is the number of people in the countries. Therefore the smaller

[140] Interview with Björn Bäckström and Gunnar Nilsson at Maskinleverantörerna, [2001-05-18]

countries are of less interest although the competition might be lower.[141] Germany, France and Great Britain probably have the largest potential and are given the grade 3.[142] The Netherlands and Belgium are smaller and are given the grade 2. The other countries are believed to have a very small potential and are ranked with 1.

Competition

Since the business within the area of earthmoving equipment is rather global, the competition seems to be low and steady throughout the whole world.[143] There are 4-5 large global and dominant producers, e.g. Caterpillar, Komatzu, New Holland and Volvo. The level of quality is roughly the same. In Norway (Bröyt International), Finland (Lennen) and Denmark (Hydrema) there are only a few relatively small producers of earthmoving equipment. Austria, Switzerland, Belgium and the Netherlands barely have any.[144]

When it comes to mobile services for earthmoving equipment it is very difficult to estimate the size of the competition since the statistics available makes a summation of *all types* of mobile services. Therefore we have chosen to look at the number of the most representative companies within the telecommunications area.[145] See also appendix 5. These numbers are not representative for the area where Pilotfish is active, but it gives a hint of the differences between the countries in terms of firms within the area of mobile services. The grade has been set to 1 if the competition is high and 3 if it is low. Thus the competition is relatively high in e.g. Germany and Great Britain and lower in e.g. Austria and Ireland.

Pilotfish's main competitors will probably be the producers of earthmoving equipment. There is also a company called JLT[146], specializing in almost the same area as Pilotfish. There are only a few mobile services companies today that offer mobile surveillance services, e.g. Satsafe, Guardsystems and Followit, but none of them offer diagnostics and monitoring services.[147] Other potential competitors for Pilotfish are Maingate and Unwire/Cellpoint.

Language knowledge

The people involved in Pilotfish speak English fluently since it is the company's official language and there are also people speaking German. Therefore we have chosen to give high grades to Great Britain, Ireland and Germany. Since Swedish is very similar to Norwegian, we have also given Norway the grade 3. Switzerland and Austria has been graded 2 since French is very common there apart from German. Belgium and France have got a low grade since the knowledge of the French language within the company is low.

[141] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[142] Interview with Marcus Svedberg at the Swedish Trade Council, [2001-05-17]
[143] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[144] Interview with Björn Bäckström and Gunnar Nilsson at Maskinleverantörerna, [2001-05-18]
[145] Europages website, [2001-05-10]. Europages contains the contact details of a selection of the most representative companies of 30 European countries. 80 % are small and medium-sized companies belonging to industrial sectors with high import/export capacities.
[146] See JLT website, <www.jl-teknik.se>
[147] Interview with Mats Carlsson and Göran Kellner at Larmtjänst, [2001-05-18]

Experience of country

The international experience within Pilotfish is relatively low. The most experience has been in Great Britain where they have their own sales representative. They also have some customer experience from France and Germany. The other countries have been graded low.

Business contacts

When it comes to business contacts the grading is exactly the same as the previous criteria – experience of country – apart from Norway, where Pilotfish has some contacts since before.

Financial resources

Regarding financial resources Pilotfish is willing to invest money in large potential and interesting markets. Therefore Germany, France and Great Britain has got the highest grades.

4.1.2.2 Result from the selection procedure

In table 4:2, i.e. in the selection procedure, the total ranking score of the different countries shows that Germany and Great Britain has the highest score. Furthermore the Netherlands, Norway, Finland and France have the second highest grades.

We have chosen to keep the countries Germany, Great Britain and France for further comparison with the result from the ruling out. The reason to ignore Norway, Finland and the Netherlands is simply because it is very important that the market potential is large, as stated before. The potential is rather small in these three countries.

It is important to remember that the grades regarding several of the internal factors is relatively easy for the company to influence and should not be a major problem if a market is very attractive.

4.1.3 The ruling out compared to the selection procedure

As stated earlier Finland, The Netherlands, Great Britain, Germany and France was kept from the ruling out procedure. Furthermore Germany, France and Great Britain were kept from the selection procedure. After comparing these two groups we have chosen to investigate the following three countries further:

- Germany.
- Great Britain.
- France.

