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Commercialization of a New Innovation in a Foreign Market

The case of Piper and Egyptian Pipe Market

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Abstract

The purpose of this paper is to explore and point out the several main factors that should be taken into consideration by “Piper”, a Swedish start-up company, before entering a foreign market with their new innovation. This process is carried out in order to be able to provide them with short-run, medium-run, and long-run recommendations of commercializing their new innovation in the Egyptian market; a market chosen by mutual agreement between the company and the authors. This is done based on previous models developed for companies and firms that choose to enter a foreign market with their new innovation. The internal and external factors affecting Piper are carefully explored and analysed through the collection of primary and secondary data so as to be able to formulate a fitting commercialization proposal for the company.

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1 Introduction

In this chapter the reader will be introduced with the main problem that our research study is focusing on, we will provide them with our research question and the purpose of this study. We will also give the reader an outline of the paper.

Around 80 percent of the pollution in the Mediterranean environment comes from land based sources such as agricultural waste and river run-offs (Christine & Sommer, 2008). The rate at which the Mediterranean area is being polluted has increased for the past years due to tourism and urbanization. This pollution can in the long run effect negatively both the health of the inhabitants and the economy of this region (Christine & Sommer, 2008). This is a big problem for the region and one of the countries concerned with this problem is Egypt.

Egypt has during the last thirty years seen an increase of its population from 36 to 83 million people. One problem (because of the increase in population) for the Egyptian Government has been to provide its people with access to sanitation facilities and clean water (European Commission, 2009). The Egyptian government had succeeded in giving 97 percent of the urban population access to sanitation facilities and water network (The World Bank Group, 2012), but still 75 percent of the rural population are still missing out on stable water supply and access to sanitation facilities (The Holding Company for Water and Wastewater of the Arab Republic of Egypt , 2009). Because of these inequalities in access to water networks and sanitation facilities the Egyptian Government created HCWW (The Holding Company for Water and Waste water), a dedicated governmental agency with the goal of improving the access to sanitation facilities and water networks for the entire population (The Holding Company for Water and Wastewater of the Arab Republic of Egypt , 2009). Between 2012 and 2037, there are planned investments in the sanitation and water industry of 98 billion L.E. (Livre Egyptienne, Egyptian pound), this amount is divided up between HCWW and the European Union (The Holding Company for Water and Wastewater of the Arab Republic of Egypt , 2009).

1.1 Problem

As argued above there are a lot of possibilities in the industry of pipe systems in Egypt and has a lot of business opportunities if somebody chooses to enter that market. Furthermore, due to globalization the possibilities for a non-Egyptian company to enter this market have become a lot easier. This is not only the case for big companies but also SMEs (small and medium sized enterprises) with a limited amount of resources at its disposal (Root, 1998). The ways of entering a new market are of course broader for a bigger company because of the resources they have at their disposal, such as capital and management, are much greater. But for SMEs there are some ways of entering a new market more suited for their limited amount of resources. As argued, the possibilities of entering the piping industry within Egypt are present for both SMEs and big companies.

But there are both external and internal problems when entering a foreign market such as target country market factors and company resources that are harder for SMEs to overcome. A

big company can for example choose to open a factory in the foreign country because of access to more resources (Root, 1998). This will make it easier for a bigger company to directly access the foreign market and to have a stronger presence there without being dependent on a third party. Another internal problem for an SME is the scarce resource of knowledge within the organization that makes it harder for an SME to make the right decisions (Root, 1998). Target country market factors also need to be taken into consideration, such as GNP (Gross National Product) and political stability in order to analyze if the country is a good investment to enter.

As argued above, there are several different problems for a company when entering a new market that needs to be solved. According to Clausson and Johansson (2011) are there even more complex problems that need to be solved for an SME if there is a new innovation involved when entering a new market. An innovation is according to Leifer et al (2001)

“a product, process, or service with either unprecedented performance features or familiar features that offer significant improvements in performance or cost that transform existing markets or create new ones”. (Leifer, et al., 2001)

And to enter a new market with an innovation concerns not only factors such as GNP, market growth and how much resources the company possesses over. It concerns for example taking into consideration the question of how to make money from the innovation and protecting its copyrights (Gans & Stern, 2002). When entering a new market with an innovation a company needs to take into consideration the possibility that some other organization will steal the idea, or that another company has a similar solution to the same product. Because of this some questions will rise on how to protect the innovation and make it as hard as possible for others to profit from the idea. Another problem to solve is the dilemma of timing; there are lots of advantages a company gets for being first to the market, but there are also a lot of disadvantages (Lilien & Yoon, 1990).

In order for a company to overcome the problems with entering a new market with an innovation it has to broaden the strategy and not only focus on the right entry strategy. The company needs to set up a strategy that overlaps with entry strategy and is related to it as well, but broadens the scope of it, namely the right commercialization strategy. The difference between the two strategies are according to Clausson and Johansson (2011) that

“What set the two strategies apart are mainly two aspects. While both strategies are concerned with how a firm should take its product to the market [...]” but “entry strategies concern international markets only, whereas commercialization strategies include both. Second, a commercialization strategy always includes an innovation, while an entry strategy can be for an existing product as well.” (Clausson & Johansson, 2011, p. 2).

From this, one can draw the conclusion that a company with a new innovation needs to not only decide the best suited entry strategy, but also the best commercialization strategy and the problems connected to it, when entering a new market.

1.2 The Company

The company that we are conducting the thesis for wishes to remain anonymous so it will be referred to as Piper in this paper. Piper was founded in 2009 in the region of Gothenburg, Sweden but has already grown substantially, even still Piper can be considered as a startup company due to the fact it was founded only three years ago. Piper has developed a new, unique solution for renovating sewage systems in buildings. This product will be referred to as Piper Force throughout the paper. Piper Force can lower the cost of drainage pipe renewal for up to 30 percent. The business model that Piper is currently using is to license Piper Force to other actors in return for a percentage profit, knowledge, education and access to equipment needed to use Piper Force. Piper's goal is to give licensees the optimal requirements for carrying out qualitative, secure and profitable installations of their product. By giving established players in foreign markets the license to use and sell their innovation they are expanding themselves in the pipe renewal business rapidly in markets with already loyal clients.

The innovation that Piper is selling through Piper Force is a method that makes it easier for companies to repair damaged drainage pipes. The method is a way to case the old pipe with a new sort of inner lining that can be classified as a new pipe, with a life expectancy of around 40 years. This new way of repairing new pipes makes it possible for companies to fix pipes without tearing down the floors and walls within apartments and buildings where the pipes are running. It also a cost saving procedure, as stated above, and not that time consuming. Piper Force is protected through patents and copyrights, but as important as those kinds of protections are is also the knowledge within Piper and it is this concept that Piper is selling to its customer. The product Piper Force is clearly an innovation as defined by Leifer et al (2001) because it transforms an already existing market and that offers significant improvements in cost and performance.

1.3 Research Question

As argued above there are some problems and factors a company need to take into consideration when entering a foreign market. Because of this our study aims at investigating how a small Swedish firm can enter a foreign market, in this case the company is going to be the company described in the section above called Piper. The country we are going to investigate and analyze is Egypt, and this will lead us to the research question:

What is a suitable commercialization strategy for Piper when entering the Egyptian market?

1.4 Purpose

The purpose of this study is to investigate how Piper can enter a foreign market, what options there are and what factors does a small company need to take into consideration. The only focus the paper will have is on the different commercialization strategies and entry strategies

that Piper has at its disposal. We will answer the question and give our suggestions on whether or not Piper should enter the Egyptian market, and if so what do we think is the best entry strategy.

In this paper we will create a tailored framework for Piper that they can use as a model when entering the Egyptian market and for other markets as well. The framework we have created is only for Piper and the conclusions we have drawn are only for Piper. Other companies can use the framework and apply it both on the Egyptian market and on other markets as well. But they should be aware that we did not take them into consideration when creating the framework.

1.5 Disposition of the Thesis

The outline of this paper is as follows:

1. Introduction

The introduction will introduce the thesis for the reader. First it will give the reader a short overview of the background of the Piping industry of Egypt. Second, the introduction will give the reader the background information about the underlying problem that we are trying to solve, which is to give the company Piper a strategy on how to enter the Egyptian market and what external and internal factors does Piper need to take into consideration. We will also provide the reader with background information about the company Piper and the product they are selling. In the end of the introduction we will provide the reader with our research question and the purpose of the study.

2. Theoretical Framework

In the second section, Theoretical Framework, we will present the reader with the theoretical literature that we have used. It consist of seven parts, namely an introduction, internal and external factors, market analysis, resources and capabilities, commercialization strategies, entry strategies and connecting the dots. The section about internal and external factors will provide the reader with background information about what affects a company when commercializing a new product and entering a new market. Market analysis will provide the reader with external factors that affects the process of commercialization and the section resources and capabilities will discuss the internal factors affecting the process. The part about commercialization strategies will give the reader our theoretical framework about what a company need to think about when commercializing a new product and the key concepts about that process. In our case study, we will also discuss entry strategies and what type of options there are for Piper when entering a new market and these options will be provided to the reader in the section of entry strategies. At the end of this chapter we will connect the dots from the previous sections and provide the reader with our framework that consists of the different presented concepts.

3. Methodology

When conducting a research study it is always crucial to make it possible for the reader to create own opinions about the validity of the research. In order for the researcher to be able to

do this we are stating how the research was conducted in the methodical part. We will present the reader with the way we conduct the research, why we choose to conduct it that way and the limitation of conduction it that way. Furthermore, we will also provide the reader with information about how we conducted the process of collecting empirical findings and the way we did our interviews.

4. Empirical findings

This chapter will give the reader all the findings we did when collecting the data. It will provide the reader with the interviews and what kind of answers we will get from the respondents. We will not give the reader the entire interviews in this chapter; instead we have attached them in the appendix and we have only used quotes from the interviews. Quotes that we think are the most important ones in order for us to answer the research question. We will also provide the reader with some quantitative data that we have collected during the process of gathering data and that will help us in determining the best answer to the research question.

5. Analysis

In order for us to draw the right conclusion we will have to analyze the data we have collected with the theoretical model that we have made. This process is going to be explained in this chapter and we will her discuss the empirical findings that we have collected and how the theoretical model is used when analyzing the data. We will both discuss the positive sides of entering the Egyptian market and the negative aspects.

6. Conclusion

In the last section we are going to presented to the reader our conclusion on how Piper should enter the Egyptian market; this answer will be based on the analysis made. We will also present the reader with future research possibilities.

2 Theoretical Framework

This section will introduce the reader with our frame of references and the theoretical models that are the foundations of our theoretical model.

2.1 Introduction

When a company is commercialising a product to a new market there are a lot of factors that needs to be taken into consideration. There is for example a lot of knowledge a company needs to know about the foreign market that they do not know at the moment. This leads to the fact that a thorough market analysis is needed in order to get information about market conditions, economical factors and cultural barriers and so forth. Another important insight a company needs to understand is that both internal and external factor having an impact on the entry process. The internal factors are for example the amount of economic resources the company possesses over, management know how about the country in general and know how about market factors within the country in specific. This chapter will consist of six more sections, the first five will describe the cornerstones of our model and the last section will present the model we will use. The sections will be as followed:

Internal and External factors: This part will explain the fundamental concepts on why products, companies and entry strategies are successful. In this section we have drawn inspiration for example from Grant (2010) and Cooper and Kleinschmidt (1987).

Market Analysis: In this part we will explain which external factors are important to focus on while choosing to enter a new country and selecting a suitable entry strategy. In this part we will also present which model we use to screen which countries to enter. In this part we have been inspired by models made by Rahman (2003) and others experts on market analysis.

Resources and Capabilities: We will here give the reader a short introduction about what resources and capabilities that are important for a company to succeed in their business environment. Chandler and Hanks (2002) have been two authors that have been guiding us through this part of the paper.

Commercialisation Strategies: In order for a company to determine the best way of entering a new market they needs to be aware of different concepts related to commercialisation. In this section we will present our commercialisation model based on research made by example Teece (1988; 1986; 2010).

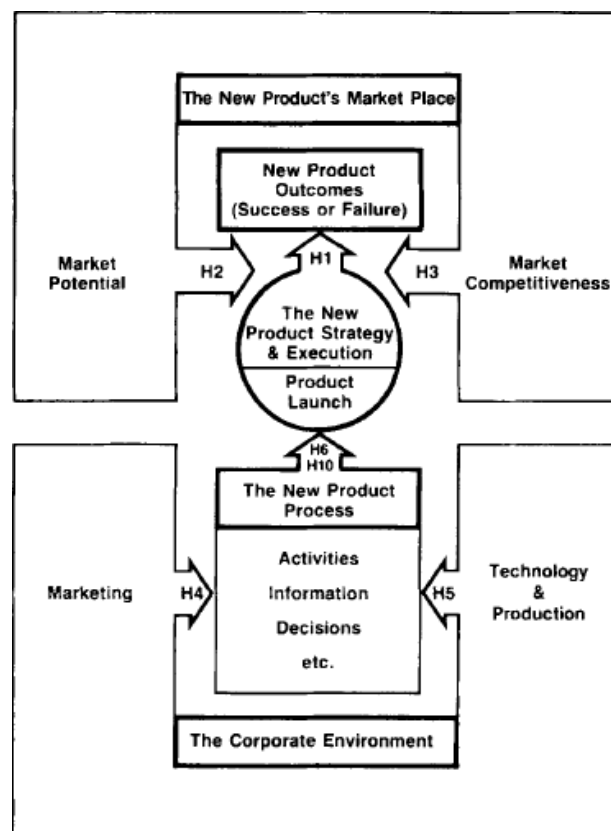
Entry Strategies: This is together with the section “Commercialisation Strategies” the most important sector that will give the reader some insight in how to enter a new market and what factors to use. Our model will in the end be based on frameworks created by Root (1998).

Connecting the Dots: In this section our own model will be presented to the reader explaining how it works.

2.2 Internal and External Factors

There are a lot of different factors that are determining the success of new product commercialization. When entering a new market there is a lot of different factors that a company needs to take into consideration such as intellectual property rights and complementary assets in order for a company to make a profit from an innovation. These factors are both of internal sorts and of external sorts so basically the two big concepts are internal and external factors, and these needs to be addressed if a company is going to compete with its products in a prosperous way (Grant, 2010). Cooper and Kleinschmidt (1987) present a model that makes a distinction between the internal parts of a company and the external parts of the company's environment when commercializing a product (See Figure 1: External and Internal Factors).

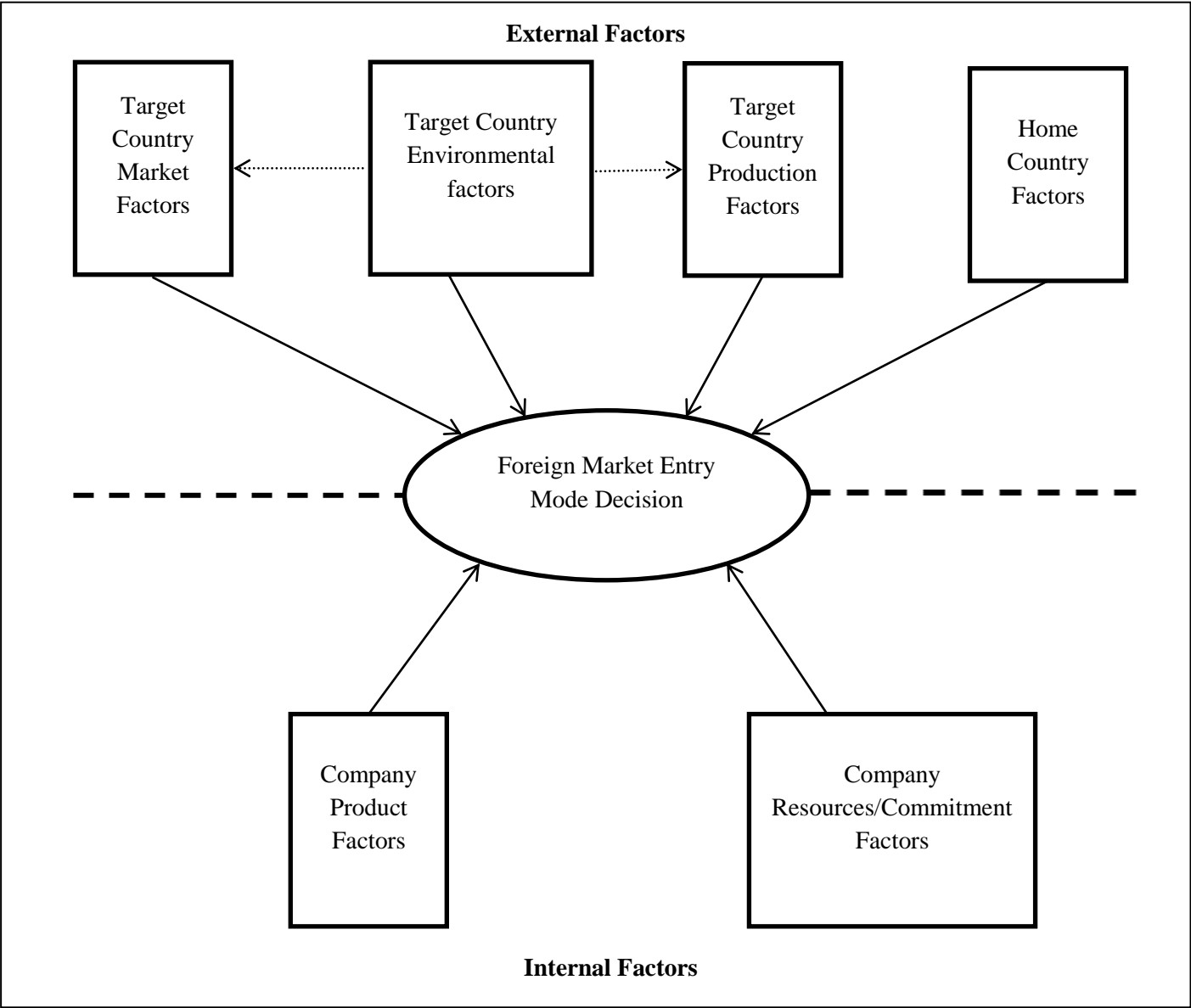
Figure 1: External and Internal Factors (Cooper & Kleinschmidt, 1987)



The commercialisation phase that one normally thinks of is when the box labelled 'H6' and 'H10' shifts to the circle labelled 'H1'. But Cooper and Kleinschmidt (1987) model shows that it is a lot more processes and factors involved, both external and internal, such as "Market Competitiveness" and 'Marketing'. "Market Competitiveness" is about the competitive structure within a market. It determines if the competition is strong or weak, the size of the competitive organisation etc. 'Marketing' is about the internal processes of the activity marketing, and it is for example how the company decides how to market the product. These internal and external activities and factors are the ones that have an impact on the success of a commercialisation process. The model that Cooper and Kleinschmidt (1987) presents has a lot in common with the model presented by Root (1998). The difference is that Root (1998) focus on how to enter a new market and not so much on the commercialisation phase of a new

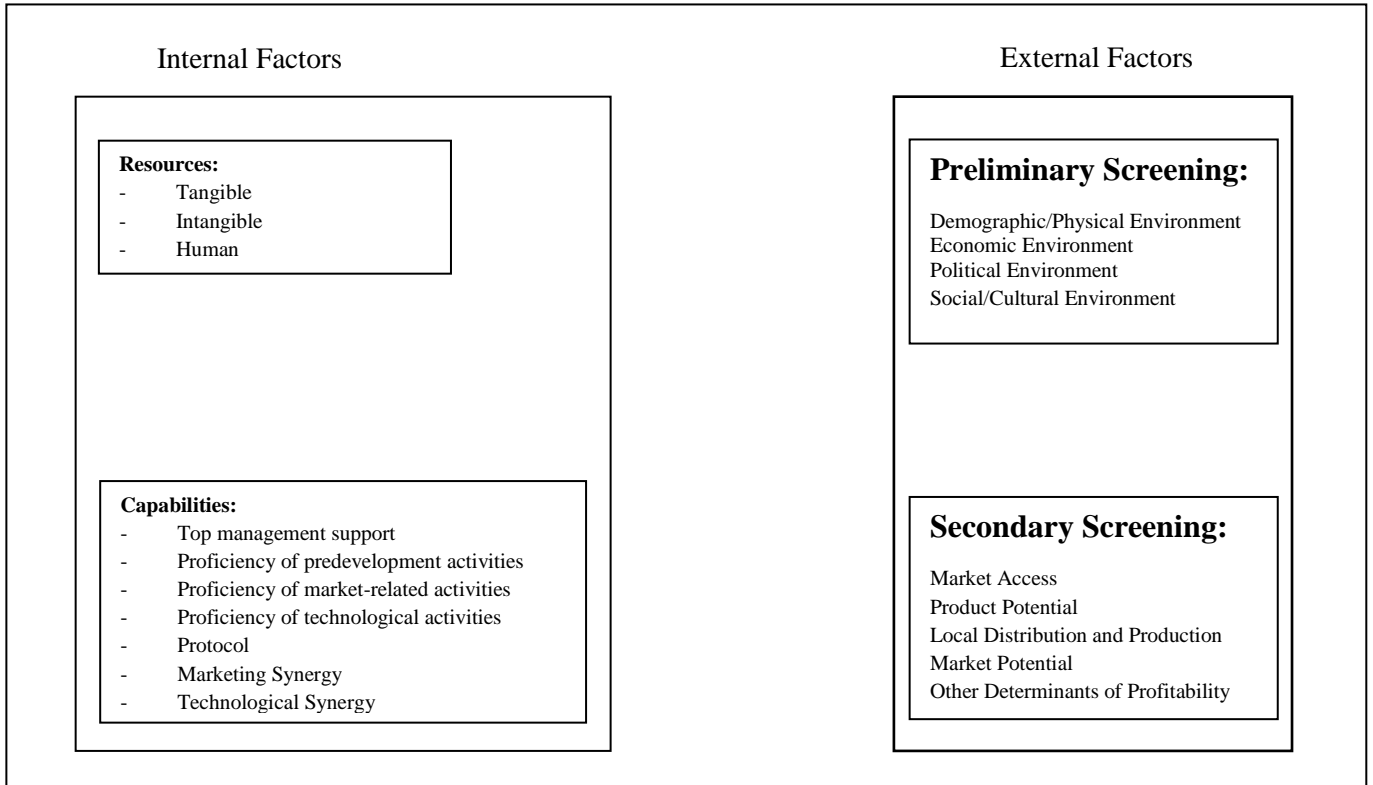
product. Root (1987) presents a model (Figure 2: Factors that has an impact on the entry mode decisions) that separates external factors such as “Target Country Market Factors” from internal factors such as “Company Resources”.