4.2 Macro segmentation

The macro segmentation is, as stated in the frame of reference, a very important step in the market selection process. The area of earthmoving equipment is a rather complex area and there are literally thousands of different machine types and usage areas. Since approximately 1994 there has been a classification of different machines into 9 divisions. Within these divisions there are several subdivisions.[148] This classification is common within the industry. The area of earthmoving equipment that we primarily are interested in, are parts of division 1, Transporting machines, i.e. dumpers and trucks and the whole part of division 2, Excavators, loading machines and bulldozers. The reason is mainly because the statistics and estimations collected through our research represents this group of machines. Thus, the research is focused on the machines in the circle in figure 4:2 below.

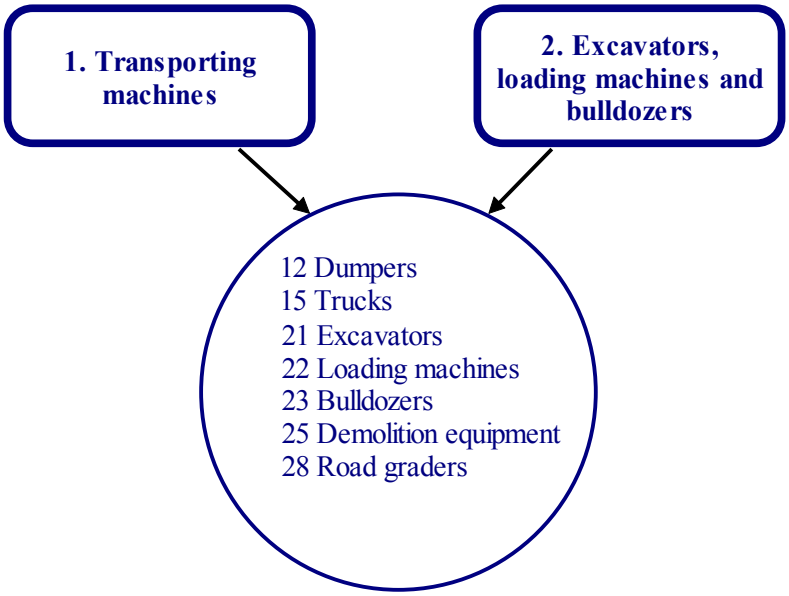


Figure 4:2 Macro segmentation.

4.3 Estimation of market size

In our estimation of the market size we have taken both the country related and demand related factors into consideration. When it comes to the country related factors, there are no differences between the three countries concerning trade barriers since all of them are part of EU. All countries also have the same requirements regarding labelling and the Electric Mobility Compatibility directive (EMC). As regards the competition, there are some differences between the countries as discussed in the selection procedure. Furthermore, when it comes to the demand related factors, we have chosen to define the countries as markets, i.e. not regions within the countries since it is very difficult to find the appropriate information and statistics. We have also chosen to use a physical measure, i.e. number of machines (market potential) and number of mobile service solutions (market demand and company demand), i.e. units. The reason for our choice is mainly because of simplicity and to avoid difficulties regarding exchange rates and level of measurement.

[148] Interview with Leena Haabma at Sveriges Byggindustrier, [2001-05-17]

We would also like to emphasize that we have included Sweden in tables etc below, for comparison purposes.

4.3.1 Market potential

The market potential is the total market including both existing and future possible customers for the product/service. In this case the market potential is the number of active machines within the area of earthmoving equipment in the three countries, i.e. every machine could be equipped with Pilotfish's mobile service solution.

In general, Great Britain has a more mature market with a more developed machine owner industry. There are so called "free machine owner companies". Germany has a very old-fashioned hierarchical structure of the companies but the potential is very large. In France the companies are willing to adapt IT and new technology. But there are several control functions when it comes to the building sector, i.e. the threshold is high, but if you manage to enter the market successfully, the potential is large.[149] In Germany, the companies that own earthmoving equipment are larger and the management buys a large number of machines when making a purchase. The period from buying decision to the actual buying is shorter than in other European countries. In Great Britain the machines in average are older than in other countries in the Western Europe. It is also common to rent the machines for a shorter or longer period of time, i.e. the workers/drivers do not own the machines. Furthermore, it is usual for the contractor firm to rent a machine and let one of the workers within the company drive it.[150] Great Britain is also the country where the most thefts of earthmoving equipment take place[151], but this is a worldwide problem.

According to Lars Rönström[152], the service of the machines is expensive and often complicated. The engines are technically complicated and the driver often has to explain symptoms thoroughly to the service man by phone if the machine is far from the service man. It is possible that they misunderstand each other, because the driver has difficulties explaining the symptoms. It is also very important to minimize the standstill time, since it is very expensive. A standstill of more than one day is often not accepted and it is common that other machines are affected if they cannot do their work until the broken machine has done its work. Furthermore it is very important that the market potential is large to be able to succeed. Therefore the smaller countries are of less interest although the competition within the producers might be lower.

There are approximately 17-18 000 active machines in Sweden in the area of earthmoving equipment. About 11 000 of these machines are owned by members of Maskinentreprenörerna and they are mostly used in the construction and building industry. There are also about 5 000 machines on top of those 17-18 000 which are owned by the military or are not in use.[153]

The number of machines in the other countries within the area of earthmoving equipment is possible to roughly estimate with the help of the population, since they are closely correlated.[154] Therefore we have chosen to use statistics from Sweden and, with the help

[149] Ibid.
[150] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[151] Interview with Björn Bäckström and Gunnar Nilsson at Maskinleverantörerna, [2001-05-18]
[152] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[153] Ibid.
[154] Ibid.

of the population in the other countries, converted the numbers into predictions about the three countries. It is very important to note that this is an estimate out of the population of the country and is not exact numbers. We have tried to find appropriate statistics, but we have only found the output expressed in the local currency for the total group and imports/exports expressed in tonnes.[155] Since the weights of the machines are very varying it is almost impossible to estimate the number of machines produced left in respective country. Furthermore, it is difficult to estimate the total number of active machines (i.e. not only the ones produced) since there is no obligation to register earthmoving equipment unless they can move faster than 50 km/h[156]. (This is not true for some wheel loaders, cranes and dumpers.) Approximately more than 95 % of earthmoving equipment in Sweden is not registered.[157] This may also affect the retrieval rate regarding stolen machines.

Table 4:3 Estimation of number of active machines within the countries.

Country	Population (approx.)[158]	Number of active machines within the area of earthmoving equipment
Sweden	8 900 000	17 000[1]
Germany	82 000 000	156 000[2]
France	59 000 000	112 000[2]
Great Britain	60 000 000	114 000[2]

[1] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[2] Formula: (No. of machines in Sweden / Population in Sweden) * Population in respective country

In table 4:3 above we can see that Germany has the largest potential while France and Great Britain are almost equal.

When it comes to the future market potential, it is important to note that the number of machines within the area of earthmoving equipment is declining in Sweden, although not very much, and in the other three countries as well.[159] By how many percent it will decline is not possible to say at this moment.

4.3.2 Market demand

Today, the producers have diagnostic services for their machines, but not *mobile* services other than at an experimental stage.[160] Thus, not many machines within the area of earthmoving equipment have mobile surveillance, diagnostic and monitoring services today, but it is not unusual that there are displays inside some of the machines for the drivers to monitor several values, e.g. oil compression.[161] It is only a few machines that

[155] We have searched the OECD database, SITC Rev. 3 ITS, and UN statistics
[156] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[157] Interview with Mats Carlsson and Göran Kellner at Larmtjänst, [2001-05-18]
[158] SCB website, [2001-05-20]
[159] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[160] Interview with Björn Bäckström and Gunnar Nilsson at Maskinleverantörerna, [2001-05-18]
[161] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]

have a surveillance system like GPS implemented.[162] Bengt Hallström[163] at Diesel Cleaning AB also supports this. Atlas Copco has developed a chip in the machines and uses it for diagnosing, but it is not widely spread.[164] Several larger producers of earthmoving equipment, like Caterpillar, Daewoo and Fiat-Hitachi, have started to develop and some of them have also tested similar types of services. The technique in itself is not new, since it has been used for a long time within the area of fleet management (lorries), but for earthmoving equipment it is a whole new concept.[165] Thus, these producers are possible competitors to Pilotfish in the future.

The marked demand today is estimated to be less than 10 % of the market potential, and is roughly the same within all the countries. In the future it will most certainly increase.[166] It is important to notice that this estimation regards machines that either have surveillance, diagnostic *or* monitoring services.

4.3.3 Company demand

The demand for Pilotfish's solution is none at this moment, when it comes to the area of earthmoving equipment, since they are not present at this market yet. It is also difficult to draw conclusions from the SeaKey market mainly because it is directed towards consumers (B2C) and not businesses.