Figure 2: Factors that has an impact on the entry mode decisions (Root, 1998)



One can from this draw a discussion that in order for a company to commercialize and enter a new market there are two big key factors that is determining the success of a company’s performance, namely internal and external factors. In order for Piper to access a new market we need to look at their internal factors and the external factors of the market at hand. The first part of our model (Figure 3: Internal and External part) will reflect this and therefore we will first highlight the internal factors (Piper) and external factors (Egypt). The Right side of Figure 4 will focus on the external factors that are in this case Egypt; this is done with the tool “market analyses”. The left side of the model will focus on the internal factors within Piper, factors that are best categorised in two groups, resources and capabilities.

Figure 3: Internal and External part



2.3 Market Analysis

A lot of companies are not aware of the importance that market analysis has before entering a new foreign market, and can base their market entry on factors such as intuition, personal relationships, and social factors (Chirici & Larsed, 2011). Papadopolous (1988) and Ellis (2000) also claim that in several studies it was found that some firms choose to ignore the much needed market research and base their market selection on non-systematic procedures and irrational reasons.

One of the important tasks that a company should carry out before entering a foreign market is analysing it. It is quite important in helping determine what strategies are to be used and helps give a general overview of the different factors that need to be taken into consideration. As Cavusgil (1985) states in his article, market research is usually carried out in order to try and minimise any uncertainties, to try to find possible solutions for different problems, and to tailor a suitable marketing strategy. Cooper and Kleinschmidt (1987) argue that analysing the market potential in relation to a specific product before market entry is crucial in coming up with a successful strategy. Brouthers and Nakos (2005) also found from the studies carried out that one element is of great importance, namely how dependent is a company on a systematic approach to evaluating a foreign market. They found out that the more systematic a company is in its research of a market for potential entry, the better it performs in that country. All these finding and claims just prove to us how important market research before entry is!

For the larger companies, carrying out such an analysis is feasible since they possess the required resources. But for the smaller less resourceful companies such as start-ups, this used to be a problem. The limited resources usually prevented start-ups from exporting their businesses to new foreign markets (Alon, 2004). However due to the advances in technology, changes in trade agreements between different countries, and changes in the political environment, they are now able to ply their trade abroad and become more international (Brouthers & Nakos, 2005). And so nowadays we can find a lot of start-up companies and SMEs that expand their businesses abroad by analysing markets and trying to determine whether or not they will be successful there. However these smaller sized companies still have to be very careful in choosing where they would be distributing and expanding their efforts and very limited resources.

The process of analysing a market is not an easy one, whether the company carrying out the market research is a big established company or a small start-up firm. There are many different factors that need to be taken into consideration and information gathered in order to be able to come up with a good strategy for foreign market entry. Cavusgil (1985) in his article provides us with a framework for market research which consists of three different stages:

Stage 1 - Preliminary screening (Table 1)

Stage 2 - Analysis of industry market potential (Table 2)

Stage 3 - Analysis of company sales potential (Table 3)

In each of these stages, different factors are looked at and researched in order to gather the required information for the development of a good market entry strategy.

Table 1: Preliminary screening

<p>Demographic/Physical Environment:</p> <ul style="list-style-type: none"> - Population size, growth, density - Urban & rural distribution - Climate and weather variations - Shipping distance - Product-significant demographics - Physical distribution and communication network - Natural resources <p>Political Environment:</p> <ul style="list-style-type: none"> - System of government - Political stability and continuity - Ideological Orientation - Government involvement in business - Government involvement in communications - Attitudes towards foreign business - National economic and developmental priorities <p>Economic Environment:</p> <ul style="list-style-type: none"> - Overall level of development - Economic growth: GNP, industrial sector - Role of foreign trade in the economy - Currency: inflation rate, availability, controls, stability of exchange rates - Balance of payments - Per capita income and distribution - Disposable income and expenditure patterns <p>Social/Cultural Environment:</p> <ul style="list-style-type: none"> - Literacy rate, education level - Existence of middle class - Similarities and differences in relation to home market - Language and other cultural considerations
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In the preliminary screening stage the company selects the country/s that it wants to investigate in detail. There are four main categories that are investigated which include the demographic, political, economic, and cultural environments (Cavusgil, 1985). In these categories there are many different factors that are to be taken into consideration for gathering the required information.

Table 2: Analysis of industry market potential

<p>Market Access:</p> <ul style="list-style-type: none"> - Limitations on trade: tariff levels, quotas - Documentation and import regulations - Local standards, practices, and other non-tariff barriers - Patents and trademarks - Preferential treaties - Legal considerations: investment, taxation, repatriation, employment, code of laws <p>Product Potential:</p> <ul style="list-style-type: none"> - Customer needs and desires - Local production, imports, consumption - Exposure to and acceptance of product - Availability of linking products - Industry-specific key indicators of demand - Attitude towards products of foreign origin - Competitive offerings <p>Local Distribution and Production:</p> <ul style="list-style-type: none"> - Availability of intermediaries - Regional and local transportation facilities - Availability of manpower - Conditions for local manufacture

After the selection of one or several countries for even further investigation and research, the second stage gets underway. In this stage the assessment of the industry market in each of the selected countries is carried out. The factor categories that are taken into consideration include market access, product potential, and local distribution and production (Cavusgil, 1985).

Table 3: Analysis of company sales potential

<p>Sales Volume Forecasting:</p> <ul style="list-style-type: none">- Size and concentration of customer segments- Projected consumption statistics- Competitive pressures- Expectations of local distributors/agents <p>Landed Cost:</p> <ul style="list-style-type: none">- Costing method for exports- Domestic distribution costs- International freight and insurance- Cost of product modification <p>Cost of Internal Distribution:</p> <ul style="list-style-type: none">- Tariffs and duties- Value added tax- Local packaging and assembly- Margins/commission allowed for the trade- Local distribution and inventory costs- Promotional expenditures <p>Other Determinants of Profitability:</p> <ul style="list-style-type: none">- Going price levels- Competitive strengths and weaknesses- Credit practices- Current and projected exchange rates
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This is the third and final stage in Cavusgil's (1985) framework for market research. In this stage, the assessment of company sales potential in the selected countries is carried out. The issues addressed at this stage are sales volume forecasting, landed cost, cost of internal distribution, and other determinants of profitability.

Rahman (2003) also addressed the topic of frameworks for market research. In this paper, Rahman examines and evaluates different market analysis frameworks and the way that they have developed throughout the years. He comes to the conclusion that, unlike Cavusgil's model, those frameworks nowadays have evolved into two main stages rather than three. The first stage in Rahman's framework, like the preliminary stage in Cavusgil's model, consists of factors such as broad economic and social indicators, integrated with product/market indicators and the firm's own international business capabilities. While the second stage consists of factors such as costs, infrastructure and business practice compatibility with business performance needs, government policy indicators and firms own business operation policies. (Rahman, 2003)

The frameworks Rahman (2003) describes are quite similar to that of Cavusgil (1985), the difference being that the second and third stages were more or less merged into one. The purpose of the first stage in both frameworks is usually for the company to select the country/s that it wants to investigate in detail. General factors are taken into consideration and researched in order to decide whether or not the country provides a good environment and is attractive enough for entry. The second stage (second and third in Cavusgil's (1985) model) focuses more specifically on the industry itself and the potential it carries alongside the potential of company performance within that industry.

The market analysis framework we will use is one that is similar to Rahman (2003) and only uses a two stage processes, but we will also use some of the factors presented by Cavusgil (1985). And although the three stage model provided by Cavusgil (1985) was quite thorough and full of details, we felt that in this specific case, there were more details to be considered than needed. So basically the model we are going to use is going to consist of two stages:

1. Preliminary Screening

In this stage we will consider the attractiveness of the country by taking some general factors into consideration. General information is to be gathered about the country in terms of its economy, social factors, governmental policies, and so on. This face is going to be based on screening processes one and two of the Cavusgil (1985) model.

2. Secondary Screening

After we have gathered sufficient information for the first stage and it seems that the country provides an attractive opportunity for entry, we will move on to the more specific second stage, and start to gather primary and secondary data on the market in specific, and all other factors that could potentially affect the entry strategy. We are basing this part of the model on screening process two and three of the Cavusgil (1985) model.

What is being done in the first part of the external factors model is carrying out a PESTEL analysis. Finding out what the macro-economic factors are and how they are going to affect the company's market entry. PESTEL stands for: Political, Economic, Social, Technological, Environmental, and Legal factors. And although the PESTEL analysis method is widely used, each firm must have a list of its own factors, since some of these may be important to one industry while irrelevant to another. When a firm carries out a PESTEL analysis, it helps give it a more broad perspective and accordingly this would most probably improve their accuracy when analysing or choosing a market for entry or operations. It is also a good tool to organise the information provided to us. (OxfordUniversity Press, 2007)

The first part of our market analysis (Table 4) will consist of the macro level factors and will be the part that determines if we will think that the market is attractive or not. Factors within this stage are based on the factors within screening process one and two of the model presented by Cavusgil (1985) and Rahman (2003).

Table 4: Screening process one

<p>Demographic/Physical Environment:</p> <ul style="list-style-type: none"> - Population size, growth, density - Urban and rural distribution - Shipping distance - Product-significant demographics - Natural resources 	<p>Economic Environment:</p> <ul style="list-style-type: none"> - Overall level of development - Economic growth: GNP, industrial sector - Role of foreign trade in the economy - Currency: inflation rate, availability, controls, stability of exchange rates - Per capita income and distribution - Disposable income and expenditure patterns
<p>Political Environment:</p> <ul style="list-style-type: none"> - System of government - Political stability and continuity - Ideological Orientation - Government involvement in business - Government involvement in communications - Attitudes towards foreign business - National economic and developmental priorities 	<p>Social/Cultural Environment:</p> <ul style="list-style-type: none"> - Literacy rate, education level - Existence of middle class - Similarities and differences in relation to home market - Language and other cultural considerations

Screening process one consists for example of economic environmental factors such as “Economic growth” that is based on the measure GNP (Growth National Product), and is according to Maidique and Zirger (1985) important to take into consideration when entering a new market. But also of non-economic factors such as “Demographic/Physical Environment” that consist for example of the size of the population within the country at hand.

After that we will proceed to screening process two (Table 5) that will consist of micro level factors and this part will consist of the external factors that determines if the industry is attractive or not. These are based on the model Cavusgil (1985) uses in in screening process two and three.

Table 5: Screening process two

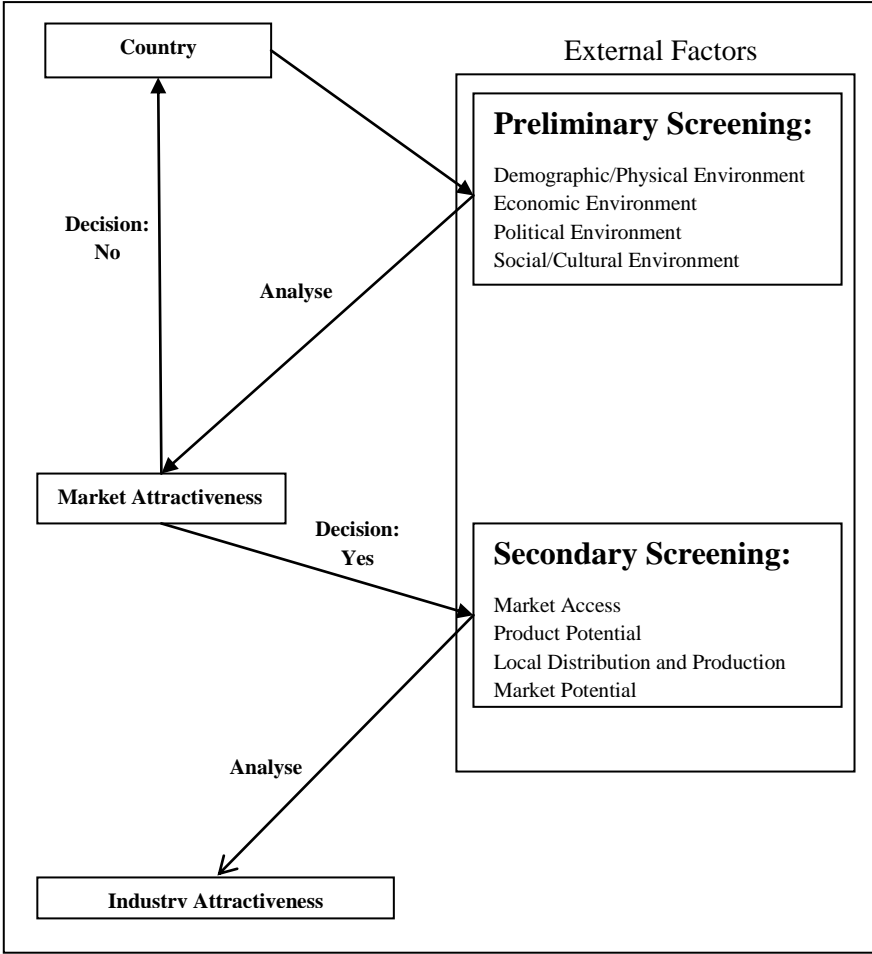
<p>Market Access:</p> <ul style="list-style-type: none"> - Limitations on trade: tariff levels, quotas - Documentation and import regulations - Local standards, practices, and other non-tariff barriers - Patents and trademarks - Legal considerations: investment, taxation, repatriation, employment, code of laws 	<p>Product Potential:</p> <ul style="list-style-type: none"> - Customer needs and desires - Local production, imports, consumption - Availability of linking products - Attitude towards products of foreign origin - Cost to benefit ratio - Degree of quality - Competitive offerings
<p>Local Distribution and Production:</p> <ul style="list-style-type: none"> - Availability of intermediaries - Regional and local transportation facilities - Availability of manpower - Conditions for local manufacture 	<p>Market Potential:</p> <ul style="list-style-type: none"> - Market size - Market growth rate - Market need - Competition amongst existing firms

The factors in Table 5 are mostly of the qualitative sort. For example product potential include the cost to benefit ratio that measures the degree of a product advantage in relation to the products costs which has according to Maidique and Zirger (1983) and Cooper (1979a; 1979b; 1980) a better chance of being a success. Another impact on the potential of the product is the quality of the product and to what degree the quality is superior to competing products. According to Schoeffler et al (1974) and Buzzell et al (1975) this will have an impact on the products chance of being a success. We use these measures in “Product Potential” because it gives us a better understanding of the products chances than to just analyse differences in price between competing products (Maidique & Zirger, 1983).

But there are also some factors that are based on quantitative measures such as the factor “Market Potential” that includes measures such as market size, marker growth rate and market need. These are based on the current size of the companies within the market and there growth rate over time and are according to Cooper (1979a; 1979b; 1980) important to analyse when determining the potential of a market. Both new and old business strategy literature emphasizes the degree of competitive environment as a key index on how to choose a new market to enter (Grant, 2010; Porter, 1985; 2008).

So now we have something to fill the external part of our model (Figure 4: Market analysis model) and what factors that determines the market attractiveness and the industry attractiveness. The first box in Figure determines whether or not the market is attractive enough to continue with the screening process. Market attractiveness is according to Abell and Hammond (1979) and Luck and Ferrell (1985) an important part of deciding which country to allocate resources to. If the market is attractive enough then a second screening is conducted, in which the micro level factors are evaluated and analysed. The secondary screening process will be one of the cornerstones to determine if the industry is attractive enough.

Figure 4: Market analysis model



2.4 Resources and Capabilities

As stated above, internal resources and capabilities of a firm are two key sources in order for a company to be successful and able to compete within the market. Hayes et al (2005) means that a clear understanding of internal resources and capabilities are crucial in order to be successful. Grant (2010; 1991) divides resources into three groups namely: Tangible, intangible and human. These three groups are the foundations of the capabilities of the firm and how it will compete within a market. According to Grant (2010; 1991) resources and capabilities are also the source of the direction of the firm and will help the company at creating the best strategy to compete. For a small start-up firm resources and capabilities are also extra important to be aware of and will be a deal breaker if the people within the firm cannot learn to handle these (Chandler and Hanks, 2002). The internal sources of a company are important to get analyze and to get an understanding of the overall picture of how a company will commercialize and enter a market.

The model we will use in our model will be much based on Grant (2010; 1991) and the resources he provides us with. According to Grant (2010; 1991) there are three general sorts of internal resources namely tangible, intangible and human (See Table 6: Resources within the firm). The tangible resources are of the financial and physical sort, it is for example the amount of financial resources a company possesses over to handle fluctuations within the market. The intangible resources consist of technology, reputation and culture within the firm. Intangible resources are harder to measure but can for example be the amount of patents being approved every year. Human resources consist of the employees within the firm and the skills they possess and the motivation amongst employees. This can be examined through the amount of employee turnover and for how long each employee stays at the company.

Table 6: Resources within the firm

Tangible	Intangible	Human
<p>Financial:</p> <ul style="list-style-type: none"> - Cash - Debt to equity ratio - Securities <p>Physical:</p> <ul style="list-style-type: none"> - Equipment - Plants - Other Assets 	<p>Technology:</p> <ul style="list-style-type: none"> - Patents - Copyrights - Trade secretes <p>Reputation:</p> <ul style="list-style-type: none"> - Brands - Relationships - Level of repeat buying's from customers <p>Culture:</p> <ul style="list-style-type: none"> - Culuture within the fim 	<p>Skills:</p> <ul style="list-style-type: none"> - Educational qualifications - Technical qualifications - Professional qualifications <p>Motivation:</p> <ul style="list-style-type: none"> - Level and consistency of employees - Employee turnover

The capabilities within a firm are according to Grant (2010) the bridge between the strategies if the firm and the resources the firm possess. Cooper and Kleinschmidt (1987) present five different capabilities that are crucial for a company too have if a commercialisation process will be successful that are in different ways connected to the resources above. These five capabilities are Marketing Synergy and Technological Synergy, Proficiency of predevelopment activities, Proficiency of market-related activities, Proficiency of technological activities (See Table 7: Capabilities of a firm).

Table 7: Capabilities of a firm

<p>Marketing Synergy and Technological Synergy: Ansoff (1965) states that synergy is the ‘glue’ that keeps the new connected with the old and is much related to path dependency (Grant, 2010). This ‘glue’ is an important factor for a product to be developed well and market well (Kulvik, 1977).</p>
<p>Proficiency of predevelopment activities, Proficiency of market-related activities and Proficiency of technological activities: Rubenstein et al (1976) are emphasising the importance of doing a thoroughly job at marketing the product when commercialized and Rothwell et al (1974) states that this it is equally important to focus on the quality of the product when building it. The activities proceeding product development is a much needed activity that can, if done properly, be a key success factor when introducing a new product (Booz-Allen & Hamilton, 1982). Some key areas when conducting a pre-product development analyse are market analyses, project evaluation and marketing research (Hopkins & Bailey, 1971; Rothwell, 1972; Rothwell 1976a; Rothwell, 1976b; Utterback et al, 1976).</p>

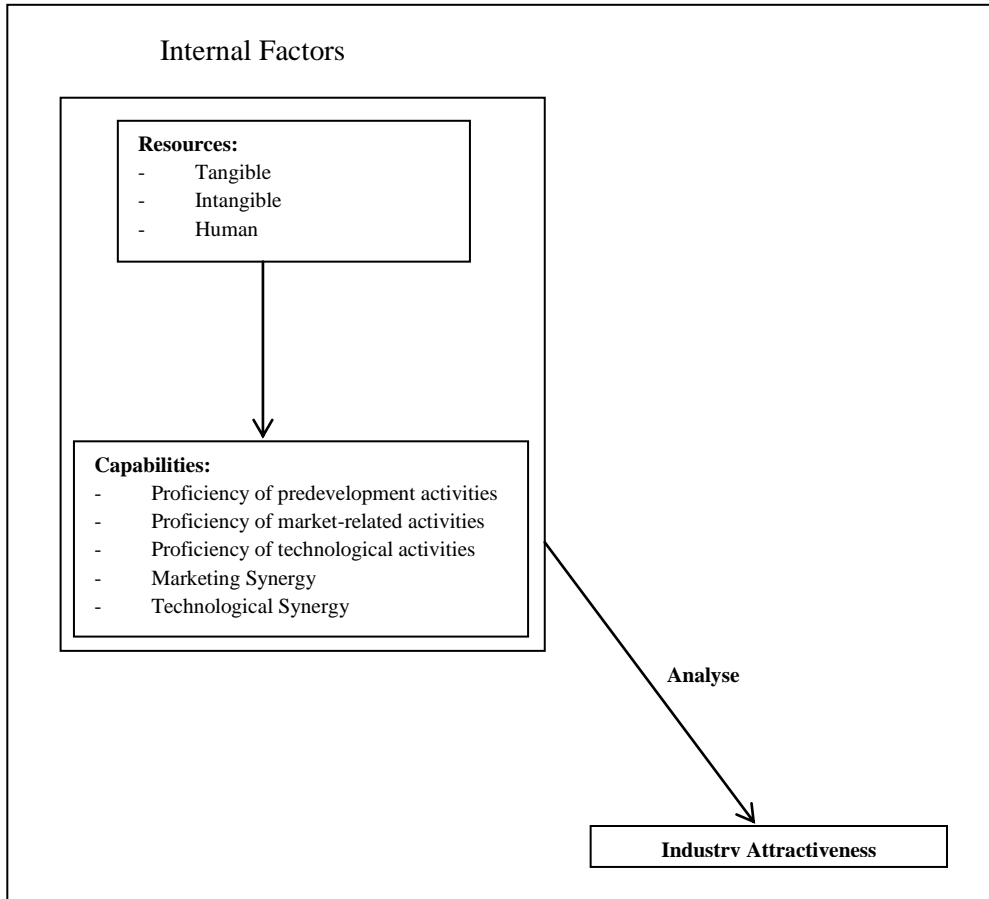
These capabilities can be summarized in Table 8: Capabilities and can for example be to what degree the team is proficient in market-related activities. The factors are also very much based on the resources of the firm as for example proficiency is dependent on technical proficiency of the employees within the firm.

Table 8: Capabilities

<p>Capabilities:</p> <ul style="list-style-type: none">Proficiency of predevelopment activitiesProficiency of market-related activitiesProficiency of technological activitiesMarketing SynergyTechnological Synergy

From this discussion above one can draw the conclusions about what is important for the firm to analyse in order for a company to succeed within the industry. The internal factors of our model (Figure 5: Resources and capabilities analysis model) consist of two part, the resources stated above and the capabilities discussed. These are the internal factors that are determining if the industry within a country is interesting to enter or not.

Figure 5: Resources and capabilities analysis model



2.5 Commercialization Strategies

A company that wants to commercialize a new product usually is not the ones that in the end make the most money out of that product, instead it is other actors such as competitors that profits from the innovation (Teece, 1986; 1988). Teece (1986; 1988) states that there are three different parts that determines the outcome when commercializing a product, namely Regimes of appropriability, Dominant Design phase and Complementary products.

The first factor is regimes of appropriability that consist of the factors, excluding firm and market factors, that determines if the innovator is going to make a profit from the product or not. Basically it is about different sorts of governmental barriers such as intellectual property rights but also about non-governmental barriers as for example company secrets. Another protection is the way the way that the knowledge is codified, if it is tacit knowledge then it is harder to replicate. The problem with protecting a product through intellectual property rights is that a competitor can always “work around” the patent and produce a similar product that they can sell and there for companies sometimes uses company secrets as a way of protecting the innovation. The degree on how codified the knowledge also has an impact on the change of losing the knowledge to other actors, if it has a high degree of “tacitness” then the probability is that a competitor will not steal it (Teece, 1986; 1988). For companies it is important to know that they cannot protect its product only based on intellectual property rights but a good protection is dependent on other protection mechanisms, for example tacit knowledge.

For an innovation there are two types of dominant design phases, the first being product design and the second being processes design (Teece, 1986: 1988). Product design is the phase where there are a lot of different designs for an innovation and there are no standards towards how a product should look like. But after a while there is going to be on design, or standard, that is going to be the norm and all companies will produce their product in accordance with that norm but with some incremental changes. When the dominant design is set companies tends to focus on the producing processes and making them better and more efficient (Teece, 1986; 1988). This has much in common in what Lilien and Yoon (1990) are stating about timing and when to commercialize a product. Lilien and Yoon (1990) mean that there are a lot of risks in an early commercialization process, such as losing the design battle of how the product should be designed. They mean that the timing of the introduction is an important block to take into consideration and focus on so that a company does not enter the race to early or too late. In the end, the choice of timing when to enter the market is decided by the managers and they has to be aware that there are two phases that determines the possibility of competing appropriate with the product, the design phase and the process phase. For managers at a company it is crucial to choose the right time to enter the market depending on what the company is good at, designing the product right or producing the product.

A company is usually dependent on different complimentary assets when commercializing their product (Teece, 1986; 1988). These assets are sometimes hard to acquire and the company might in some cases be dependent on other actors. The complimentary assets can be divided in too two groups namely general assets and specific assets; this has an impact on how the commercialization strategy will be designed (Teece, 1986; 1988). General assets are

those assets that easily can be acquired and thus do not need a partner or dependent on other actors. Specific assets are the assets that are hard to acquire for oneself and could be for example land, resources such as oil, or the ownership of pipes within a building and in order for a company to use these they might be dependent on other actors. Because if it is an asset that is easy to acquire, or a general, then the company can just buy the asset, but if it is a specific asset then the company might be forced to share its profit with another actor. From this one can draw the conclusion that the commercialization phase will be dependent on the amount of resources a company possesses over. If a company has a lot of resources it can acquire more resources by themselves, but if it is a small company with a limited amount of resources it will be harder to acquire some of the complimentary assets needed to be successful.

Teece (1986; 1988) basically means that in order for a company to make a profit from its invention it needs to take into consideration the three concepts mention above. It is important for the managers to be aware of both the environment of the company and the resources the company has at its disposal, but also how to manage these resources properly. This has much resemblance with Cooper and Kleinschmidt (1987) and there focus on how a product is dependent on both the internal and external factors. But also on how managers can best handle both the resources within the firm and the external environment in order for a company to commercialize there product successfully.

As argued above there are different factors that influence the success of the commercialisation process. Teece (1986; 1988) argues that there are three main concepts that a company needs to be aware of and Cooper and Kleinschmidt (1987) mean that managers within a company needs to handle both internal and external factors. Furthermore, there is also the question of timing and at what time it is best to commercialize the product as Lilien and Youn (1990) argues. One can easily tell that to commercialize a product there is a lot to think about and the line between success and failure is thin. Teece (2010) and Chesbrough and Rosenbloom (2002) presents a way for companies that want to commercialize an innovation and to make a profit from it and that is to make their entire business model hard to copy and not just protect the innovation through different sorts of protection. This because the protections do not usually work, for example is there always a way to “work around” a patent and copy the product. But a business model is much harder to copy and the chance of actually gaining some profits from the invention is increasing. A business model is much related to the strategy and they complement each other and are both useful when commercializing an innovation. The difference is that a strategy is like a “map” of the commercialization process and the business model is how to actually make money. There are three factors that determines if a business model is hard, the first being tangible assets that can be purchased by others (Teece, 2010; Chesbrough and Rosenbloom, 2002). The second factor is the intangible assets, such as the right personnel, these are really hard to come by and are important to make it hard to copy a business model (Teece, 2010; Chesbrough and Rosenbloom, 2002). The third factor is more related to the competitors and their willingness to copy the business model and risking destroying already existing business models (Teece, 2010; Chesbrough and Rosenbloom, 2002).

We have up to now showed that a commercialization process is a very complex process that needs a lot of skills by the managers to “keep the boat at course” and not lose focus. Another subject that needs to be addressed is the strategy a company chooses to commercialize the product at the market. This has much to do with how big the company is and what type of business model they are using. As explained above, a business model is the way a company makes a profit and the strategy is the map. According to Gans and Stern (2002) there are two sorts of commercialization strategies namely “Profiting from Innovation through the Product Market” and “Profiting from Innovation through the Market for Ideas”. The differences are that when commercializing the innovation via the market for ideas you are collaborating with another company and when commercializing the innovation through the Product Market you are commercializing the product by yourself. There are drawbacks and possibilities with both strategies (See Table 9: Pros and cons of the two different commercialisation strategies).

Table 9: Pros and cons of the two different commercialisation strategies

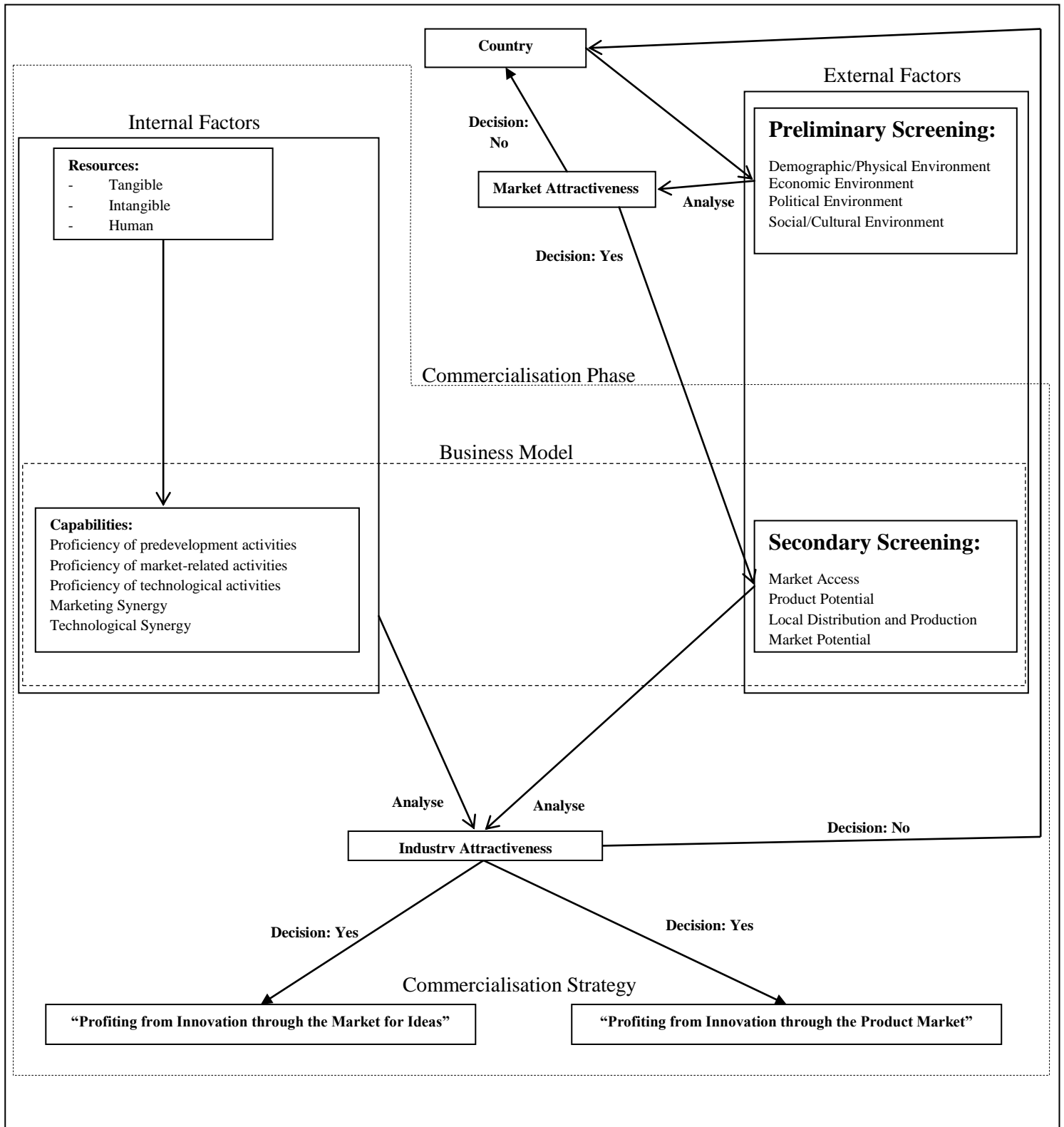
“Profiting from Innovation through the Market for Ideas”	“Profiting from Innovation through the Product Market”
<p>Pros:</p> <ul style="list-style-type: none"> • Avoid double investments • Softens competition • No risk of sunk costs in complimentary assets <p>Cons:</p> <ul style="list-style-type: none"> • Substantially high risk that a bigger company steals the idea 	

This has now giving us a comprehensive set of tools for the commercialization process that we can apply on our model. As we have stated above the process of commercialising a product is about how to handle the internal and external environment that the company is working in. The company managers needs to be aware of the resources within the firm to create a business model that has capabilities that are hard to copy and are able to compete within the industry in a successful way. But the managers also need to be aware of the external factors such as regimes of appropriability so that they know if there are good protections for patents or copyrights. The model we are presenting is based on the external factors and internal we have discussed above.

The commercialisation phase in our model (Figure 6: Commercialisation model) is all the different concepts that have been discussed in this section. It consists of both the external and internal factors that have an impact on the success of the commercialisation. We have excluded the preliminary screening process from the commercialisation phase because commercialisation is about the micro factors within the industry, and not about the macro factors. The business model is the box surrounding the capabilities of a firm and the secondary screening process. The commercialisation process is as stated above the internal

and external factors, but excluded the preliminary screening process. We have also included the commercialisation strategies within the process of commercialising a product.

Figure 6: Commercialisation model



2.6 Entry Strategies

The research about entry strategies has been extensive through the years, one example being Johanson and Vahlne (1977) that has analyzed how Swedish firms have conducted their internationalization process during 1970s. They found that the Swedish firms started with finding a partner in the targeted country and from that they build up the presence in the country. Furthermore they are stating that an internationalization process is not an active decision by the management team but is instead just a response to a changing environment and the organizations deeper knowledge about foreign markets. Based on their findings they have built up a framework with two general aspects that determines the success of an entry to a foreign market, this framework is referred to as being “The Uppsala Model”. The two aspects are the State Aspect and the Change Aspect, the difference being that the first focuses on today and the second focuses on chances for tomorrow. State Aspects consist of factors such as Market Commitment and Market Knowledge.

- Market Commitment is about how much resources the company is spending in a particular country and how much of that can be transferred to another area.
- Market Knowledge refers to knowledge about opportunities and about different options, but it also refers to general knowledge about the country such as market size and more general knowledge about a country.

Change Aspects consists of Current Business Activities and Commitment Decisions.

- Current Business refers to the company’s business today and how decisions about internationalization will affect the business tomorrow.
- Commitment Decisions reflects how committed the management is about the internationalization process and how much resources they are willing to commit to the project.

According to Dunning (1980) there are three reasons why a company enters a foreign country. The first is about resources and how much resource does a company own that a competitor does not. The second being if the company is interested in selling these assets to other actors or introduce them to new markets themselves and the third is how big the foreign market is compared to the home market. Furthermore, Dunning (1980) states there are two types of inputs a company needs in order to create value. The first type of input is equal for every company but different for each region, such as laws and labor power, the second input is what the company can create for themselves namely brand name and reputation. It is the second input that is the reason to enter a foreign market because then a company can spread their risk to different areas and therefore also reducing their risk. Another benefit by going abroad is that a company can transfer their core knowledge to other areas of the globe and have an effect on the business tomorrow, this approach being referred to as the ownership advantage, . Smaller companies may gain a competitive advantage by going abroad because then they can spread their risk and thereby reducing it. This being similar to Market commitment and how much resources a company can spend in another market, but takes it a bit further by adding the possibility of reducing the risk.

Sarkar and Cavusgil (1996) present a model that is explaining how research in entry mode strategies are connected, this because the research done is in different fields. The model Sarkar and Cavusgil (1996) present is built around themes consisting of the research fields, these themes are called Product Market Factors, Firm-Foreign Venture Specific Factors, Host Market Factors, Cultural Factors and The Strategy Variables. This is much the same as the commercialization process we have described in the previous section in this chapter.

According to Madhok (1997) is an internationalization process a path dependent activity that is dependent on previous experience of entering foreign markets. There is also one big difference between the theory of transaction cost and organizational capabilities according to Madhok (1997). The difference is that organizational capabilities are also concerned with the internal capabilities within the firm and how will these be developed if a company chooses to go abroad, transaction cost theory is only concerned with how much money a company can make through internationalization, i.e. the perspective of organizational capabilities takes the firm as a starting point when analyzing an internationalization process.

The eclectic theory has been criticized by Buckley and Casson (1998) that explains that the theory is too broad and is not useful as a model because it is too broad and thus not explain that thoroughly how to enter a new market. Instead they are presenting a model where they have linked all the different fields in the literature about entry strategies together to create a comprehensive model that covers all aspects. The model they are presenting takes different views, one being on the company that enters called the entrant, the second view is on the competitors in the foreign country called the host country rival and the third view is on joint ventures between the two first. They explain how each perspective is affected by different inputs such as cultural factors.

The research focus about entry strategies has much been about the external factors that a company needs to take into consideration. Madhok (1997) focus both on internal and external factors but Ekeledo and Sivakumar (2003) takes this a step further and presents a model that that focuses on four parts. These four parts are firm specific resources, strategic issues, nature of product and level of control. Ekeledo and Sivakumar (2003) argues that a resource based perspective takes an approach of the firm, and it is these resources that create a competitive advantage that the company can use when entering a foreign market.

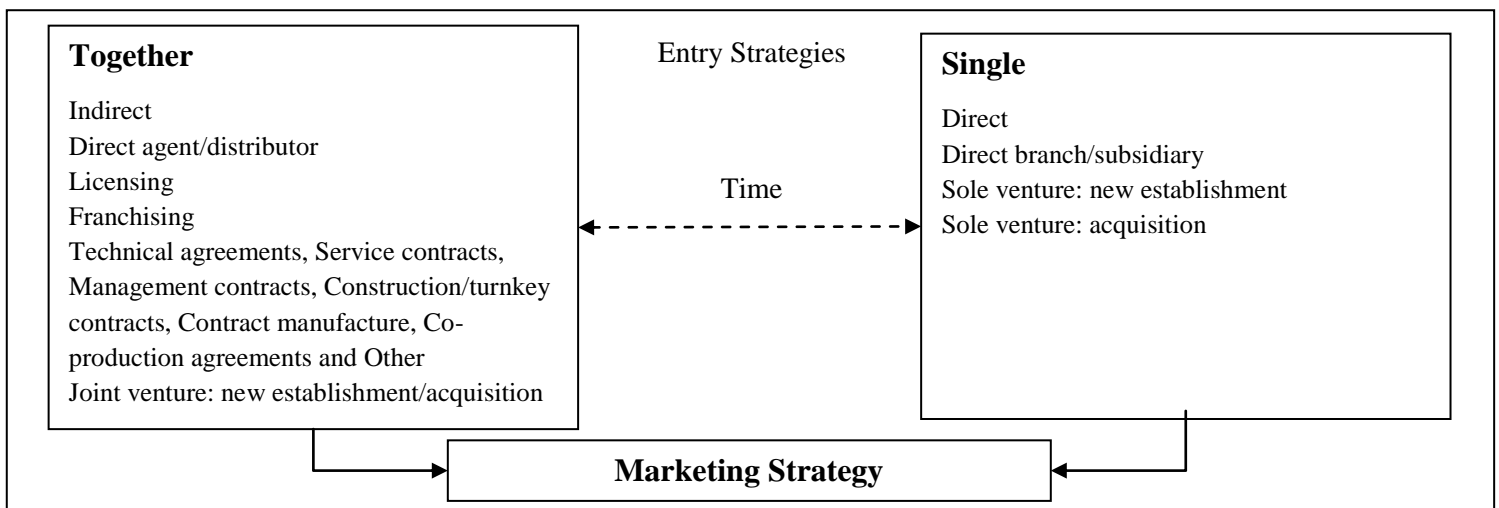
Entry strategy research is very extensive and covers a lot of fields that are similar to the commercialization process. The problem with the research made in our opinion is that the research is still kind of abstract and there are not that many concrete suggestions on how to actually enter a market. All the models share concepts with commercialization research that has already been covered in this chapter. But one person presents a comprehensive model on how to enter a new market namely Root (1998). He states that there are three ways of entering a new market, namely by Export Entry Modes, Contractual Entry Modes and Investment Entry Modes (See Table 10: Entry mode strategies)

Table 10: Entry mode strategies (Root, 1998)

Export Entry Modes	Contractual Entry Modes	Investment Entry Modes
<p>Indirect</p> <p>Uses middlemen from home country</p> <p>Direct</p> <p>Do not use home country middlemen, but might use target country middlemen</p> <p>Direct agent/distributor</p> <p>Uses target country middlemen</p> <p>Direct branch/subsidiary</p> <p>Uses own resources within the target country</p>	<p>Licensing</p> <p>Transfer product to another company during a defined period of time</p> <p>Franchising</p> <p>A stronger partnership than Licensing</p> <p>Technical agreements, Service contracts, Management contracts, Construction/turnkey contracts, Contract manufacture, Co-production agreements and Other</p> <p>Transfer services in return for money</p>	<p>Sole venture: new establishment</p> <p>Start a new subsidiary</p> <p>Sole venture: acquisition</p> <p>By an existing company</p> <p>Joint venture: new establishment/acquisition</p> <p>Start/by a venture together with another company</p>

These factors can be divided in two to main categories, enter either solely or with another company/partner. These modes are not static and can depend on the country picked to enter. The last factor that Root (1998) state is important in an entry strategy is to decide the marketing strategy needed to enter. Our entry model will be a reflection of the three modes above but bundled together into two groups namely ‘Single’ or ‘Together’ (See Figure 7: Entry Mode). The arrow in the middle labeled ‘Time’ refers to the fact that the entry mode choose is not static and can be changed after time.