In Pilotfish's case, the mobile surveillance service, i.e. when a machine is stolen, should be seen as a compliment to the diagnostic and monitoring services. As stated earlier, not many companies offer mobile diagnostic services today and the possibility to more easily avoid machinery breakdown is probably very valuable since it can cost a lot of money, up to millions of SEK. By this approach the company demand could increase. But although the diagnostic and monitoring services are important the mobile surveillance services should be offered as a compliment. It is usual that accessories (values up to several hundred thousand SEK) get stolen, e.g. tanks of petrol, cranes and hydraulic hammers. The phenomenon is heavily related to the general state of the market in the country. Therefore, the insurance companies would be interested in a solution like Pilotfish's, but it preferably should be applicable to both the machine and the accessories.[167]

According to representatives at Pilotfish, they believe that the company can get a market share of about 20 % when it comes to the mobile surveillance, diagnostic and monitoring services in Germany and France, if both markets are entered at the same time. Instead, if Germany is chosen first and the company succeeds, it would be possible to gain a market share of more than 40 %. When it comes to Great Britain, the market share is estimated to be as high as 40 %, mainly because they already have a representative there and several contacts.[168]

[162] Interview with Mats Carlsson and Göran Kellner at Larmtjänst, [2001-05-18]
[163] Interview with Bengt Hallström at Diesel Cleaning AB, [2001-05-15]
[164] Interview with Leena Haabma at Sveriges Byggindustrier, [2001-05-17]
[165] Lundgren, Carina, [2001]
[166] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17] and with Björn Bäckström and Gunnar Nilsson at Maskinleverantörerna, [2001-05-18]
[167] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[168] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]

Furthermore, about 60 % of the owners of earthmoving equipment in Sweden today have only one machine[169] and this category is probably not very interesting for Pilotfish since the owners simply have too few machines. The typical customer would be a company that rent out earthmoving equipment. They most often rent out the machines in shifts (1 shift is most often 8 hours). There would be a need for controlling that the machines are not utilised more hours than agreed. About 40 % is a fixed cost and the rest is flexible. The customer could be the machine owner, the companies within the business of earthmoving equipment, which most often rent out one machine including a driver, and a company like Cramo. Cramo rents out both the machines and the driver and they own almost every type of machines and give the customer usage rights to all the machines he/she wants. If the utilisation rate is above 50-60 % it will probably be interesting. The utilisation rate will influence the price of the mobile services.[170] Bengt Hallström[171] also thinks that an owner of earthmoving equipment where the machines are rented out is probably very interested in managing and controlling his/her machines. Planning is an important part in their business. The owner should at least have 5-10 or more machines.

4.4 The most interesting market

With all the above in mind, we have come to the conclusion that Great Britain is the most interesting market to select and enter in the beginning. The reason for not choosing the market with the highest market potential, i.e. Germany, is mainly because the company demand is estimated to be higher in Great Britain and Pilotfish also already has a sales representative there and also several important business connections.

[169] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[170] Interview with Leena Haabma at Sveriges Byggindustrier, [2001-05-17]
[171] Interview with Bengt Hallström at Diesel Cleaning AB, [2001-05-15]

5 ENTRY STRATEGY

After selecting Great Britain as the most interesting market to enter, we will in this chapter analyse different decision criteria and finally recommend entry strategy in this country.

5.1 Decision criteria

5.1.1 Macro environments

The macro environment concerns economical, political, legal, cultural and social variables. As concluded in the analysis of the most interesting market, all the countries in the European Union (EU) are believed to have sufficient political and economical stability. No legal restrictions influence the entry decision since once the product is adapted to the EMC directive it is approved for manufacturing and selling throughout the EU. When it comes to the cultural environment Sweden is seen as the wireless centre[172] of the world and therefore it is probably better to market it as a product with a Swedish origin.[173]

5.1.2 Industry conditions

As earlier stated the production within the area of earthmoving equipment is rather global and the competition seems to be low (there are 4-5 large global and dominant producers) and steady throughout the whole world.[174] We believe that Pilotfish's main competitors will be/are the manufacturers of earthmoving equipment that will offer mobile services. The market volume (potential) of a mobile service solution like Pilotfish's is large and has a high growth potential.

5.1.3 Market considerations

One of Pilotfish's concerns is to be able to influence the market in terms of marketing, product development, etc. The management wishes to get experience of this market to be able to use the knowledge possibly in other strategic markets.[175] As stated in the ruling out procedure (see section 4.1.1), Great Britain also generally has a high technological level. When it comes to the country's infrastructure, i.e. in this case the GSM coverage, it is sufficient and acts like a resource.[176] Regarding the distribution of Pilotfish's solution, we believe that it is rather easy since the distribution channels are highly developed. Furthermore, the market for mobile services and Pilotfish solution is in its growth phase and the need for information therefore is high.

Regarding distance and resource supply and control requirements, we believe that these factors are not very relevant for Pilotfish and the selected market, i.e. Great Britain.

[172] Lindgren, M, Jedbratt, J and Svensson, E, [2001]
[173] Dahringer, L.D and Mühlbacher, H, [1991]
[174] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[175] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]
[176] GSM World website, [2001-04-25]

5.1.4 Product considerations

A barrier regarding the product characteristics might be the conservative resistance to technology among some owners and users of earthmoving equipment. The attitude towards new technology and IT is a matter of generation, i.e. the age of the persons involved, and the general attitude in the company. The economy is also very important in the business in general. Therefore it is important to motivate the customer.[177] The price of the product/service solution must be legitimate.

There is probably a high degree of demand for service support, both when implementing the solution but also afterwards when problems appear and when maintaining the equipment. Thus, the wide disparity between product development cycles for electronic hardware and the product that the solution is connected to has to be considered. Electronic hardware and software is upgraded every six to 18 months which is a very fast cycle compared to many other products.[178] Pilotfish's solution makes the software possible to upgrade remote, e.g. from Sweden, but all hardware maintenance or installation features must most certainly be made locally. There will also probably be a need of supporting the department of Telematics within the customer company if the customer is a larger company.[179]

The usage of the product/service solution is rather complex when it comes to the implementation and service support. This does not include the usage of the actual mobile services, which has to be user friendly, i.e. not complex.[180] Since the industrial market has different demands than a consumer market, e.g. higher involvement regarding support and need of control, Pilotfish probably has to be close to the customers. This is also supported by Webster[181] since he argues that a marketing-oriented industrial company is often much closer to its customers than the typical marketing-oriented consumer company.

Furthermore, Pilotfish's product/service solution is in the early phase of the product life cycle, i.e. the growth potential is high.

5.1.5 Financial considerations

According to Pilotfish, it may be difficult to obtain new venture capital until the company has a positive return, but the company is estimated to make a profit hopefully within the end of this year. This means that the available capital within the company is very limited. But if the company were able to convince the investors and show the possibility to earn a lot of money on the investment, i.e. to make a marketing plan, it would be much easier to obtain new capital.[182] When it comes to the risk willingness, the management are interested to reduce the risk at the expense of control, at least in the beginning of the internationalisation.

Regarding currency risk the Swedish crown (SEK) is relatively weak compared to the British pound (GBP) and other currencies as well[183], which may be an opportunity today,

[177] Interview with Leena Haabma at Sveriges Byggindustrier, [2001-05-17]
[178] ITS America website, [2001-05-25]
[179] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]
[180] Ibid.
[181] Webster, F.E Jr, [1991]
[182] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]
[183] Yahoo Swedish news website, [2001-05-29]

but if the value of the Swedish crown increases compared to the pound the estimated revenue may decrease.

5.1.6 Issues specific to the firm

Pilotfish's sales objectives include a relatively high market share and thus high sales. The market share is estimated to be as high as 40 % in Great Britain (see also section 4.3.3). Regarding non-financial resources, e.g. personnel and strong management, Pilotfish already has a sales representative located in Great Britain and several contacts. They also have possibilities to permanently spare personnel from Sweden to Great Britain, although these are limited. Pilotfish also believes that internationalising is necessary for the company to compete effectively since the potential market is too small in Sweden.[184] Furthermore, entering Great Britain would be Pilotfish's first major experience of internationalisation and thus, they are at the beginning of the market experience curve.

5.2 Analysis of decision criteria

In this section we will first discuss the factors supporting a direct and an indirect foreign entry approach. After that we will grade the different alternatives within the preferable market entry approach and give a recommendation to Pilotfish.