Figure 7: Entry Mode

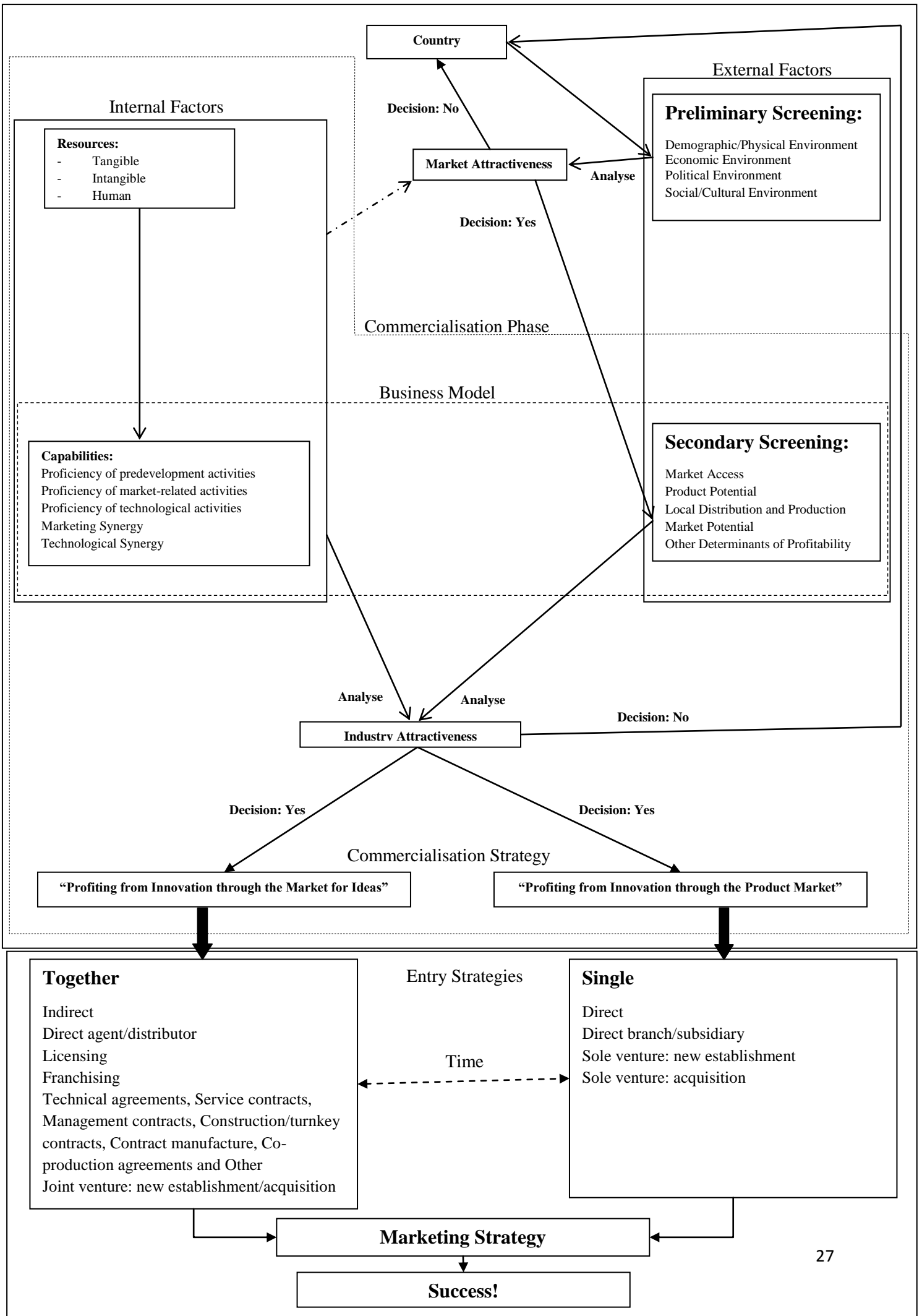


2.7 Connecting the Dots

Our model consists of parts from the five previous sections. The first two parts are the ones about internal and external resources. In the model we have added an arrow between the internal factors and the box “Market Attractiveness”, this arrow is dotted because the internal factors do not have the same impact on the acceptance of the market attractiveness as the external factors have. But they have smaller impacts such as the language barriers or the cultural factors. We mean that one of the really important factors that needs to be taken into consideration and was acknowledged by both Cavusgil (1985) and Rahman (2003) in their models was the cultural factor. The cultural standards are considered to be very important in the sense that they could make or break a market entry for a company. If for example a company assumes that its own culture and ideal standards for appropriate communication are universally understood and don't take the time to understand that of the other party involved in the business transaction, this could end up being disastrous for both sides (Ferraro, 2009). Furthermore, within the cultural factor, many different sub factors need to be considered such as Language, Cross - Cultural Negotiations, Cultural Values, Non-verbal Dimension (Ferraro, 2009). The factors are all dependent on how aware the company is about the differences within the country. We have also connected the commercialization strategies with the two entry strategies companies have at their disposal. And as mentioned above, these entry strategies are not constant and can be changed over time.

If a company chooses to follow this model it will not automatically lead to success, but it might give Piper a chance to enter a foreign market and compete in a successful way.

Figure 8: The Model



3 Methodology

In this part of the paper the reader will be introduced on how we conducted study. We will also give the reader insights in how we conducted the interviews and collected the data.

3.1 Research Strategy

This paper is going to use an exploratory research strategy that focus on a part that we and Piper knows little about. This research method is good when setting up a model of how the world works and look like (Adams, et al., 2007). There is also the case of Practice-oriented research vs. Theory-oriented research where practice-oriented research is the sort of research we are conducting. The difference is that theory-oriented research is a case where the aim of the study is to contribute to already existing knowledge with new knowledge and create theories that are practical in general. Practice-oriented research aim is to contribute to participants with already existing knowledge and thus, it cannot be used in general cases (Dul and Hak, 2008). Hence, because our aim is not to contribute to already existing knowledge but instead contribute with new knowledge to the employees at Piper we are conducting a practice-oriented research study. Furthermore, the research strategy we are using for this Master thesis paper is going to be in the form of a combination between a qualitative study and a quantitative study. We do this because quantitative studies are conducted with statistical methods and do not correlate with the perception of how individuals perceive the world (Adams et al, 2007). But because it is a case study we are going to need both qualitative data and quantitative data, as Adams et al (2007) states “Case studies can include both qualitative and quantitative research” (Adams et al, 2007, page 112). When we conduct our research we are going to use an inductive approach and not a deductive. We are doing this because with an inductive approach “research relies on the empirical verifications of a general conclusion derivable from a finite number of observations. That is, if an event repeats itself enough times then it can be concluded that the event will continue to occur” (Adams et al, 2007, page 29). And because we are conducting a case study for one company and our aim is not to, as stated before, to come up with a new theory, we are using an inductive approach.

3.2 Literature Review

There are some important factors that need to be taken into consideration before describing in detail how the literature review was conducted. According to Adams et al (2007) a literature review should answer the questions of:

- Has the work already been done?
- Who are the experts in the field?
- What are the main theoretical perspectives?
- What are the common research methods in this field?
- What are the main problems in researching the topic?
- Are there any major controversies in this topic area?
- Is the topic open to hypothesis testing?
- Is the topic a trivial one?

Regarding question one the answer is 'yes', this work has already been done, but not in this context. There are several experts and the ones we have used most frequent are Root, Sarkar, Cavusgil and Teece to name a few. The main theoretical frameworks that were used are connected to entry strategies, commercialization strategies and market analysis. The most used research methods within this field is qualitative studies. The fifth question is to some extent interesting for us to think about but because it is a case study we are conducting the problems that might arise will be specific for our study. There is one major controversy in our research study and that is the current situation in Egypt, but because that is an international political problem as well we do not consider that being an obstacle for our thesis. Our topic is not open for hypothesis testing and therefore the sixth question is not of interest for us. The topic is not a trivial one because we are investigating how a company can enter a pipe market in a country that has a population of 81.2 million people (The World Bank Group, 2012).

There are three general types of literature review that can be conducted; namely an evaluation review, an exploratory review and an instrumental review (Adams et al, 2007). The one that we are going to use is in the form of an exploratory review where we try to find out what theories exist. According to Adams et al (2007) an exploratory study has one key component and that is to stay focused and not drift away just because a study is interesting. This could be a problem for us, because our approach to the literature review has been where relaxed and we have had great help from our supervisor on finding good and qualitative studies. But this have not had any impact on our theoretical framework because we are only answering one specific research question and the framework does so very good.

When we searched for the literature we used, we got help from our supervisor but also used databases such as Google Scholar and Business Source Premier. We mainly focused on three areas namely commercialization strategies, entry strategies and market analysis. The keywords that we used when searching for literature within these areas was 'Commercialisation', "Commercialisation Strategies", "Entry Mode Strategies", "", "Market research" and "Market Analysis". We also used free-text words such as 'culture', "profiting from innovation" and "time of commercialization" to narrow the search results down a bit and make the results more specific. We also used previous studies that had done the same research we are conducting but for a different company.

3.3 Research Design

According to Adams et al (2007) "Research Design is the blueprint for fulfilling research objectives and answering research questions. In other words, it is a master plan specifying the methods and procedures for collecting and analysing the needed information" (Adams et al, 2007, page 82). Choosing the right research design is crucial because the way we are collecting and sampling data will have an impact on the validity and reliability of our research. There are three types of categories for classifying research design namely research designs in terms of the controlling method, research design in terms of time sequence and research design in terms of sampling method (Adams et al, 2007). The data needed is of two sorts: the first is internal data about Pipers resources and capabilities. The second type of data being the external data about the market structures within the Egyptian market, this is also

unusual because there are a lot of different factors related to the Egyptian market. Another factor that we are going to take into consideration is the time limited, because we only have 4 month conducting our study this will have an impact on which type of research study to use and thus make it hard to categorize the research design. However, this will not have an impact on the research study because we are as argued above conducting a case study for a single company and our research should therefore not be considered generalizable.

3.4 Method of Data Collection

Because we are going to collect both primary data and secondary data we are going to different methods for collecting the data needed. When collecting primary data there are several ways of doing this, Adams et al (2007) list; observations, experimentation, surveys, interviews and diary methods. The best way for us to obtain the data was to use interviews as a tool, this we did face to face with our respondents. The interviews were conducted at their offices with semi-structured interview questions because we wanted the respondents to have the possibility to answer the questions freely and not be controlled by the questions. Furthermore, with semi-structured interviews there is a more in depth approach and that gives us the possibility to attract more information from the interviewees (Adams et al, 2007). The length of our interviews was in between 30 - 45 minutes and was dependent on the time people had at their disposal. The big problem for us was the geographical distance to Egypt when conducting our interviews and we had to physically be there in order for us to be able to conduct our face to face meetings.

We choose the semi-structured interview approach because that approach fitted us the best. If we for example had chosen to use explanatory interviews then we would not have as much focus on the research question, and explanatory interviews are usually conducted before the research question is decided (Adams et al, 2007). These kind of interviews are used when trying to get an understanding about the surrounding environment studied and what problems that might exist in that environment. We did not choose to use survey interviews either, because these are more controlled interviews and their aim is not to dig too much into the problem at hand. These types of interviews are also quite short and you do not get an opportunity to really see the respondents feelings because the questions are where straight forward (Adams et al, 2007). Another approach we could have used is longitudinal interviews, this is probably the best way of conducting research on because then you are conducting several interviews for each interview object (Adams et al, 2007). The limitations for us do, is as argued above the time constraints we have for this project and therefore we choose not to engage in longitudinal interviews. We also did not engage in validation interviews, this also because of the time constraints we had for this problem and also because our aim is not to contribute with new knowledge, instead it is to answer one specific question for Piper.

Because we are doing a case study the population of our interview group might be limited to the amount of key people within the pipe industry of Egypt. This might be a limitation for us as normal populations sizes are around 20 - 30 people (Adams et al, 2007). But this is not a problem for us because we interviewed the right amount of people and the population is therefore un-biased. Before we started with our interviews we had thoroughly decided what

type of questions to ask and we had also conducted a pre-interview in order for us to test the questions and see if there were any questions that needed to be changed. According to Adams et al (2007) it is also a good idea to explain for the interview object the purpose of the interview and make shore that the person feels comfortable in the situation. Therefore we started the beginning of each interview with a little “chit chat” so that the person would get comfortable and then we moved on to the questions. During the interview we also let the interviewee do most of the talking, as Adam et al (2007) states “In conducting an interview the subject should do most of the talking - at least 80 percent of the talk should be done by the subject” (Adams et al, 2007, page 147).

The secondary data was collected through the use of different databases such a www.worldbank.com, www.cia.org and www.un.com. One problem for us when collecting the data was that because of the current situation in Egypt, data needed from there governmental agencies was hard to overcome and we needed to use data that might be not as accurate.

3.5 Sampling

The goal of this paper is to answer the research question of what is a suitable commercialization strategy and entry strategy if Piper should choose to enter the Egyptian market. Because of this we needed to both analyze internal and external factors within the industry that Piper is a part of. The best way for us to gather the external material was for us to travel to Egypt and interview actors within the piping industry. We were able to interview eight experts who worked in different positions in several companies that deal with manufacturing, construction, or plastics and have a large amount of knowledge about pipes and the pipe market in Egypt. We would have also liked to interview people that worked in governmental sectors but because of the current political situation in Egypt that was not possible. We also had planned that we would include workers amongst the experts and people to be interviewed, but there is a mass halt at the moment of most construction works going on in Egypt also due to the political situation and so that was not possible either.

The people that were interviewed are:

- Engineer Jamal Shawwa, the President of Shawwa Plastics
- Engineer Moawad Ragab, the Project Procurement Manager for Arabtec Egypt for Construction S.A.E
- Engineer Mohsen Akram, the Director of Sales of United Plastics and Irrigation Components
- Engineer Aiman Al Sakka, the Vice-Chairman of TARSHEED for Engineering, Business, and Management Consulting
- Engineer Samy Al-Gamal, the Area Manager of Universal Contracting
- Ashraf El-Alfy, the Financial Controller for Arabtec Egypt for Construction S.A.E
- Dr. Engineer Khaled Elfarra, the General Manager of TARSHEED for Engineering, Business, and Management Consulting
- Engineer Mohamed Mostafa, the founder and General Manager of MASTER for International Trade and Construction

To gather internal data we interviewed two persons at the company, the sales manager and project manager. The first person we interviewed has the position of sales manager and the second person has the position of project manager. We only conducted two interviews because it is a small company that is, as stated before, still in its start-up face. We will from now call the sales manager for Mr Sale and project manager will be called Mr Project.

3.6 Designing the Interview Guide

We used open questions when interviewing the respondents. The biggest reason we choose to use open questions was because we did not want to have any biased answers from the respondents as can be the case with closed questions (Bryman & Bell, 2007). Another reason is that we are going to focus on the qualitative data we are collecting and we therefore need as detailed and rich answers as possible. Furthermore, we wanted to have an open discussion with the respondents about the industry and the product and wanted to capture factors that we might have missed. The drawback when using open ended questions are they always present time constraints the respondents has. But in order for us to limit this we interviewed several persons, so the risk that we did not have time to get answers on all questions is non-existing. The interviews can be found in appendix 2 and 3.

The bases for the questions were the theoretical framework we have built. Based on the framework we could construct an interview guide that follows the same structure as the model. The questions answered information about patents, cost of alternative ways of repairing pipes within the Egyptian market and possible competitors. The interview guides can be found in appendix 1.

3.7 Data Analysis

When analysing qualitative data there are, according to Bryman and Bell (2007), not that many ways the data can be analysed and the three most common are grounded theory, narrative analyses and analytic induction. We used grounded theory as a tool of analysing the data we have systematically collected and analysed. Grounded theory is theory that is based on data analysed. Our process, when analysing the data has been an iterative process meaning that we have collected and analysed data simultaneously. Grounded theories consist of some crucial tools namely coding, theoretical sampling, theoretical saturation and constant comparison (Bryman and Bell, 2007). We have through the process used these tools. For example, the interview guide we have made is coded based on the theoretical framework and the answers we have received has been sorted under the right category. When analysing the data we used the theoretical model that we made. First we analysed the data collected for the Primary Screening Stage of the external factors. And then we analysed the Internal Factors data along with the data collected for the Secondary Screening Stage as the model describes.

3.8 Credibility of the Research

Normally the reliability and validity concepts are mainly used in quantitative research rather than qualitative. However, in some cases they can be used with qualitative research.

3.8.1 Reliability

When it comes to reliability, there are two different types as stated by Bryman and Bell 2007: external reliability, and internal reliability.

External reliability: Is about the possibility of being able to copy the exact outcome of a study in another situation. In our specific case, our findings do not have a high degree of external reliability. But that is not an issue of crucial importance for us since our paper strictly focuses on a single firm and its possibilities of entering a new market at this moment in time.

Internal reliability: Is about whether or not the researching team has perceived the data collected the same way. In our case there is a very high degree of internal reliability since both researchers fully agreed with each other during the entire research project.

3.8.2 Validity

Validity is also divided into internal and external validity according to Bryman and Bell 2007.

External validity: Mainly addresses the point of whether or not the outcomes and findings can be generalized across social situations. In our case the degree of external validity is low since the people interviewed, questions asked, and model used are quite specific to the firm and paper.

Internal validity: This addresses the connections made between the theoretical framework and the researchers interpretations of the information gathered. In our case we believe our internal validity to be high. This is because a large amount of useful information was gathered based on a model that was created from other highly valid models that have proven to be quite successful over time.

4. Empirical Data

In this section we will provide the reader with the most important data findings that we collected. These findings are based on the theoretical model that is presented in Chapter 2 and consist of both the internal factors and external factors.

The internal data that has been collected are based on the general groups of ‘Resources’ and ‘Capabilities’. These two groups were broken down to the factors ‘Tangible’, ‘Intangible’ and ‘Human’ and the five capabilities that were presented in our model. External data that was collected are based on “Preliminary Screening” and “Secondary Screening” and the factors related to these two groups. We will first present the internal data in this chapter and then the external findings.

4.1 Internal Data

4.1.1 Resources

Tangible

When it comes to tangible assets, Piper does not own a significant amount of these. In regards to cash available it does not have that much cash but are thinking about taking in more money so that they can expand. Or as Mr Sales states when asked about how much cash they have available

“At the moment, not that much cash. We are looking to take in more owners to get more capital so that we can expand (invest)”.

Furthermore, Piper does not have any debt that they need to take into consideration and because of their business model Mr Sales does not think they need to take up any loan from a financial institution. Mr Sales means that they do not need that much money when entering a new market because they receive license fees that makes it possible for them to enter and give the support needed. Piper’s access to different securities are not different from other companies but they do have different sorts of insurances.

In regards for the physical assets the company does not own the equipment that is being used for the product; instead they rent and outsource the equipment. As Mr Sales states

“The company rents and outsources most things; only a few machines that are used for educating the other companies about our products are owned. We don’t need those much physical assets, which is good for us”.

The building that the employees of Piper are working at is not owned by Piper themselves instead they are renting offices.

Intangible

The technology within Piper is guarded by a combination of patents, copyrights and trade secrets. The patents are according to Mr Sales

“We have different patent applications: The one approved is for the Swedish market, then the international one is expected to be approved this year or the beginning of next year”.

Furthermore, the trade secrets within Piper are according to Mr Sales the true value of what they are selling. It is knowledge that has been gathered by mentors during the past 30 years of working within the industry. Pipes customers are buying that knowledge as a security that they can really on.

Piper has trademarked both their existing name and the name for their product but because it is their product they are known for and they are considering a name change. They also have strong ties with other actors such as companies that help with technical development and suppliers. Furthermore, they also have strong ties with customers both within Sweden and abroad. Mr Project says that

“The ties are long term and strong”.

It is too early to say if the reputation of the brand is strong enough but the people that are working with the product are familiar with the brand. Their customers do not have any problems when using the product as well. Regarding the loyalty of the customers, they are bound to their agreements so they do not have any choice. But according to Mr Project some are more loyal than others.

The culture within Piper is because of the size of an entrepreneurial sort that makes it easy to make fast decisions or as Mr Sales states

“It is a small company that is driven by entrepreneurs. Decisions are made very quickly if needed because of the small environment”.

Mr Project means when asked about their culture that it can sometimes be times when they have to make fast decisions and does not have time to think about an answer that much.

Human

For Piper the most important aspect when hiring a person is that the person possesses certain skills that would help Piper in their progress of expanding. It does not matter whether or not they have any sort of higher education if they have a special skill. Furthermore, the company always looks at the certain skill when hiring somebody and it does not matter that much if the person has any technological skills. Mr Sales means that

“It depends on what they will work with. If they are responsible for the technical areas, then yes of course they have to and they must also have some kind of idea about this industry as well”.

But when working with hard plastics it is required for people to have a certificate that shows they have the right education and experience with the material. When discussing the professionally of the employees Mr Sales means that they are trying to be as structured as possible and supply their customers with the best possible service and get things done at time. But Mr Sales admits that they are not 100 % there yet and this is one area he thinks is crucial to improve in order to attract the larger customers.

The motivation is within the company high and they have an open dialog with each other but they do not have any special program in order to motivate the people within the company. Mr Sales states that

“We talk to each other, everyone talks to everyone. We are a small group and have the same goal. We don’t have a special program but we might have something like that in the future when we grow”.

The employees within Piper has not worked there for a long time, the first employee started for one year ago and the two other started working there for six month ago.

4.1.2 Capabilities

Piper does to some extent do pre-development activities by themselves but they also get help from other actors. Mr Sales states that

“It depends on what country. With some we do it ourselves, and with others we get help and outsource”.

In regards to marketing Piper have special marketing channels because of the business model. Mr. Sales means that their marketing is based on social meetings with licensing holders. It is the licensing holder’s job to sell the product to the customers. They have some old marketing material that they are working with when selling the product to new license holders but it is mostly a process of learning by doing. Furthermore, the quality of the product is considered to be of high quality. If the installation is done right then it should not be any problems with the product and it should be regarded as a new pipe.

Piper’s technology is always under development and they constantly compare new methods with old ones to find the best solutions. Mr. Project means that

“We always try to improve the product and if something goes wrong it is going to cost a lot of money. I always test new ways of improving the product”.

But this process cost a lot of money and they need capital to make this process even better.

4.2 External data

4.2.1 Demographic/Physical Environment

Population size, growth, density

Egypt has a population of 82,999,393 (as of April 2011). The Egyptian population has more than doubled from the early 70s up till today growing from 37 million to 83 million (OECD /World Bank Statistics).

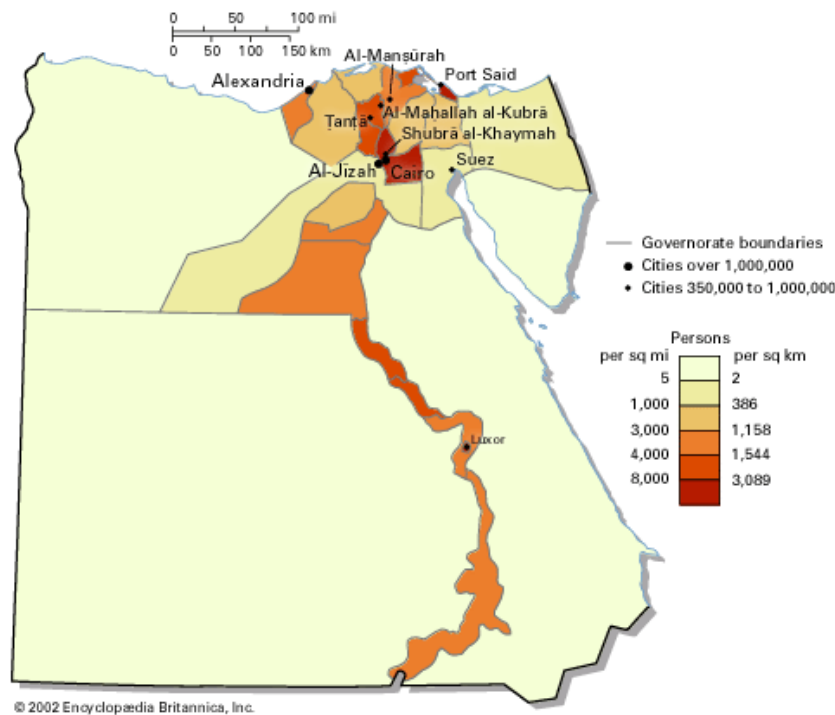


Image 1: Egypt Density Map

The highest density of Egyptians is located of course within the capital Cairo, with over 3000 people per square kilometer. According to Forbes and Santa Maria Tours, Cairo is the largest city in the Middle East and Africa and the 16th largest metropolitan area in the world. It is believed that greater Cairo has a population of 20 million people by day, and 17 million people by night (due to the large amount of employees that come into Cairo from surrounding governorates for work daily). Other areas that have relatively high density as well include some of the governorates surrounding Cairo, Port Said and Alexandria in the northern parts of Egypt, and along the banks of the Nile River going all the way to the southern parts of Egypt as seen in the image above (Image 1: Egypt Density Map).

Urban and rural distribution

According to a World Bank report in 2011, the percentage of rural population in Egypt was last reported at 57.20 % in 2010. This is a decrease from 57.24 in 2009, and 57.28 in 2008. This means that the urban population of Egypt should be around 42.8%. These numbers show that there are more people every year moving from rural areas to urban areas.

Climate and weather variations

In Egypt, the days are usually warm or hot, and the nights are fairly cool. Egypt is known to have only two seasons a year: a mild winter from November to April and a hot summer from May to October. The coastal regions experience more rainfall throughout the year, especially during winter. Whereas the weather is much more dry inland. (Tour Egypt, 1996 - 2011)

Shipping distance

- 3399 Kilometers if shipping is by air
- 1834.1 Nautical Miles if shipping is by sea

Product-significant demographics and Natural resources

Egypt has one of the most developed and diversified economies in the Middle East. When it comes to the significant products for Piper that is produced in Egypt, there are many companies that manufacture pipes of all kinds and sizes along with their fittings. These include: PVC, UPVC, CPVC, Polypropylene, High Density Polyethylene pipes, Cast Iron pipes, and Clay pipes”.

Natural resources: Petroleum and natural gas, iron ore, phosphates, manganese, limestone, gypsum, talc, asbestos, lead, zinc. (<http://www.state.gov/r/pa/ei/bgn/5309.htm>)

Industry: Types--food processing, textiles, tourism, chemicals, petrochemicals, construction, light manufacturing, iron and steel products, aluminium, cement, military equipment.

(U.S. Department of State, 2012)

4.2.2 Political Environment

On January 25th 2011, Egypt witnessed a popular uprising which also swept many countries in the region, and is commonly known as the “Arab Spring”. Because of this uprising, the former regime was toppled and Egypt now is in a transitional phase. An interim government was put in place, and is expected to stay in power until a democratically elected parliament and president are chosen. So far the parliamentary elections have taken place, and the presidential elections are due to take place in less than a month (end of May 2012).

Many news sources interviewing political analysts have reported that political stability is expected to be restored once the presidential elections take place. It is also expected that Egypt will keep moving towards a free economy after the elections.

4.2.3 Economic Environment

Economic Growth

The GNP of Egypt has gone up from 250 billion US dollars in the year 2000, to approximately 500 billion US dollars in 2010 (The World Bank Group, 2012)

Currency

With the ongoing political instability in Egypt right now as a result of the “Arab Spring”, it is expected that the Egyptian currency will fall greatly in value in the medium run. Egypt’s reserves at the central bank have decreased by \$ 14 billion between December 2010 and December 2011. The estimated value of reserves in December 2011 was at \$22 billion, but according to some analysts that the country will be heading towards unsustainable levels of

reserves due to the ongoing revolution and political instability. The Central Bank of Egypt uses its reserves as a means of stabilizing the economy, but a rapid depletion of these reserves will only mean bad news for the Egyptian currency. High level of inflation is forecasted for the country with already high levels of unemployment if things remain as is. Bloomberg also reported that it is possible that the Egyptian currency could depreciate by an estimated 20 to 25 percent. (Easy-forex team, 2011)

However some analysts believe that once elections are carried out and a new civil government is put into place (which is expected to be by June 2012), market confidence will be restored within the Arab nation and this would mean the prevention of any more outflows from accelerating the Egyptian Pound's decline. (The Wall Street Journal, 2011)

Role of Foreign Trade and Relations

The political relationship that currently exists between Egypt and Sweden is quite good. Sweden plays its role as a pioneering country in giving development aid to countries that are considered to be developing (such as Egypt). Sweden is also quite a big supporter of the cooperation of European Union (EU) countries and the Mediterranean countries. There have been several visits between the foreign ministers of both countries in the past to discuss bilateral relations and situation developments on the international and regional scales. (Egypt State Information Service, 2010)

The economic and commercial relations between the two countries are quite unique and have been constantly developing over the past few decades. An Egyptian-Swedish committee was established in 1975 for the cooperation of both countries on the economic, commercial and technical levels. The meetings of this committee take place alternately in both countries. There is also a joint council that consists of Egyptian and Swedish businessmen.

Sweden provides resources through "The Swedish Fund for Industrial Cooperation with Developing Countries" in order to help further develop industrial activities in developing countries. This fund is a stake holder in three Egyptian-Swedish companies with around 28 million Kronor.

Sweden is also known to have invested in nine different projects within Egypt with an amount of about 31 million Kronor.

"In 2009, Engineer Rashid Mohamed Rashid, then Minister of Trade and Industry and Swedish Minister of Trade, Dr. Ewa Björling, exchanged visits and agreed on starting cooperation between Swedish financial institutions and Exports Development Bank to offer credit facilitations promoting cooperation and trade among companies in both countries. This is in addition to benefiting from the Swedish experience in the field of building cities specialized in modern industries, environment-friendly technology, renewable energy and recycling. This is beside developing exports, modernizing industry and upgrading domestic trade system." (Egypt State Information Service, 2010)

The Swedish ambassador to Egypt stated that the commercial relations between the two countries are quite strong in several different fields. She believes that Swedish companies will resume their large amounts of investments within the country, and gave example of Swedish companies that already operated on a very large scale: Swiss-Swedish group ABB, IKEA, Ericsson (present in the Egyptian market since 1979), and Tetra Pak. The volume of trade that

takes place between both countries amounts up to around €700 million a year. (Egypt Independent, 2011)

Trade Facts:

- Egypt and Sweden have signed the following bilateral agreements: Agreement on the Promotion and Protection of Investments (2004); Agreement on Economic, Technical and Industrial Cooperation (1975); and Agreement on Avoidance of Double Taxation (1994).
- Bilateral trade between Egypt and Sweden reached EUR 612.1 million in 2008 with Egyptian exports to Sweden reaching EUR 24.1 million and Egyptian imports from Sweden reaching EUR 588 million. It is worth noting that Egyptian exports to Sweden surged in 2007 to reach EUR 20.3 million from 12.6 million in 2006.
- Egypt's main exports to Sweden include: carpets and other textiles, knitted or crocheted items; nuclear reactors, boilers and parts thereof; edible fruits and nuts; electrical machinery and parts thereof; other made-up textile articles; articles of apparel and clothing accessories (not knitted or crocheted); inorganic chemicals; edible vegetables; and cotton.
- Egypt's main imports from Sweden include: electrical machinery; wood and articles of wood; ores, slag and ash; nuclear reactors and boilers; wood and articles of wood; paper and paperboard; vehicles other than railway or tramway rolling-stock, and parts and accessories thereof; dairy produce; plastics and articles of plastic; iron and steel; and optical and photographic articles.

Investment Facts:

- Total Swedish investments in Egypt amount to EGP 319.78 million in 78 investment projects.
- These investments are mainly in the pharmaceutical, chemical industries, and beverage manufacturing sectors.
- Main Swedish companies investing in Egypt are water and beverage manufacturer Fontana, chemical industrialist Kmira Chemi, and pharmaceutical manufacturers Heibi Holding AB Pharmaceuticals.

(Egypt - Ministry of Trade and Industry, 2012)

4.2.4 Social/Cultural Environment

Literacy rate, education level

The literacy rate in Egypt according to the United Nations Development Programme Report of 2011, is around 66.4%. (UNESCO Institute for Statistics , 2012)

In Egypt, education is free at all levels: from kindergarten to university, and is obligatory from ages 6 to 15. (UNESCO Institute for Statistics , 2012)

Language and other cultural considerations

The official language of the country is Arabic. The second languages that are taught in most public schools are English and French, although most of the teaching throughout the country is focused more on the more dominant English language. People who get this type of education are able to speak these languages at different levels though, depending on the school they were in and the social background they come from. There are also a few German schools that teach their students the German curriculum and the German language as well. Apart from the previously stated languages, some people also know how to speak Italian, Spanish, and Russian because of the high number of tourists that visit Egypt from these countries on a yearly basis.

Cultural Differences

During some of the interviews carried out, we asked what should be taken into consideration from the social or cultural point of view, apart from the language. And the most interesting replies we got were:

“On a cultural level, adapting to a new technology takes time here in Egypt. If they enter on a small scale then it is no problem, but if they are intending to enter on a large scale at first, it will not be very successful because adapting to a new technology or method here in Egypt requires a lot of time and patience, we are not fast paced in technology switching like the west.

Another cultural note is that here some people have the mentality that something new is better than something that was fixed, even if this innovation could prove to be better in quality than buying a new pipe, but in the end the mentality is that it is fixed, it is not new. Types of thinking like these require time and effort to change. However this type of thinking does not exist within the larger and international companies in Egypt” Eng. Aiman Al Sakka

4.2.5 Market Access

Market Limitations and Barriers for Entry

When the experts interviewed were asked about the limitations, documentations, standards, and possible barriers for entering the Egyptian pipe market, almost all of them had a similar reply:

There are no specific constraints, legal issues or barriers for pipe market entry in Egypt. It is up to the company/person that wants to enter the market. If they want to target a specific segment of the market: that market is what regulates the quality of pipes that are going to be manufactured or used. (All of those interviewed)

Another common point they all agreed on was that in urban areas, the larger projects that are constructed will most definitely have some minimum standards and requirements for the

installation and usage of pipes whereas in smaller projects, there will probably be much lower standards (in comparison to international standards) and it is up to the manufacturing company or owner of the project. Some also added that in some rural areas, there are no pipe standards whatsoever.

“The pipes have to be of certain specifications and properties in order for them to be sold for use in certain projects around Egypt. Anyone can start their own company or sell their product as long as they meet the market requirements. There are usually no big troubles or obstacles in this field” Eng. Samy Al-Gamal

“There aren’t that many limitations or restrictions, but if they are going to be selling products that are going to be used in medium or large construction projects, then their product should be ISO certified. This isn’t a very big problem in Egypt since the pipes that are imported are certified, and the majority of pipes are manufactured locally either under the license and supervision from international pipe producers or in accordance with international standards” Dr. Khaled Elfarra

But usually most manufacturers in Egypt stick to international standards so they can export their products to foreign markets and not only be constrained to selling locally. Some manufacturers manufacture their pipes in Egypt according to other African country standards which are much lower just so they can export to these countries and gain a market share there.

When it came to the point of obtaining a local license for production in the pipe industry (and its complements), almost all of the interviewees agreed that obtaining a license for such an activity in Egypt should be no problem at all and also of relatively insignificant costs.

“Obtaining a license for manufacturing in such an industry is very easy to get and should not be considered a problem at all. Only energy intensive productions such as iron or cement must get special approvals and licenses for production” Eng. Aiman Al Sakka

Patent Laws

When asked about patent laws in Egypt, and whether or not the company should be worried about anyone trying to copy this new solution of theirs, there were some mixed replies.

Some claimed that there are effective patent laws and that there should be no worries at all:

“Of course they are not taken as seriously as in European countries or the United States, but yes, to some extent patents are taken seriously and if someone is caught with copies of a patented product or process their business will most probably be shut down immediately” Eng. Mohsen Akram

Others claimed that patent laws are not taken so seriously in Egypt, but that still the company would have nothing to worry about at all:

“It’s not strict like Europe, but it’s not free like in China. It is taken seriously to some extent. Besides, this market specifically is not that intelligent here in Egypt. No one in this market has the intelligence or financial capabilities to reverse engineer such an invention. So even if it was not taken seriously, they should not be worried at all. There is no investment whatsoever in reverse engineering here as opposed to China and Korea for example. And reverse engineering such a product needs lots of time, money, labs, and equipment, things which are not present in this market/industry in Egypt” Eng. Aiman Al Sakka

A third and very interesting point of view on this question was that:

“Their problem won’t be with patents. If someone tries to copy their product, they can sue them if they choose to. Usually here in Egypt the government won’t exert an effort to stop someone from copying unless there is a serious complaint from the company that has been copied. The problem will be if someone ignorant with no capabilities or resources tries to somehow copy this innovation and sell it, it will of course not work and will cause problems and be removed from the market immediately (assuming the company gives a formal complaint), but at the same time will have some negative impact on the name of this product. This is what they should maybe worry about more than patenting laws” Eng. Jamal Shawwa

4.2.6 Product Potential

Customer needs and desires

The pipe renewal market in Egypt is very large. With a population of over 80 million people that live on only 6-7% of their total land, the pipes used are subject to extremely high amounts of pressure and constantly need renovation. Customers are constantly demanding the renewal of faulty pipes in their buildings and businesses. It must be noted though that almost all pipes that were installed prior to the 90s are cast iron pipes, whereas most of the pipes used in construction from the 90s onwards are plastic pipes (mainly PVC in drainage systems).

Local production, imports, consumption

Most types of pipes are manufactured in Egypt according to international standards. There are many different sizes and kinds of plastic and cast iron pipes. When asked about the types of pipes that were locally manufactured, all the interviewees replied:

“Here in Egypt we manufacture: PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene pipes along with their fittings, and also Cast Iron pipes”

Although most types of pipes are manufactured locally and according to international standards, there are still some pipes that are imported from other countries. The local market however prefers to use the locally manufactured pipes because they do not differ in quality from the imported pipes and are naturally much cheaper to buy due to the lower transportation costs and cheaper labour used in manufacturing.

The level of pipe consumption in Egypt is quite high. The mixture between old pipes that are causing many problems and need to be renewed, to all the new projects, buildings and compounds that are being set up require a very large amount of pipes in order to satisfy the market needs.

There are also some special sub markets within the pipe industry that need catering to when it comes to pipe renewal and installation. Dr. Khaled Elfarra mentioned that factories in Egypt are also high consumers of pipes.

“The market for factory pipes and drainage pipes is also very large in Egypt. This is due to the heavy loads they handle on a daily basis. So the pipes need constant attention and renewal.”
Dr. Khaled Elfarra

Exposure to and acceptance of product

When asked about the possible acceptance of the product within the Egyptian market. Almost all the interviewees replied with the same answer:

“If the product works on cast iron pipes, it will be very easily accepted in the market as it will solve so many existing problems and troubles in a more efficient or easy way. However if it only works on the plastic pipes, it might not be accepted so easily, but perhaps only in specific segments of the market that would be willing to pay more for such a product (since completely renewing the plastic pipes would probably be much cheaper)”

Availability of linking products

Perhaps there are no products that can be considered as complimentary apart from the actual pipes that need to be renewed. But there are some services in Egypt and the Middle East which can be considered as complimentary services. There are companies that have the sole purpose of buying renovation contracts for businesses, factories, and private buildings. They target different segments of the “renovation market”, and accordingly use different methods in renovating these places based on willingness to pay, the needs and wants of customers. They are relatively new in Egypt, and the more they grow and become famous, the possibility of Pipers innovation of being used also grows, and therefore could be considered as a complimentary service.

“One of the ways they could enter the Middle Eastern market in general, especially Gulf countries, is through companies that buy renovating contracts. They do not build anything, but their sole purpose is to fix or renovate anything in already built

places, pipes included. So if they are able to promote their product to these companies, train their employees how to use them, they could be quite a success in the whole region. These types of companies have been present for quite some time in the Gulf countries, and have recently begun to spread all over the rest of the Middle East and North Africa.” Ashraf El-Alfy

Attitude towards products of foreign origin

The general mentality of purchasing products in most markets in Egypt is that: if it is foreign, it is better. However this market (pipe market) is very large in Egypt, with many companies that manufacture several different kinds of pipes and their fittings with a quality that is up to international standards.

Customers that are demanding pipes understand the fact that the locally manufactured pipes are more or less of the same quality as the imported pipes, but are cheaper due to the manufacturing conditions in Egypt. The labour used is much cheaper, and the transportation costs within the country are extremely cheaper than the transportation of goods from outside of the country.

Cost to benefit ratio

While the cost of the product (30 - 90 euros/meter) maybe be a little bit more expensive than some of the available alternatives for pipe renewal in Egypt, there are a lot of benefits that are gained. The first benefit is that the process for installation is simple and not time consuming. And although the method of installation is unlike any other solution available on the market, educational courses on how to use the product are given to purchasers by Piper. Piper’s product also helps reduce the amount of destruction needed to be made for renewal. So for example instead of breaking the ground to remove a whole pipe section to replace it or weld it (in case of iron pipes), the minimum amount of breaking is required when using Piper Force. The final benefit of Piper’s product is the fact that it is a high quality and long lasting product. By installing their product the lifetime of the pipe that needs to be renewed is extended by around 40 years.