5.2.1 Factors supporting a direct foreign entry

When studying the macro environment in Great Britain the cultural environment suggests an approach where production and marketing focus on the Swedish origin. Thus a joint venture or direct investment that incorporates the Swedish name and company is preferable. The large market volume along with the high growth potential in Great Britain, also propose a direct foreign investment technique.[185]

High-growth products in attractive markets also suggest a direct market entry. In such cases the company gains product and brand awareness and controls the marketing of the product/service. By this approach Pilotfish can gain market shares quickly and raise barriers to entry by competitors.[186]

Another important factor, closely linked to market influence and control, is information. Pilotfish need information that can be difficult to obtain if not physically present in the market. The most appropriate technique regarding this criteria is a direct, marketing-only entry or direct marketing and production with capital involvement. Furthermore, since Pilotfish wishes to be able to influence the market, direct marketing and production entry techniques are called for. The possible problems concerning the implementation of the product/service solution also suggests a direct entry mode.[187]

The product characteristics of Pilotfish's solution suggest a market entry technique that gives the organisation direct control. Since there is a large need for service, the preferred market entry technique will be one that entails direct product involvement. According to Grönroos[188], direct export is common at industrial service markets. Furthermore, the

[184] Interview with Pasha Rouzbeh and Karl Runeberg at Pilotfish Networks AB, [2001-05-15]
[185] Dahringer, L.D and Mühlbacher, H, [1991]
[186] Ibid.
[187] Ibid.
[188] Grönroos, C, [1999]

usage of an export trading company, i.e. indirect entry-marketing only, is not appropriate for Pilotfish's product/service solution, mainly since it is rather complex. The complexity of the product/service solution means that a function is sold rather than a simple product and service. This implies that Pilotfish has to cooperate with the customers (the industries) and be present at the market. A direct entry with marketing or production is suitable, e.g. a joint venture, often with high capital involvement.[189] This is also supported by Grönroos[190] who argues that a service firm has shorter time available for learning. The reason for this is that the local organization normally has to be able to produce and deliver the service from the beginning.

Finally high sales and market share objectives demand a major presence in the market, at least a corporate sales office. Since Pilotfish's international market experience is relatively low, entering a country that seems to be similar to the home country is common to be able to reduce risks. Furthermore since Pilotfish is a relatively small company that believe internationalisation is vital for their expansion, a direct market entry strategy is preferable.

5.2.2 Factors supporting an indirect foreign entry

Since the market is highly technologically developed, Pilotfish can transfer its product directly onto the market. Entry techniques that involve little or no capital involvement are suitable in this case, e.g. licensing. Concerning the financial cost of market entry we believe that it should be kept relatively low, due to Pilotfish's financial situation. Therefore a technique that suggests an indirect entry with marketing-production might be appropriate. Furthermore, using a direct entry with marketing only with the help of an import house is not appropriate for Pilotfish's product/service solution, mainly since it is rather complex.[191]

5.2.3 Factors supporting both a direct and an indirect foreign entry

There are also factors that support both a direct and/or an indirect market entry. For example, the well-developed infrastructure suggests an indirect technique or a direct, marketing-only strategy. Furthermore, since there is limited capital within the company and a relatively low tolerance for financial risk, a direct production entry or an indirect marketing-only entry may be preferred.

[189] Dahringer, L.D and Mühlbacher, H, [1991]
[190] Grönroos, C, [1999]
[191] Dahringer, L.D and Mühlbacher, H, [1991]

5.3 *Recommendation of entry mode*

When looking at the different factors supporting a direct or an indirect entry approach, our conclusion is that a direct entry is most appropriate in the case of Pilotfish. Carman and Langeard[192] argues that a service firms using direct entry immediately face quality expectations, distribution structures etc, on the foreign market. This has to be considered since it will affect the early entry stages on the market.

If we have a look at figure 2:6, page 24, the direct entry techniques are import house, wholesale or retail purchasing groups, export departments, foreign sales representatives or branch offices, joint venture or direct foreign investment. Therefore we will grade these entry techniques in table 5:1 below, with the discussion in section 5.2 in mind.

Table 5:1 Evaluation of entry modes in Great Britain.

Rating
1 = Not appropriate
2 = Average
3 = Appropriate

	Macro environments	Industry conditions	Market considerations	Product considerations	Financial considerations	Firm specific issues	Total score
Import house	2	1	1	1	2	1	**8**
Wholesale or retail purchasing groups	1	1	1	1	2	1	**7**
Export departments	2	1	2	2	3	2	**12**
Foreign sales representatives or branch offices	2	2	3	2	3	2	**14**
Joint venture	3	3	3	3	1	2	**15**
Direct foreign investment	3	3	3	3	1	2	**15**

Source: Modified handout from Molnàr, J, [2001]

As a small company it takes a lot of resources to get attention. Therefore a partner is an excellent choice. It is also important to be patient since it may take a long time before succeeding.[193] According to us Pilotfish should not make a joint venture with another mobile services company since they already got a functioning product/service solution.