Competitive offerings

In Egypt, pipes and drainage systems are in most cases, but not all, external (not buried underground, but rather running through ducts in walls or outside of buildings). These pipes are owned by either the owning company, or union formed by the people living in the building (in the case it is an apartment building). In the case of apartments, each person is responsible for the pipes in his/her own flat, and all the tenants are collectively responsible for the main pipes that are going in and out of the building.

Generally there are two existing alternatives in the Egyptian market that can serve as substitutes to Pipers innovation + 1 extra method that can be used only with iron pipes:

1. When a pipe becomes faulty or cracked, the damaged section is removed and replaced with a new pipe. This applies to both plastic and iron pipes.

2. The second alternative is the bi pass solution which is done externally. The bi pass solution means that when the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal). This applies to both plastic and iron pipes.
3. When a pipe gets cracked, it can be taken out of its place and welded. But this only applies to iron pipes.

Degree of quality

The quality of the product compared to the other alternatives of renewing pipes is quite high and long lasting. The option of bi passing is an easy and cheap solution, but it leaves the pipe completely exposed with high risk of cracks and becoming faulty from exposure to sunlight and physical pressure. Completely renewing the pipe is a good solution, but requires physically breaking up large amounts of ceramics/cement which can be quite inconvenient.

4.2.7 Local Distribution and Production

Availability of intermediaries

Intermediaries are available in the Egyptian pipe market. As mentioned before, there are companies that purchase renovation contracts and can be considered as a good intermediary. The factories that manufacture and sell the pipes could also be considered as intermediaries. If the proper deal is struck with them, they can also purchase and recommend Pipers new innovation as the best way of renovating the pipes that they just sold in case of them becoming faulty. Also normal retailers that sell pipes can be used as intermediaries the same exact way. Construction consultancy firms could also recommend Pipers products for those who seek consultation from them for the renovation of large projects for example.

Regional and local transportation facilities

When asked about the availability of transportation and the costs in Egypt, all the interviewees quickly replied that in is widely available, easy to access, and relatively cheap in comparison to other countries around the world.

“Transportation is something they (Piper) don't even have to think about. It is so easy and so cheap here in Egypt. They will have no obstacles or troubles in this area at all.” Engineer Mohamed Mostafa

Almost all the interviewees agreed that the transportation is quite cheap mainly due to two reasons:

1. The cheap cost of labor. Due to the large amount of labor workers in Egypt and low amount of jobs available, these workers work for a very small amount of money (which is usually paid by task or daily work)
2. The petrol/gasoline used for transportation in Egypt is subsidized, and so the costs of benzene for cars, trucks, etc. is quite cheap:
 - Benzene 80 (0.90 L.E./Ltr.)
 - Benzene 90 (1.75 L.E./Ltr.)
 - Benzene 92 (1.85 L.E./Ltr.)
 - Benzene 95 (2.75 L.E./Ltr.)

(Arab Republic of Egypt - Ministry of Petroleum, 2012)

Availability of manpower

Labour in Egypt is widely available and quite cheap relatively. There are so many (uneducated and educated) workers but little amounts of jobs to fit them all.

*“Egypt is very rich in its availability of cheap labor. We have so many workers, but not enough projects for them to work on.”
Dr. Khaled Elfarra*

Usually the majority of these workers are uneducated, but recently some educated workers that are unable to find jobs have been willing to work at lower working levels in order to have a better chance of being employed, even if just on task or daily basis. These types of jobs (installation of pipes and renewing pipes) do not require any previous training, and the workers usually learn on the job.

“Yes, Egypt is very rich in its availability of cheap labor. Most of them in this field learn their trade through experience not by taking courses or trainings. The ones that are trained or have taken courses are very rare. There are lots of them who are willing to learn how to do new processes and techniques though. It is just a matter of how much the company will be willing to invest in teaching them, and even more importantly on giving them special benefits for keeping them later on so that they don't go off somewhere else and then the company will have to invest in teaching more people.

The ones that are already trained are the ones who usually work for large and important products.” Engineer Jamal Shawwa

Conditions for local manufacture

If the product is manufactured by Piper in Egypt, they would have the benefits of cheap labour, and relatively low costs of transportation. And also Egypt is a large producer of different chemicals and petrochemicals. These benefits could prove to be so high, that they can use it to their own advantage and possibly change their strategy.

“Some companies come and manufacture their pipes here in Egypt so that they can take them back to their countries and sell them there (an example of a German company was given). They do this because labor and transportation here is so much cheaper. And the benefit they get from this is that they have a backup market as well (Egypt is 80 million + people and so there are a lot of pipes)” Engineer Aiman Al Sakka

4.2.8 Market Potential

Size, Growth and Needs

The pipe market size in Egypt is huge. With so many different projects (compounds, hotels, resorts, factories, and malls) being built, there is a very high demand on pipe installations and renewal for those that have already been built.

“The pipe market in Egypt is a very large market. There are so many different projects being built in Cairo right now, and those alone require a tremendous amount of pipes.” Engineer Samy Al-Gamal

Cairo Alone is a very large market that needs its demands met. There are so many pipes that constantly need renewal and care. In the pipe renewal market, the cast iron segment is much larger than that of the plastic pipes one. According to those interviewed cast iron pipes are much more expensive and require a larger amount of effort to replace when they get faulty or cracked.

“Yes, the pipe market in Egypt is very big! There are pipes being renovated or renewed every single day. We are 20 million living in Cairo alone! Imagine how many buildings, factories and companies there are. Yes of course it is a huge market.” Engineer Mohamed Mostafa

“You have to keep in mind that the usage of plastic pipes in Egypt is quite recent. They only started to use them in new projects in the late 80s early 90s, before that all the pipes that were used were cast iron pipes. When it comes to the older iron pipes, this is a HUGE market and there are a lot of problems with their renewal. If this product could be used for the renewal of those cast iron pipes, their product will no doubt be a HUGE hit in the Egyptian pipe market.” Engineer Aiman Al Sakka

The cast iron pipe segment is not the only segment in which Pipers innovation can be used; there are other segments in the market that also give promising potential.

“With cast iron pipes it is really hard and requires a lot of time and effort to change a section that is faulty or cracked, and I repeat that if this works with cast iron, they will be very successful here. But even if this doesn’t work on iron pipes, they can still be successful here, but it won’t be guaranteed like with iron. They can target certain segments in the market that maybe need fast solutions and don’t care to pay more. Or they want to find a nice solution that will last for their problem. And usually the companies that have this type of mentality and way of thinking in Egypt are the multinational firms and companies here in Egypt.” Engineer Jamal Shawwa

“The market for factory pipes and drainage pipes is also very large in Egypt. This is due to the heavy loads they handle on a daily basis. So the pipes need constant attention and renewal. But this means that the material used for the inner coating in this invention will have to be able to handle chemicals rather than water or sewage. If this is possible, they will have a very big market to enter into.” Dr. Khaled Elfarra

None of those interviewed had an idea, or were in possession of statistics about exactly how big the market is, or how big it is growing. And due to the current political situation along with the restricted time available, it was almost impossible to get any statistics from a governmental entity.

Competition

The competition between pipe manufacturers in Egypt is quite intense; most of the manufacturers produce pipes to international high quality standards. So they have to start competing on prices. What they usually do is go to retailers and sell them their pipes at a certain price telling the retailer that, the price they want to sell at is (-\$), and that the retailer gets 20% of the money for example. By putting the competitiveness into the retailer’s hands, they are already sure that the retailer will lower his 20% share in order to sell more than other retailers. And so that way they ensure that their products are being sold at cheap prices and they get the profit they want.

“The competition is very high; all of the companies are manufacturing almost similar quality pipes.” Dr. Khaled Elfarra

5. Analysis

In this section of the paper, an analysis will be done on the internal and external data that has been collected. The model that is being used to analyze the data is the model presented in the second chapter, and more precise the parts about market analyses and resources and capabilities. We will use these tools in order to analyze if the industry is attractive enough.

Each section and subsection from the points covered in the theoretical model will be evaluated. After reasoning, a score of high (+), medium (+/-) or low (-) will be given in order to be able to give an overall score/recommendation. A high score means the analysis shows that the points evaluated can work positively with the goals of Piper. A medium score means that the evaluation shows that the factors could work for or against the goals of Piper. And a low score means that the evaluation shows that the factors will work negatively against the goals of Piper. At first an analysis of the primary external factors will be made in order to determine whether or not the Egyptian market is an attractive one for piper to enter. If it is attractive, further analysis will be made through evaluating both the internal factors and the secondary (more specific to the market) external factors together.

5.1 Primary Stage

The primary external factors section was broken down into 4 main areas. Each area will be assessed individually and then an overall evaluation will be given. For each section, we will only focus on explaining the main factors that we believe are the most important for Piper. The rest of the factors will be placed in a table providing information on their main points and evaluation along with the most important ones.

5.1.1 Demographic/Physical Environment

Demographic/Physical Environment	Main Points	Score
Population Size, Growth, and Density	<ul style="list-style-type: none">- Large population of 83 million- Population has more than doubled since the 70s- Cairo (the capital) one of the most densely populated cities in the region	+
Rural vs. Urban Distribution	<ul style="list-style-type: none">- There is a steady percentage of people moving from rural areas to urban areas	+
Climate and Weather Variations	<ul style="list-style-type: none">- Most pipes are external- Rain in coastal cities, and heat inland accelerate the rate of problems with pipes	+
Product Significant Demographics and Natural Resources	<ul style="list-style-type: none">- All types of pipes are produced and used in Egypt along with their fittings- Some of the biggest industries in Egypt include: iron and steel manufacturing, working with chemicals and petrochemicals, and tourism	+

In this part of the primary external factors, the population size, growth and density were taken into consideration. The reason for this is because Pipers innovation is one that makes the renewal of drainage system pipes used in our everyday lives as human beings much easier and perhaps even cheaper. So the larger the population size, growth and density are, the more pipes are going to be used heavily and will require more renovation or renewal, which in turn means that it is more likely the demand for an innovation like theirs is expected to be present. It was found that the Egyptian population is quite large (83 million) and Cairo alone is 20 million people and is the biggest city in the Middle East and Africa. It is also one of the most densely populated areas in the whole region. The rate of growth was also found to be extremely high with the population more than doubling from the early 70s till today. This given, we chose to give Egypt a score of high (+) on the “Population Size, Growth, and Density” factor because it has a relatively large population, high rate of growth, and in some cities very high density, and these are factors that will work positively towards the goals of Piper.

Another point of importance was the rural vs. urban distribution. As of 2010, Egypt had 57.2% of the population living in rural areas, which had decreased from 57.28% just two years earlier. This means that a lot of people are moving from rural areas to the urban areas. So in theory that means that more apartments and homes are going to be built, which in turn means that more pipes are going to be used and more pipes will need renovation. Egypt still produces and uses cast iron pipes until today. Eng. Aiman Al Sakka mentioned that:

“If this innovation works on cast iron pipes, it can be used on the pipes BEFORE their installation. This would probably guarantee that the great problems we are facing with iron pipes today will not happen for an extra few decades!”

This tells us that the immigration from rural to urban areas will not only be a positive factor for Piper in the long run, but it will be positive for them in the short run as well, since the apartments and houses that are being built to accommodate these people moving into urban areas can be lined with their innovation even before installation. For this reason we chose to give Egypt a score of high (+) on the “Rural vs. Urban Distribution” factor.

Some of the natural resources and significant products that Egypt produces seem to be a perfect fit with Pipers innovation. Almost all types of pipes are produced in Egypt along with their fittings. Some of the biggest industries in Egypt include: iron and steel manufacturing, working with chemicals and petrochemicals, and tourism. Tourism is a huge market that can be tapped into by piper. Tourism is a very large part of the Egyptian economy, and so it is taken quite seriously in relative terms. And since hotels obviously use a lot of pipes and drainage pipes, they would be more than happy to use such an innovation for renewal, as opposed to taking more time, and having a big mess of tearing down and rebuilding in front of the guests. The less messy hotels can be while renovating and for a shorter period of time is something hotels in Egypt (or anywhere around the world for the matter) would opt for.

“Again I stress that they will be very very successful if they (Piper) target the tourism resorts industry here in Egypt or something that will always require very quick solutions, this is a very big advantage they have and must realize” Dr. Khaled Elfarra

Because of the significant products being produced in Egypt (pipes), and the nature of their major industries (iron, steel, chemicals, petro-chemicals, and tourism), we gave Egypt a score of high (+) on the “Product Significant Demographics and Natural resources” factor.

Overall Demographics Score:

After taking a look at what we have perceived as the three most important/crucial factors in the demographic environment of Egypt (Population Size Growth and Density, Rural vs. Urban Distribution, and Product Significant Demographics and Natural resources) and also discussing the findings with Piper, we come to the conclusion that because they fit so well with Pipers goals we are going to give Egypt a high (+) overall score in demographics. We can safely say this because the population size, growth, and density make the market quite attractive for Piper. Also the rate at which the urban population is growing makes it very attractive. Although the climate in this section is not a critical one, it has also turned out to be positive and working in Pipers favour. The natural resources and some significant productions within the country also fit Pipers profile quite perfectly. All these factors are quite beneficial for Piper, and make the market quite attractive to enter.

5.1.2 Political Environment

Political Environment	Main Points	Score
System of Government	N/A	N/A
Political Stability and Continuity	- The situation in Egypt has relatively stabilized since the revolution started, a parliament has been elected and presidential elections are set to take place	+/-
Ideological Orientation	N/A	N/A
Government Involvement in Business	N/A	N/A
Government Involvement in Communications	N/A	N/A
Attitudes Towards Foreign Business	- Egypt has been very welcoming to foreign businesses. And as stated earlier on in the paper, FDI plays a big role in the rising Egyptian economy	+
National and Economic Developmental Priorities	N/A	N/A

The political factors are quite important for Piper to consider. Because even if the market is a very attractive one, but the political factors do not work in the favour of Piper, then it would not be very beneficial for them to enter the market themselves.

Since the parliamentary elections have already taken place, and the presidential elections are going to take place at the end of the month, Egypt is already on its way to stabilization. If everything goes according to plan, by the beginning of next month a new president will be chosen and government put into place.

Because of the stabilizing situation in Egypt, we chose to give it a medium score (+/-) for the Political Stability and Continuity factor. Depending on the results of what happens with the elections and whether or not they go through, the political stability could work for or against Piper.

“Egypt is ranked 9th in Africa’s top investment countries. A survey, released by Ernst and Young, reveals that Egypt could remain an attractive destination for investors over the next five years. Egypt ranked number nine on the list of top ten African countries attracting more than 70 per cent of new foreign direct investment (FDI) projects announcements between 2003 and 2010, Ernst and Young's 2011 Africa Attractiveness Survey reveals.”

(Cyprus Trade Center - Cairo, 2012)

Based on this, and some previous information mentioned about FDI, we chose to give Egypt a score of high (+) on the Attitudes towards Foreign Business factor.

Overall Political Environment Score:

Not much information could be gathered on the ever changing political factors of course due to the given situation in Egypt. But if we are to make our score assessment based on the expectations one can read about on the internet and through several news sources, it can be said that if the elections take place as planned, we can give Egypt a **medium (+/-) overall score** on political environment. But if for some unexpected reason the elections are postponed or do not take place, then Egypt will score **low (-)** on the political environment.

5.2.3 Economic Environment

Economic Environment	Main Points	Score
Overall level of development	- Egypt is a developing country that has a lot of opportunities and requires a lot of investment	+
Economic Growth: GNP	- The Egyptian GNP has doubled over the past decade	+
Role of foreign trade	- FDI has played a very big role in the Egyptian Economy and is expected to continue doing so in the future	+
Currency	- The currency is expected to fall a bit in value	-
Balance of payments	- Before the revolution there was a surplus in the balance of payments for the country, but naturally after the revolution the balance of payments has shown a deficit although this deficit has been decreasing steadily after the revolution started by a few months	+
Per capita income	- Per capita income has been increasing at a slow rate over the past decade	+
Disposable income	- Average disposable incomes have been steadily moving upwards over the past decade	+

According to the World Bank statistics, Egypt's GNP has doubled from the year 2000 till 2010 (The World Bank Group, 2012). This shows us that the country is at a very good level of economic development, which in turn means that a lot of opportunities are rising in the country. For this we gave Egypt scores of high (+) on the overall level of development, and economic growth factors.

Egypt was moving towards a more free Economy, and had a large amount of FDI (Foreign Direct Investment) injected into its economy yearly. Prior the revolution, that number reach approximately \$1.6 billion dollars annually, but after the revolution that number fell to almost a quarter that value. (Ahramonline, 2011)

According to the report titled 'It's time for Africa', Egypt has grown in FDI by 30 per cent from 2003 to 2010. Because the movement towards a more free economy was proven to be successful, it is expected that Egypt will continue to move in that direction after a new president is elected. The economic and political relationships between Egypt and Sweden are quite good. There are high levels of cooperation and agreements between both countries, which include business and industrial committees, economic and technical agreements, several investments, and a trade volume that approximately amounts up to €700 million a year. There are several Swedish companies that already operate on Egyptian soil. (Egypt Independent, 2011)

These facts showed us that Egypt deserved a score of high (+) on the role of foreign trade factor since they work in Piper's favour.

The Egyptian currency is expected to fall in value as a result of the stagnant economy for the past year and a half (although it hasn't changed much to date, because of the reserves). And since the

presidential elections are expected to take place in the near future, perhaps the currency is not going to fall extremely low as it was expected to. This forced us to give Egypt a score of low on the currency factor, because if the currency falls in value as expected, this means that Piper's product is going to be relatively more expensive and might not sell as well as it would have if the currency was more stable.

Overall Economic Environment Score:

When taking these crucial economic factors into consideration (level of development, GNP, role of foreign trade, and the currency), Egypt is a country that is still growing economically. And this shows that the country has a lot of potential. The fact that there is a high degree of cooperation between Egypt and Sweden on many different levels is also a good factor that Piper should take into consideration.

If the newly elected government/president moves in the proper direction with the country's economy, Egypt will be a very attractive place to invest or do business in. (Stangler & Litan, 2011)

So we can say that if everything goes as planned, and a proper civil government and president are elected by the end of the month, the economic factors of Egypt will get a **high (+) score** from us, if not, then it will be just medium (+/-) keeping the already strong political and economic relations between Egypt and Sweden in mind.

5.1.4 Social/Cultural Environment

Social/Cultural Environment	Main Points	Score
Literacy rate and education level	- The majority of people in Egypt are literate	+
Existence of middle class	- In comparison to the lower and upper classes, there are very few middle class people	-
Similarities and differences to home market	- Business is more or less carried out in the same fashion in Egypt and Sweden in terms of contracts, official meetings, etc.	+
Language and cultural considerations	- The majority of educated people can speak English to some degree. Businesses usually have more educated people and thus have better levels of English present amongst their ranks	+

The most important social and cultural factors that should be taken into consideration by Piper are the literacy rate and education levels throughout the country, the language barriers (if any), and any other cultural differences that could cause problems or that they need to be aware of. The reason literacy rate and education was taken into consideration as an important factor is because it is directly linked to the language(s) spoken in the country.

The literacy rate in Egypt is around 66.4%. Of these, a majority goes to school and learns languages other than the native Arabic. The most common second language taught by public and private schools is the English language. Some schools choose the second language to be French or German. This is an important factor to be considered by Piper so they know in which language they are going to deal with the companies in Egypt. Most educated people can speak an understandable level of English, although the degree varies depending on other factors such as the social standing and the type of school (higher social class speak better). And after sitting down with the representatives from Piper and sharing this information with them, we were told that one of the languages that Piper already uses in dealing with other companies throughout Europe is English, and so this should not be a problem for them. And because this works in the favour of Piper, we decided to give Egypt a score of high (+) on the literacy and education and language factors.

The other cultural factors that should be taken into consideration are the cultural differences. As stated earlier on in the paper, Piper should be aware that new technologies don't get picked up as quickly as they do in western countries in general (although this differs based on the size and type of company in Egypt). Keeping this in mind, they should only deal with the larger more dominant and international companies at first.

Overall Social/Cultural Environment Score:

From a social perspective, there are not too many barriers awaiting Piper should they choose to enter the Egyptian market, just a few minor points that they should be aware of. So a score of **high (+)** will be given to Egypt on the social and cultural factors, since the majority of business men speak English, and the bigger and more international companies are willing to adopt new technologies if they feel it is worth it, as opposed to the smaller companies that are less reluctant towards adopting new technologies.

Overall Primary Screening Score and Recommendation:

For the primary screening section, we have taken a look at the 4 sections: Demographic/Physical Environment, Political Environment, Economic Environment, and Social/Cultural Environment and their subsections. All the sections with the exception of Political Environment received a high (+) overall score from us based on the goals of Piper and factors taken into consideration. The important factors taken into consideration proved to be quite attractive and in line with Piper's company goals. The Political Environment was given a Medium (+/-) to low (-) overall score depending on what happens in the near future. If the presidential elections take place as expected at the end of the month, then Egypt will have a score of medium (+/-) because the instability period will end, and the country will begin to move forward again. If the elections are postponed then a score of low (-) will be given. So for the overall primary screening score, we give Egypt a high (+) based on all the factors put together and assuming that the presidential elections go as planned. Egypt is definitely a market worth further investigation for Piper.