[192] Carman, J.M and Langeard, E, [1980]. Referred to in: Grönroos, C, [1999].
[193] Interview with Marcus Svedberg at the Swedish Trade Council, [2001-05-17]

What Pilotfish need is the knowledge about earthmoving equipment, i.e. the one that exists within the producers or the sellers of the machines or the sellers of spare parts.

Regarding the control, we believe that Pilotfish should have relatively high control since adaptations of the solution to the new market etc probably will be needed. Therefore we think that a joint venture with the producers or sellers of the machines is less appropriate in the beginning, since Pilotfish has limited access to financial capital. Thus a joint venture is interesting, but it would probably mean that Pilotfish would have very little control.

With the above in mind, we recommend Pilotfish to keep their sales representative and possibly establish one or two more that has knowledge about the area of earthmoving equipment. The reason for this is that the current sales representative is working the marine market for seaKey. The Swedish Trade Council also supports establishing a sales office.[194] This approach would mean that Pilotfish starts at step 3, e*stablishment of a sales division abroad*, in the product internationalisation strategy model, i.e. the Uppsala-model by Johanson and Wiedersheim-Paul[195]. Note that this implies for the *whole* product/service solution offered. When it comes to the mobile services, step 3 in Roberts[196] service internationalising strategy model is applicable, i.e. *provision of services to foreign markets through wired exports*.

The sales representatives should try to convince both the larger owners of the machines (the post-market) to create a pull demand of their product/service solution. They should also chart the market and make a marketing plan as well as trying to convince a producer of earthmoving equipment (the pre-market) about their solution's advantages. When it comes to functional interdependence it will probably be advisable to make some organizational adaptations of the functions within the company in Sweden, to be able to meet the needs of the new potential customers in Great Britain.

Later on, it would probably be very advisable to try to establish a joint venture with a producer of the machines on the first hand and secondly a seller of the machines. It would most likely be easier to establish a joint venture when the needs of the market have been charted, etc. A long-term relationship would probably evolve over time and it is important that the parties build mutual trust and knowledge through interaction with each other. If the joint venture with a manufacturer of earthmoving equipment would succeed, an opportunity for systems export throughout several countries could arise. Therefore we suggest a market-seeking mode in the beginning of the internationalisation and later on, when setting up a joint venture, some sort of a client-following mode.

[194] Ibid.
[195] Johanson, J and Wiedersheim-Paul, P, [1975]
[196] Roberts, J, [1999]

6 CONCLUSIONS, REFLECTIONS AND SUGGESTIONS FOR FUTURE RESEARCH

In this final chapter of the thesis we will shortly present our conclusions when it comes to the main and sub problems. Furthermore we will make reflections about thoughts and ideas regarding the area of earthmoving equipment and also discuss some weaknesses of the thesis. Finally we will make suggestions for possible future research.

6.1 Conclusions

We have chosen to answer/discuss the sub problems first and after that, we will sum up the discussion in the main problem.

Sub problems:

a. Make an analysis of foreign markets and select the most interesting market.

At first we had 11 countries to investigate. After step 1, we found out that the most interesting countries for further research was Germany, France and Great Britain. The reasons were mainly because of excellent GSM coverage and a very high market potential.

After the final step 3, we came to the conclusion that Great Britain is the most interesting country to start out with and enter. Several persons interviewed (e.g. Lars Rönström, Björn Bäckström and Gunnar Nilsson) agreed that the market potential is crucial and that Great Britain has a very large potential market. The reason for not choosing the country with the largest market potential, i.e. Germany, is mainly because Pilotfish already has a representative in Great Britain and several business contacts. The company demand is also estimated to be higher in the country.

Therefore our answer to this sub problem is to select Great Britain as a market to start out with.

b. Make an analysis of potential entry strategies and recommend an entry strategy in the selected market.