5.2 Secondary Stage

5.2.1 Market Access

Market Access	Main Points	Score
Market limitations and barriers for entry	- There are no limitations or barriers for entry in the Pipe market in Egypt	+
Documentation and import regulations	- There are no extensive documentations required or extra regulations for imports	+
Local standards	- The standards depend on the segment of the market that is going to be targeted - There are no minimum standards	+
Patent laws	- Patent laws are not very serious but not completely free - There aren't enough resources for reverse engineering in this field	+
Legal considerations	- There are no additional legal factors to be taken into consideration in the Egyptian Pipe market	+

The most important factors for Piper in the Market Access section are the Market Limitations and Barriers for Entry, Local Standards and the Patent Laws factors. The Egyptian pipe market was found to have almost no barriers for entry. All the people interviewed agreed that the documentations required, and the costs for selling a product within this market are almost negligible compared to that of other markets. This is good news for Piper since they do not have a lot of cash in hand at the moment, and they are striving to keep costs as low as possible. The interviewed people also agreed on the fact that there are no strict standards for the quality of products to be used, but rather the quality of the product is what will determine which segment of the market will be more feasible to target. This is also good news for Piper, because they will not have to modify their product in order to meet any minimum requirements for entering the attractive market. Since Piper already follows the strategy of keeping costs at a minimum, these factors work with their goals and current capabilities. In order to enter the Egyptian pipe market they will not have to pay a lot of money or taxes, nor will they have to take care of any additional legal issues. Because the market barriers are not high, and there are no high costs for selling the product in this market, the market limitation and barriers for entry and local standard factors gets a score of high (+).

Patent laws in Egypt are not as serious as in Europe or the United States for example, but at the same time they are not completely free like in China or Korea or other countries that have economies based on reverse engineering and copying. In Egypt, the government will only intervene and place patent laws into effect if the company that is having their product counterfeited or copied files a formal complaint.

Patent laws around the world can be worked around in the sense that if someone copies a product but changes one or two small things, it cannot be protected by the patent laws. According to one

of the people interviewed, the Egyptian pipe market does not possess the required equipment or funds to reverse Pipers innovation anyway. So even if patent laws are not taken so seriously, there is no way someone would have the equipment or investments required into reverse engineering Pipers product to be able to copy it.

Pipers innovation is quite complex as well, and training is required from their end in order to educate the companies/people buying the product not only about the product itself, but how it works and is installed, etc.

So in this sense, when it comes to patent laws in the country, we look at two issues: How strictly the laws are implemented, and whether or not copying is possible. It can be said that the Egyptian pipe market can be given a score of high (+) because:

1. If someone copies the product and Piper files a formal complaint, the government will intervene and definitely prevent the copier from further carrying out their activities
2. No one has the capabilities to copy the product in this industry anyways, so this should not be considered to be a very worrying obstacle.

Overall Market Access Score:

The most important factors that we thought Piper should consider when it came to market access were: Market limitations and barriers for entry, local standards, and patent laws. The Egyptian pipe market scored high on all three factors. This is because after speaking to the representatives at Piper, we found these factors to be perfectly in line with the company goals. There are no market limitations or barriers for entry, and therefore Piper will not have to satisfy any demanding conditions in order to be able to enter this attractive market. Generally speaking, there are no minimum standards in Egypt. There are pipes of all types and standards being manufactured in Egypt, and so within the pipe market, there is a segment for each type and quality. And this works in Pipers favour as they will not have to worry about changing their product even slightly in order to be able to enter the market. And finally, they will not have to worry about their product being copied in Egypt because in the very unlikely case that someone tries and succeeds and Piper file an official complaint, the copiers will be forced by law to shut down all activities immediately. And even if patent laws were not taken seriously or put into effect, the pipe market in Egypt does not possess the equipment or financial resources to reverse engineer such a product which is considered to be relatively advanced. Because of these factors we have decided to give Egypt a score of high (+) on the Market Access factors.

5.2.2 Product Potential

Product Potential	Main Points	Score
Customer needs and desires	<ul style="list-style-type: none"> - Constant renovation of drainage systems is required - Majority of pipes present today are cast iron, although plastic pipes have started to come into the picture since the 90s 	+
Local production and imports	<ul style="list-style-type: none"> - All types of pipes are produced (iron and plastic) along with their fittings - Some pipes are imported, but most are manufactured locally 	+
Availability of linking products	<ul style="list-style-type: none"> - The pipes that need to be renewed can be considered as a linking product - The companies that provide the sole service of renovation could also be considered as a linking product 	+
Attitude towards products of foreign origin	<ul style="list-style-type: none"> - Mentality that foreign is better - In this market they prefer locally manufactured pipes because they are of international standards and are cheaper 	+
Cost to benefit ratio	<ul style="list-style-type: none"> - Although Piper's innovation might be more expensive than some other options for renewal in the market, the benefits gained from using their product are a lot 	+
Degree of quality	<ul style="list-style-type: none"> - Quality of renewal is considered to be of better quality than the current methods used for renewal 	+
Competitive offerings	<ul style="list-style-type: none"> - Complete removal of faulty section in the pipe - External bi-pass solution - Welding faulty areas (in case of cast iron pipes) 	+

The most important product potential factors that Piper needs to take into consideration are: Customer needs, and the competitive offerings. For the customer needs and desires we found that because of the high population, especially in Cairo, there is a huge demand for the renovation of pipes. There are so many buildings that are constantly facing troubles with their drainage system pipes because of the high usage and other factors as well. There are also high demands for quicker renewal options in markets such as the tourism market, and the industrial market. All these places also require drainage pipe renovation constantly, and they also need it done in a quicker and cleaner manner. Because of this, we have decided that Egypt will get a score of high (+) on the customer needs factor.

As for the competitive offerings, there are 3 different methods that could be used to renew pipes. The first is complete removal of the faulty section in the pipe and replacing it with a new one. Piper's solution for pipe renewal is better than this solution in the sense that it does not require as much destruction of the floor or walls or ducts like this method does. The second solution would be to introduce an external bi-pass pipe to make the faulty section of the other pipe obsolete. This solution does not require a lot of tearing down and breaking floors and walls, and at the same

time is considered to be quite a cheap alternative. However the two disadvantages this solution has that Piper's method does not are:

1. The bi-pass solution will be exposed and if it is placed in an area where it can get knocked or have pressure applied to it easily, it can easily get broken.
2. This solution is an ugly alternative. Meaning that it will be sore for the eyes to look at, just having an external pipe sticking out where it does not belong.

The final method that can be used as an alternative to Piper's solution can only be applied to cast iron pipes, and that is the welding solution. The welding solution requires that the faulty section of the pipe be removed from the ground or wall, welded, and placed back in, and then rebuilding the wall or destroyed part of the floor. This process is very long and costly because of the breaking and rebuilding and welding, and so Piper's solution is considered to be much more simple and effort saving in comparison. Because of these reasons we have decided to give Egypt a high (+) score on the competitive offerings, because Piper's solution is less destructive, and in some cases simpler to use, and therefore is considered to be a very unique solution for pipe renewal.

Overall Product Potential Score:

The two most important factors for piper are the customer needs, and the competitive offerings available in the market. As we have seen, the customer demands and needs in the market are quite high, and this is a good sign for Piper and the potential to be able to sell their product in the Egyptian market. And also since their product has several advantages over the current competitive offerings, then that means that their product has a high chance of being successful in the market. And so we have decided that Egypt will get a score of high (+) on the Product Potential factors because the two most important ones are in line with the goals of Piper.

5.2.3 Local Distribution and Production

Local Distribution and Production	Main Points	Score
Availability of Intermediaries	- There are many different intermediaries available in the Egyptian pipe market	+
Regional and local transportation facilities	- Transportation is very cheap in each Egypt, due to subsidized benzene and very cheap labor costs	+
Availability of manpower	- Manpower is widely available - Most of the manpower (the ones that install and renew pipes) is relatively uneducated. But there are a few that are educated - Many of them would be willing to learn a new method or how to install a new product to get an edge over other workers	+
Conditions for local manufacture	- Cheap labor - Cheap transportation - Egypt is a large producer of chemicals and petrochemicals	+

For the local distribution and production factors, the two most important factors that should be mainly considered are the availability of intermediaries, and the conditions for local manufacture. These two are the most important ones because they will most probably be some of the deciding factors of what short term and long term strategies Piper will have available to them should they choose to enter the Egyptian market.

For the availability of intermediaries, there are several in the Egyptian market that can be used. There are the companies that purchase renovation contracts. They can be used as intermediaries for introducing the product into the market. There are also the pipe producers. They can be considered as intermediaries since they can offer Piper's solution as the best one to be used on their product if anything goes faulty in the future. The stores that sell pipes can obviously be considered as an intermediary. And finally the construction consulting firms can also offer advice on using Piper's renewal solution as the best alternative for large renovation projects for example. Because of the large number of available intermediaries we have decided to give Egypt a score of high (+) on this factor.

As for the local conditions of manufacture, we know that Egypt has very cheap labour, subsidized benzene, and is a large producer of chemicals and petrochemicals. These factors make local production a very tempting idea to ponder for Piper. And because of this we have given Egypt another score of high (+) on this factor.

Overall Local Distribution and Production Score:

Taking the two most important factors of local distribution and production into perspective, we notice that Egypt scored high on both of those factors, and therefore that gives Piper numerous

methods that they can choose from in order to enter the Egyptian market with their product. And therefore we have decided to give Egypt and overall score of high (+) on the local distribution and production factors.

5.2.4 Market Potential

Market Potential	Main Points	Score
Market Size	- Very big market	+
Market Growth Rate	- More projects are being built everyday	+
Market Needs	- Pipe renewal is in very high demand	+
Competition Amongst Existing Firms	- High competition for the sale of pipes. And the more pipes that are sold, the more renewal will be needed	+

For the market potential factors, given that we have already talked about the importance of the market size and needs in previous sections and their relation to Piper realizing their goals, in this section we feel that the most important factor to be considered by Piper is the market growth rate.

The higher the market growth rate is the more potential Piper will have of selling their product. And although we could not get any specific statistics for a governmental sector about the market, when we asked the interviewees about the market growth rate, we got some more general but helpful answers. It was commonly believed the market for pipes is ever growing in Egypt due to the large amount of projects that are being built throughout the country. This in turn means that so many pipes are going to be used, and also many pipes will need to be renovated. And not only that, but as mentioned before Piper does not have to necessarily wait for the pipes to be faulty for them to sell their product in these areas. It is possible that their product could be pre-installed in some of the pipes before they are put in the ground or wall to increase their expected lifetime before they are even used. Because of this, we believe that Egypt score a high (+) yet again on the market growth factor.

Overall Market Potential Score:

The market growth rate is considered to be the most important factor in this section, as some of the factors were linked to other sections and have already been discussed. We believe that because the market is growing so much in Egypt with a lot of projects being built, that this definitely works in the favour of Piper and its goals. And so we have decided to give Egypt and overall score of high (+) on the market potential factors.

5.2.5 Internal Factors

5.2.5.1 Resources

Resources	Main Points	Score
Tangible	<ul style="list-style-type: none">- They do not have a lot of cash available- Their debt to equity ratio is good do to the fact that they have no debts- Piper do not possesses over their own equipment's and plants	+/-
Intangible	<ul style="list-style-type: none">- They have a patent and a brand that is protected through copyrighted- Piper is basically selling their trade secrets- The customers are buying Piper Force repeatedly	+
Human	<ul style="list-style-type: none">- Piper possess over high technological qualifications and high educational qualifications- They are always aiming at improving but are not there yet	+/-

The most important tangible factors when analysing Piper are how much case they have available, their debt to equity ratio and how much physical equipment they possess over. In this case we give them a score of medium (+/-) because of the fact that they do not have that much cash available and they do not own their equipment's and plants. We give the intangible factors a high score (+) due to the fact that it is the knowledge and experience they are selling. Furthermore, they have also customers that are reliable. Piper has competent employees that possesses over high technological qualifications and educational qualifications. But they are not a 100 % at delivering on time and give the best service which brings down the result to a strong medium grade (+/-).

Overall Resources score:

Regarding the resources we give Piper an overall score of medium (+/-). This because they have the potential but lacks a bit in regards to cash available and owning their own plants. But this is not the most important reason we give them a score of medium. The most important reason we give them a score of medium it is because they still have some improvements to make in the fields of delivering on time and give the best service possible.

5.2.5.1 *Capabilities*

Capabilities	Main Points	Score
Marketing Synergy and Technological Synergy	<ul style="list-style-type: none"> - Using old marketing knowledge when marketing towards new potential customers - Using old technological knowledge when developing new products 	+
Proficiency of predevelopment activities, Proficiency of market-related activities and Proficiency of technological activities	<ul style="list-style-type: none"> - Analyzing the new market before entering it - High quality of the product - They Market the product well when commercializing it 	+

Piper’s capabilities are all very important. We chose to give Piper a high pass (+) because they are using old knowledge to improve both marketing activities and technology. They are also aware of the mistakes that have been done and are aiming at improving the product. We also give their proficiency of predevelopment activities, market-related activities and technological activities a high score (+). The reason for this is that they are using different tools to analyse a market before entering it and Piper Force is considered being of high quality. Furthermore, they are always marketing there product well when commercialising a new market.

Overall Score of the Capabilities:

The overall score of Pipers capabilities is a high score (+). This because they are always trying to improve themselves, have good understanding of what has worked before and not worked. Piper are also working on improving a product that is already considered being of high quality which makes the case for a high pass (+) even stronger.

6. Conclusion

In this chapter we will first start by providing the reader with the answer to our research question. This answer will be based on the analysis made of the external and internal data collected in the previous chapter. We will also provide the reader with suggestions on how Piper should enter the Egyptian market and in the end future research will be provided to the reader.

6.1 Proper commercialization strategy

Our research question is

What is a suitable commercialization strategy for Piper when entering the Egyptian market?

As our theoretical framework suggest, there are two different commercialization strategies that Piper can choose, namely “Profiting from Innovation through the Product Market” and “Profiting from Innovation through the Market for Ideas”. These two are dependent on both internal and external factors as our theoretical framework states. It is also dependent on the right business model, the right regimes of appropriability, timing, design phases and the ownership to complimentary assets in accordance with theory. These parts all have an impact on the commercialization strategy and are crucial to the outcome of the commercialization for Piper when entering Egypt. When answering the research question we will take these into consideration and exam and discuss them with the help of the analyses made in the previous chapter.

The first part to analyze is regimes of appropriability. It included factors that has an impact on the products performance but is not according to theory market and firm specific. Instead it is governmental protection such as patents and copyrights. In Pipers case they have as stated by the employees patented the product within Sweden and are waiting for an approval for an international patent. Piper also has protected their brand through copyrights, both its company name and for Piper Force. We gave Egypt a high pass when analyzing the patents laws, this because if someone sent in a formal complaint to the government they would fix the problem. So in the case of regimes of appropriability and making a profit of the product with the help of governmental protection the case for Piper is good. But as seen in the analyses the political situation in Egypt is not that stable and might have an impact on the governmental protection.

When analyzing the design phases there are according to theory two different parts, namely one that has an impact on the product and one that determines the process of producing the goods. For Piper, the right design phases of the product are not that crucial to analyze because they way of using Piper Force is already set. Even do Piper is making changes all the time; it is incremental changes that do not have an impact on the design of the product. But the design phase of producing the material for the product might have an impact on the product still, and

Egypt might be a market where Piper can set up a producing facility that not only produce the product cheaper than in Sweden but also improve the process.

One problem that Piper has is that they do not own their own assets and this might have an impact on the commercialization phase. According to theory it is crucial for a company too either own their own complimentary product or have partners they can trust. In Pipers case, this is not that important because the products they do not own is equipment that will help their customers use Piper Force but because they have a patent which makes it hard to steal the product. Another implication is that Piper does not sell the actual product, they are selling their experience, so even if competitors would use other equipment it is not that crucial. Because of this we do not think that ownership over complimentary assets is a deal breaker for Piper in this case and will not in the end have an impact on the commercialization phase.

According to resent theory is that a company should try to make their entire business model hard to copy in order to protect it. In Pipers case, we think that they have done that. For example, they have a patent that protects them in courts; they have some control over the design phases and the complimentary assets and they have the right personnel with the right knowledge. But one factor they do not have control over is how their competitors will act if they chooses to commercialize Piper Force in Egypt. Because of their business model and experience we also think that it does not matter that much how their competitors act and Piper will have an impact on the Egyptian market.

The two commercialization strategies that Piper has at its disposal are as stated above “Profiting from Innovation through the Product Market” and “Profiting from Innovation through the Market for Ideas”. Both strategies have pros and cons that need to be taken into consideration and we recommend Piper that for now to find a small partner in Egypt that will help them set up their business there. This because the cost of setting up their own subsidiary in Egypt are two high and would make it harder for them to leave Egypt if the political situation is getting worse. Furthermore, if they find a small partner Piper the risk of the product being stolen by that partner is not that big because of the lack of own resources and knowledge. If Piper commercializes the product with a partner they do not have to spend that much money either and the sunk cost for complimentary assets would not be that big. The only risk they have is if their competitors try to respond to the threat but because of Pipers business model and product this is not that crucial and they would still be a market leader. Another point to make is that this choice is not static; Piper could in a future chose to set up a subsidiary in Egypt and be more aggressive in their expanding whiten the entire region. But because of the lack of resources we do not recommend them to do this at the moment. But instead we recommend that the best commercializing strategy is finding a partner that will help them commercialise Piper Force in Egypt.

6.2 Recommendations on how to enter the Egyptian market

We have come up with some recommendations for Piper on when and how to enter the Egyptian market. Looking back at the analysis of the empirical data, we find that in the primary stage, Egypt scored high and proved to be a market worth further investigation on three of the 4 sections: Demographic/Physical Environment, Economic Environment, and Social Environment. The only section of the 4 to be considered that did not receive a high score was the Political Environment. This is of course because of the revolution that took place over a year ago and the political developments that Egypt has gone through since then. Everything has relatively calmed down from the time the revolution started. A new parliament has been elected, and a new president is on the way of being elected at the end of the current month. And once that happens, stability and economic progress are expected to be restored in Egypt. This is the only negative factor that we found about entering the Egyptian market that could really make a difference with Piper. For this reason we advise Piper to wait to see if the elections actually go through and everything remains stable as expected.

If everything goes as planned and stability is restored in Egypt, there is no question about Piper entering the Egyptian market. It is just a matter of how. In the secondary stage of analysis we looked deeper into the Egyptian pipe market and took all the factors that need to be considered by Piper and gave them a score of high, medium, or low, based on whether or not these factors work for or against the goals and capabilities of Piper. Of these factors, we discussed and reasoned the scores given to the utmost important factors for each section that we thought Piper should base their decisions on. Egypt was given a high score on all these factors which further proves how attractive the Egyptian market is for Piper.

Piper currently follows the licensing strategy with its customers. This is because they would like to keep costs at a minimum, and not take any of the market risks themselves, but rather transfer them to players already present in different markets and have a loyal customer base. If stability is restored, and Piper chooses to enter the Egyptian market, we recommend that as a short-term strategy Piper can keep following their current strategy in order to avoid any major risks. They should as stated above find a partner that will help them enter the Egyptian market and to sell the Piper Force together with that partner. This way they can check to see if there will be a high demand for their product in Egypt, and whether or not people and companies there will have troubles adapting to this new technology or not. Should it prove unsuccessful, they should withdraw from the market and search for other markets that seem to have potential. But should it prove to be successful, they can move on to executing a mid-run strategy.

For the mid-run strategy, Piper can increase the number of licenses they give out to players in the Egyptian market. And they should do this with different types of players in order to increase the exposure of their product on the market. They should license it to pipe producers, renovation companies, pipe retailers, construction consultancy firms, etc. This way they can have a diverse and maximum reach on the clients in the market.

Once Piper's product has become very successful and well known, and a lot of profit is made from the market, they should consider moving their production there and to set up their own subsidiary. They will have the cash required to start producing the product there and sell it by themselves. And if they are in control of the production of their own product there, the benefits of having very cheap labor, and subsidized benzene, and widely available range of chemicals and petrochemicals being produced in the country, they will be able to produce the product at the same quality that they currently do, but at a much cheaper price. And by doing that they will make the product cheaper not only for the Egyptian market, but for all the other markets they will be in at the time.

6.3 Future research

In the research that has been done there are some implications that can be investigated in the future, namely the generic models that are presented by the different authors within commercialisation and entry strategies. The research that has been done does not separate different firms, industries or sizes from each other. The models should be more specific to different sizes of the companies and the branches that the companies are acting in. For example are there differences between how a utility company and a producing company chooses to commercialise and enter. The problem is that the models take a too broad perspective of the problem and there should be more case studies made on different companies in different industries with different sizes.

Another potential research area is that all models on commercialisation and entry discuss external and internal factors, different ways of protecting the products, how complimentary assets have an impact and so forth. But no model discuss if these really have an impact and if they are necessary to take in to consideration. There should be research that focus on companies that has a product that is not protect by patents, easy to copy, where they do not own their own complimentary assets and has a business model that is easy to copy but still has succeed. It would be interesting to see how these companies have succeeded and what did they do differently.