Our recommendation concerning entry strategy in Great Britain is to keep their sales representative and possibly establish one or two more that has knowledge about the area of earthmoving equipment. Pilotfish may both try to influence the pre- and the post-markets, e.g. on the pre-market some manufacturer of earthmoving equipment in the first hand and secondly a seller of the machines, and on the post-market owners of several machines. Furthermore, we believe that a joint venture is appropriate at a later stage, i.e. when Pilotfish has been able to investigate the different needs within the market and made adaptations to them. If the joint venture with a manufacturer of earthmoving equipment should succeed, systems export throughout several countries could arise, possibly making Pilotfish's solution worldwide.

Main problem:

How should a mobile services company internationalise?

As stated before, the type of mobile service solution that Pilotfish offer consists of both a generic Telematics platform, i.e. a product, and mobile services connected to it. Therefore we believe that an approach like ours is preferable. On the other hand, if a company should internationalise with solely a mobile service, i.e. with no need of a specific product, the situation might be radically different. Thus, there are probably differences if the mobile service is attached to a product or not. A single mobile service "only" has to be transported through a bearer like GSM, whereas Pilotfish's mobile service solution is attached to a product and physically has to be transported and implemented with *another* product, in this case earthmoving equipment.

6.2 Reflections

Pilotfish could persuade some manufacturer and possibly collaborate with that company and implement the product/service solution on their machines when they are sold. This is a very important fact, since there are only a few large producers of earthmoving equipment in the world and the market is rather global[197]. Thus it is significant to have the manufacturers support since the market of earthmoving equipment is global.[198] Edvardsson, Edvinsson and Nyström[199] also argues that relations within the company and with other companies through networks are essential to be competitive and to be able to be successful regarding for example R&D. If this strategy is implemented Gozzo et al[200] emphasize the importance of finding the right companies to cooperate with.

It might be difficult to persuade a manufacturer to implement Pilotfish solution. A possible solution could be to market mainly towards the owners of several machines including the drivers. The derived demand from the owners would probably induce the producers to implement them. It is also important to remember all of the machines *already* at the market, i.e. used machines on the post-market. If Pilotfish is to approach this segment the solution must be easy to install, regardless of the manufacturer of the machine (e.g. Volvo, Caterpillar).

Furthermore, the ability to solve the customers' problems and to satisfy the customers' desires and needs, are an important issue. When translating the service concept to a new cultural and linguistic environment there is of great importance that the company has a clear and distinct packaging solution that creates legitimacy.[201] To keep in mind when talking about remote diagnostics is the fact that the technology itself is not enough. There is a need for the development of processes and systems to make it practical and profitable to handle the information. To get, for example, fault cods from a machine involves only a small amount of data, but running meaningful diagnostics routines requires another level of information in order to determine why the fault code was generated and what it really

[197] Interview with Lars Rönström at Maskinentreprenörerna, [2001-05-17]
[198] Interview with Marcus Svedberg at the Swedish Trade Council, [2001-05-17]
[199] Edvardsson, B, Edvinsson, L and Nyström, H, [1992]
[200] Gozzo, M, Palm, G and Palmstierna, R, [1996]
[201] Edvardsson, B, Edvinsson, L and Nyström, H, [1992]

means. To make the right decision, you have to collect a lot of information in real-time. This is both difficult and expensive when using a wireless service.[202]

When it comes to some weaknesses in our thesis, we have not been able to do our research in respective country, mainly because of economical reasons. Another criticism to the market selection research is that the model tends to be static rather than dynamic, i.e. the criteria used most often measure a state at one specific time in a market and some criteria tend to be dynamic like economical and political situation in the countries. Therefore there is a risk that a country ruled out at an early stage in the model might be considered as uninteresting for further expansion in the company, although the country might have undergone dramatic changes since the market selection was made.

It has also been very difficult to compare and use statistics from UN, OECD and EU. The main reason is that there are no worldwide standards when it comes to classification of machines etc. Furthermore the unit of measurement varies widely. Worcester[203] discusses these problems of international comparability when analysing different markets. He argues that there is a need for adaptations of the questions used in different countries, although it must not be over-stressed.

6.3 Suggestions for future research

Possible future work includes investigating and comparing the size of different usage areas within the area of earthmoving equipment. It would also be interesting to study the opinions and needs of different involved parties, e.g. the machine owners, the drivers and the producers. Furthermore, it would be exciting to investigate how soft mobile services should be internationalised.

[202] Mele, J, [2000]
[203] Worcester, R, [1991]

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