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Appendices

Appendix 1 – Questioners for Internal and External parts

External Questions

The Demographic/Physical Environment:

- **Population size, growth, density**
 - What is the size of the Egyptian population?
 - What is the growth rate of the Egyptian population?
 - What is the density of the population in major cities?
- **Urban & rural distribution**
 - What percentage of Egyptians lives in urban areas?
 - What percentage of Egyptians lives in rural areas?
- **Climate & weather variations**
 - What type of weather does Egypt have?
 - Does this affect the product at hand?
- **Shipping distance**
 - What is the shipping distance between Egypt and Sweden?
 - Different means of transport, and the time it takes?
- **Product-significant demographics**
 - How is the piping industry spread over Egypt?
 - How many people work within the industry?
- **Natural resources**
 - What are the natural resources that Egypt has?
 - Are any of the used, or could be used for the product at hand?

The Political Environment:

- **System of government**
 - What is the system of the current Egyptian government?
- **Political stability and continuity**

- What is the political situation in Egypt right now?
- What is the prediction of stability and continuity?
- **Ideological Orientation**
 - What kind of political orientation has the country?
- **Government involvement in business**
 - Does the Egyptian government get involved in business?
 - If yes, how do they get involved, and to what extent?
- **Government involvement in communications**
 - Does the government get involved in communications?
 - Do they behave as an intermediary somehow?
 - If yes, how involved are they?
- **Attitudes towards foreign business**
 - Is foreign trade and investment encouraged in Egypt?
 - Are there any special laws for foreign businesses?
- **National economic and developmental priorities**
 - Does the Egyptian government subsidize, help, or have special laws for certain economic and developmental issues/businesses & investments?

The Economic Environment:

- **Overall level of development**
 - What is the level of Economic development in Egypt?
 - Has it been growing or declining over the past few years?
- **Economic growth: GNP, industrial sector**
 - What is the level of economic growth?
 - What is the current GNP of Egypt and how has it varied over the past few years?
 - What does the industrial sector in Egypt look like?
- **Role of foreign trade in the economy**
 - How much percentage does foreign trade contribute to the Egyptian economy?
- **Currency: inflation rate, availability, controls, stability of exchange rates**

- **Local standards, practices, and other non-tariff barriers**
 - Are there any local standards?
 - Are there any other barriers for entry?

Barriers to enter	High	Low
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- **Patents and trademarks**
 - Are there patent laws?
 - If yes are they taken seriously?

Degree of IP rights	High	Low
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- **Legal considerations: investment, taxation, repatriation, employment, code of laws**
 - What are the legal issues that should be put into consideration?

Degree of legal issues	High	Low
------------------------	------	-----

Market Access: Overall Rating

Product Potential:

- **Customer needs and desires**
 - What are the customer needs and desires when it comes to pipes?

Is there a need from the customer	High	Low
-----------------------------------	------	-----

- **Local production, imports, consumption**
 - What pipes are produced locally?
 - Are there any pipe imports?

What is the level of locally produced pipes vs. imported pipes?	High	Low
---	------	-----

 - What is the level of pipe consumption?

How high is the level of pipe consumption	High	Low
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- **Exposure to and acceptance of product**
 - What is the likelihood that the product will be accepted?
 - What is the level of risk that the product will not be accepted?

High	Low
------	-----

- **Availability of linking products**
 - Are there any complementary products available?

What is the degree of complementary products available?

High Low

- **Attitude towards products of foreign origin**

- What is the general attitude towards products of foreign origin?

How positive is the attitude towards products?

High Low

- **Cost to benefit ratio**

- How much better is the cost of this product compared to existing products?

The degree of better cost to benefit ratio

High Low

- **Degree of quality?**

- How much better is the quality of the product?

The degree of better quality compared to competing products? High

Low

- **Competitive offerings**

- Are there any substitutes or products that serve the same purpose that could compete with this one?

What is the degree of competition? High Low

Product Potential: Overall Rating

Local Distribution and Production:

- **Availability of intermediaries**

- Availability of actors within this industry

- What are the different types of actors?

How many actors are there within the industry? High Low

- **Regional and local transportation facilities**

- What are the types and costs of local transportation?

What are the possibilities for transportation? High Low

- **Availability of manpower**

- What is the workforce in this sector like?

- Is there a lot of manpower available?

What is the degree of skilled personnel? High Low

- **Conditions for local manufacture**

- If the product were to be manufactured locally, what would the conditions be like?

What is the degree of quality for locally manufactured products?

High Low

Local Distribution: Overall Rating

Market Potential:

- **Market size**

- What is the size of the market?

What is the degree of the market size compared to home market?

High Low

- **Market growth rate**

- How fast does the market grow?

Compared to the home market, how fast does this market grow? High

Low

- **Market need**

- What are the market needs?

What is the degree of a need for the product within the market? High Low

- **Competition amongst existing firms**

- How intense is the competition within the market?

What is the degree of competition within the market?

High Low

Market Potential: Overall Rating

High Low

Internal Questions

Resources

Tangible

1. **Financial**

- The amount of cash available for investment within the company?

- The debt to equity ratio?
- The access to securities, such as insurance guarantees?

2. **Physical**

- How much of the equipment does the company own?
- How many plants does the company own?
- What other assets does the company own?

Intangible

1. **Technology**

- Is the innovation patented? Local level or global level?
- Is the company protected with some sort of a copyright?
- Does the company have any trade secrets? Yes/No

2. **Reputation**

- What kind of brands does the company possess over?
- Do they have any strong ties with other companies within Sweden and outside of Sweden?
- Do you have a loyal customer base? Inside or outside of Sweden?

3. **Culture**

- What type of culture does exist within the firm? Entrepreneurial culture or is it reflected by other values?

Human

1. **Skills**

- Do the employees have any sort of higher education?
- Do the employees possess any sort of technological qualification?
- Are the employees professional enough in terms of being at time, communication with customer, language used?

2. **Motivation**

- How high is the consistency of work done by the employees?
 - How linked is it to motivational factors within the company?
- For how long has the employees worked within the company?

Capabilities

1. **Proficiency of predevelopment activities**

- Do they have the resources and capabilities required to carry out the predevelopment activities before entering a new market? (Market research, etc.)
- 2. Proficiency of market-related activities**
 - How good are there marketing channels and marketing activities?
 - 3. Proficiency of technological activities**
 - How high is the quality of the product made?
 - 4. Marketing Synergy**
 - How much 'old' knowledge is being used when marketing the products?
 - 5. Technological Synergy**
 - How much 'old' knowledge is being used when developing there technology?

Appendix 2 – Internal answers

Interview with Engineer Aiman Al Sakka, the Vice-Chairman of TARSHEED for Engineering, Business, & Management Consulting

Question: Are there any standards or limitations in order for someone to enter the pipe market with their product or innovation?

Eng. Aiman: There are no constraints or barriers for pipe market entry in Egypt. It is up to the company/person that wants to enter the market. If they want to target a specific market, that market regulates the quality of pipes that are going to be manufactured or used.

In some rural areas, there are no pipe standards whatsoever. In urban areas the larger projects that are constructed will most definitely have some minimum standards and requirements for the installation and usage of pipes whereas in smaller projects, there will probably be no standards and it is up to the manufacturing company or owner of the project.

But usually most manufacturers here in Egypt stick to international standards so they can export their products to foreign markets and not only be constrained to selling locally. So manufacturers could perhaps manufacture pipes here in Egypt according to other African country standards which are much lower just so they can export to these countries and gain a market share there.

Obtaining a license for manufacturing in such an industry is very easy to get and should not be considered a problem at all. Only energy intensive productions such as iron or cement must get special approvals and licenses for production.

Question: What types of pipes are manufactured here in Egypt?

Eng. Aiman: Here in Egypt we manufacture: PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene pipes along with their fittings, and also Cast Iron pipes.

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Eng. Aiman: Yes the majority of pipes are manufactured here in Egypt according to international standards. There still are some pipes however that are imported. There is almost no difference though between the qualities of the locally manufactured pipes and the imported ones. Local pipes are preferred in the local market because they are much cheaper and the same quality.

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Eng. Aiman: It's not strict like Europe, but it's not free like in China. It is taken seriously to some extent. Besides, this market specifically is not that intelligent here in Egypt. No one in this market has the intelligence or financial capabilities to reverse engineer such an invention. So even if it was not taken seriously, they should not be worried at all. There is no investment whatsoever in reverse engineering here as opposed to China and Korea for example. And reverse engineering such a product needs lots of time, money, labs, and equipment, things which are not present in this market/industry in Egypt.

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Eng. Aiman: You have to keep in mind that the usage of plastic pipes in Egypt is quite recent. They only started to use them in new projects in the late 80s early 90s, before that all the pipes that were used were cast iron pipes. When it comes to the older iron pipes, this is a HUGE market and there are a lot of problems with their renewal. If this product could be used for the renewal of those cast iron pipes, their product will no doubt be a HUGE hit in the Egyptian pipe market.

However if their product is only made for plastic pipes, they are fairly new here in Egypt and most of the pipes are external, so they are very easily replaced. And I assume that such a product would cost much more than replacing a PVC pipe for example, which is very cheap here in Egypt.

Question: What types of pipes make up the majority of already built urban areas?

Eng. Aiman: The majority are of course cast iron pipes. However, all the new projects, building and cities being constructed of course use plastic pipes.

Question: Who owns the pipes in the buildings that are constructed?

Eng. Aiman: If the building is owned by a company, or one person who is renting out the apartments, it is their responsibility to renovate anything that goes wrong within the building including the pipe and drainage systems. However, if the apartments are sold to their inhabitants so that each flat is owned by a different person, in that case the owners are the ones responsible for the maintenance of anything that goes wrong. And this is what happens in most cases, since rental systems are not very common in Egypt (only second hand), but the flats are usually owned by individuals. When there are several owners for the flats, they usually form a union and all pitch in for the renewal of anything that goes wrong within the building including pipe renovation.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Aiman: Currently it is one of two methods; either complete removal and installation of a new one, or the bi pass solution which is done externally. The bi pass solution means that when

the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal).

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Eng. Aiman: For the basic tasks in pipe installation like laying the pipes, covering them, etc., there are no specific trainings or courses needed, the workers just learn on the job from others who have experience. But some of these workers must have certain sets of skills which they need to learn either by lots of experience or through courses. These skills are to be used in customizing the direction of the pipes according to the structure. Pipes and their fittings have certain angles that they are produced in (for example 45 degrees and 90 degrees and so on). What these skilled workers do is they cut the pipes and fittings in special ways in order to fit a customized structure that needs a 33 degree angle instead of 45 for example.

Usually in technical aspects that are of high technology and need specific workers with special knowledge, the company that is selling their product or method of installation is the one that provides the skilled workers for installation.

Question: Are transportation methods for pipes and products such as this one widely available? And are they cheap?

Eng. Aiman: There are so many ways and routes of transportation here in Egypt, and they are very cheap because our labour is much cheaper and all gasoline for vehicles in Egypt is subsidized, so the transportation costs in the end are close to negligible.

Side

note**

The Egyptian market is very huge, there are construction projects everywhere. Some companies come and manufacture their pipes here in Egypt so that they can take them back to their countries and sell them there (an example of a German company was given). They do this because labour and transportation here is so much cheaper. And the benefit they get from this is that they have a backup market as well (Egypt is 80 million + people and so there are a lot of pipes)

Question: Do you have any thoughts or advice on this product?

Eng. Aiman: This product might have a lot of potential for the Egyptian market, but a good feasibility study must be done in order to determine that. If I had any advice for the company, it would be to first license their product with someone already established here in the Egyptian market with a loyal client base. Only sell a few of their product at first, and if it proves to be successful within a certain segment of the pipe market, develop a focused plan on feeding that

market, and possibly even open up their own manufacturing here which will be cheaper for them in terms of labour and raw materials, etc. So the end product will be even cheaper and might be a huge success in the region.

But if their product can be used on cast iron pipes, I can say from now that they can enter the Egyptian market with an open heart and any way they like. They will be an instant success because most of the pipe problems in Egypt are coming from all the cast iron pipes that were used in the past. They will save people a lot of money from switching from cast iron to plastic pipes. And since cast iron pipes are still being manufactured here and used, these manufacturers could even apply this inner coating to their products before installations, which will make the life of the cast iron pipes longer.

Question: What is the competition like between existing firms that are selling the pipes?

Eng. Aiman: The competition is quite intense; most of the manufacturers produce pipes to international high quality standards. So they have to start competing on prices. What they usually do is go to retailers and sell them their pipes at a certain price telling the retailer that, the price they want to sell at is (-\$), and that the retailer gets 20% of the money for example. By putting the competitiveness into the retailer's hands, they are already sure that the retailer will lower his 20% share in order to sell more than other retailers. And so that way they ensure that their products are being sold at cheap prices and they get the profit they want.

Question: What do you think the possible strengths and weaknesses are in this product?

Eng. Aiman: Of course the main weakness of this product is going to be its installation price. But the strength it will have is that it is a quick solution for a common problem here in the market. There are a lot of segments in the market that would probably be willing to pay more for a quicker or less destructive solution that completely removing the pipe and replacing it.

Side

note**

on a cultural level, adapting to a new technology takes time here in Egypt. If they enter on a small scale then it is no problem, but if they are intending to enter on a large scale at first, it will not be very successful because adapting to a new technology or method here in Egypt requires a lot of time and patience, we are not fast paced in technology switching like the west.

Another cultural note is that here some people have the mentality that something new is better than something that was fixed, even if this innovation could prove to be better in quality than buying a new pipe, but in the end the mentality is that it is fixed, it is not new. Types of thinking like these require time and effort to change.

Interview with Dr. Engineer Khaled Elfarra, the General Manager of TARSHEED for Engineering, Business, & Management Consulting

Question: Are there any standards or limitations in order for someone to enter the pipe market with their product or innovation?

Dr. Khaled: They aren't that many limitations or restrictions, but if they are going to be selling products that are going to be used in medium or large construction projects, then their product should be ISO certified. This isn't a very big problem in Egypt since the pipes that are imported are certified, and the majority of pipes are manufactured locally under the license & supervision from international pipe producers.

In some rural areas, there are no pipe standards whatsoever. In urban areas the larger projects that are constructed will most definitely have some minimum standards and requirements for the installation and usage of pipes whereas in smaller projects, there will probably be no standards and it is up to the manufacturing company or owner of the project. In these cases, reducing the cost is usually a higher priority than providing standard quality pipes.

For the rehabilitation process of the pipes in Egypt, larger projects and governmental buildings and institutions require standards, whereas the smaller ones do not require standards at all (single or small group of apartment buildings being built by owner of the land). If a company is the one constructing the apartment building they will of course be obliged to abide by the standards during construction and rehabilitation.

Question: What types of pipes are manufactured here in Egypt?

Dr. Khaled: There are cast iron pipes, and plastic pipes. When it come to the plastic pipes, here in Egypt we manufacture: PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene pipes along with their fittings.

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Dr. Khaled: Yes the majority of pipes are manufactured here in Egypt according to international standards. There still are some pipes however that are imported. Many of the pipes that are manufactured locally are exported due to their high up to international standard quality.

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Dr. Khaled: Of course they are not taken as seriously as in European countries or the United States, but yes, to some extent patents are taken seriously and if someone is caught with copies their business will most probably be shut down immediately.

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Dr. Khaled: In factories, yes. The market for factory pipes and drainage pipes is also very large in Egypt. This is due to the heavy loads they handle on a daily basis. So the pipes need constant attention and renewal. But this means that the material used for the inner coating in this invention will have to be able to handle chemicals rather than water or sewage. If this is possible, they will have a very big market to enter into.

Question: What types of pipes make up the majority of already built urban areas?

Dr. Khaled: The majority of pipes in already built areas like downtown Cairo are made up of cast iron, while the newer areas being constructed, especially in the suburbs of Cairo, are being built using plastic pipes.

Question: Who owns the pipes in the buildings that are constructed?

Dr. Khaled: If we are talking about the majority of buildings within Cairo (apartment buildings), the owners of the apartments are the ones that own the pipes. They usually form a union of people living within the building, and pay a monthly or yearly fee for the renewal or renovation of anything that goes wrong in the building, not just the pipe systems.

Question: What are the solutions used for pipe renewal in Egypt?

Dr. Khaled: Currently it is one of two methods; either complete removal and installation of a new one, or the bi pass solution which is done externally. The bi pass solution means that when the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal).

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Dr. Khaled: Yes, Egypt is very rich in its availability of cheap labour. We have so many workers, but not enough projects for them to work on. They do not require any specific courses if that is what you mean by training. Usually they don't need any kinds of degrees at all, they just learn at the hands of their superiors at work and carry on that knowledge and later teach others that join the team.

Question: Are transportation methods for pipes and products such as this one widely available? And are they cheap?

Dr. Khaled: Yes, there are many cheap ways of transportation here in Egypt, probably several times cheaper of any kind of transportation within Europe. We have much cheaper labour.

Question: Do you have any thoughts or advice on this product?

Dr. Khaled: I think that a product like this would be very successful here in Egypt, but in specific segments of the market. We can assume that the product will most probably be more expensive than renewing the pipes completely here in Egypt, but there are places that would most probably be willing to pay more. Let us say for example that there is a hotel that has a pipe problem, and in the area where the pipe is they use a certain type of ceramics on the floor that is no longer produced, and the stock of ceramics that they have for repairs will not cover breaking out a whole pipe to be replaced, so then they will have to completely renew the whole area to give it a new look to just replace one pipe. But with this, the amount of ceramics broken to repair the pipe will be minimal, and in the end although they will pay more for removing the pipe, they will end up paying less than completely renewing the look of the area. Another thing they will benefit even if they don't have the ceramics problem is they won't have the long process of digging up and breaking stuff so the people staying at the hotel won't be bothered for a long time. That is just one example of many where their product might be successful in Egypt!

Another segment could possibly be in the agricultural industry where they use a lot of PVC pipes (huge market in Egypt) and they get damaged quite often.

Question: What is the competition like between existing firms that are selling the pipes?

Dr. Khaled: The competition is very high; all of the companies are manufacturing almost similar quality pipes.

Question: What do you think the possible strengths and weaknesses are in this product?

Dr. Khaled: Its weakness is most probably going to be in its price. The strength it has is that it is a quick long lasting solution.

Again I stress that they will be very very successful if they target the tourism resorts industry here in Egypt or something that will always require very quick solutions, this is a very big advantage they have and must realize.

And of course another important factor they need to keep in mind is that this coating does not change the properties of the pipes (that they can withstand the same temperatures and pressures and stuff like that after implementation).

Interview with Engineer Jamal Shawwa, the President of Shawwa Plastics

Question: What types of pipes make up the majority of already built urban areas?

Eng. Jamal: The majority of pipes used are cast iron, but recently plastic pipes are almost always used in new projects and buildings.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Jamal: Currently it is one of two methods; either complete removal and installation of a new one, or the bi pass solution which is done externally. The bi pass solution means that when the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal).

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Eng. Jamal: Yes, it is a very big market. But you must keep in mind, that it is also a very cheap market. I highly doubt (assuming the product doesn't work on iron pipes) that this solution will be cheaper than the traditional solution we use now for changing pipes. It costs around 20 LE per meter to change a 6" PVC pipe for example with labour costs and everything.

With cast iron pipes it is really hard and requires a lot of time and effort to change a section that is faulty or cracked, and I repeat that if this works with cast iron, they will be very successful here.

But even if this doesn't work on iron pipes, they can still be successful here, but it won't be guaranteed like with iron. They can target certain segments in the market that maybe need fast solutions and don't care to pay more. Or they want to find a nice solution that will last for their problem. And usually the companies that have this type of mentality and way of thinking in Egypt are the multinational firms and companies.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Jamal: Currently it is one of two methods; either complete removal and installation of a new one, or the bi pass solution which is done externally. The bi pass solution means that when the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal).

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Eng. Jamal: Yes around 90% of pipes are manufactured here in Egypt according to international standards. Maybe the fittings for the pipes might be imported sometimes, but most are produced here. There still are some pipes however that are imported. There is barely any difference in

quality between imported and locally produced, and they are cheaper because of the cheaper labour here.

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Eng. Jamal: Yes, Egypt is very rich in its availability of cheap labour. Most of them in this field learn their trade through experience not by taking courses or trainings. The ones that are trained or have taken courses are very rare.

There are lots of them who are willing to learn how to do new processes and techniques though. It is just a matter of how much the company will be willing to invest in teaching them, and even more importantly on giving them special benefits for keeping them later on so that they don't go off somewhere else and then the company will have to invest in teaching more people.

The ones that are already trained are the ones who usually work for large and important products.

Question: Do you have any thoughts or advice on this product?

Eng. Jamal: An innovation like this one I believe would only be guaranteed success if it would work on cast iron pipes, otherwise they should not enter the market directly, but rather find a company that is in charge of renovations, or established companies to license their product to.

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Eng. Jamal: Their problem won't be with patents. If someone tries to copy their product, they can sue them if they choose to. Usually here in Egypt the government won't exert an effort to stop someone from copying unless there is a serious complaint from the company that has been copied. The problem will be if someone ignorant with no capabilities or resources tries to somehow copy this innovation and sell it, it will of course not work and will cause problems and be removed from the market immediately, but at the same time will have some negative impact on the name of this product. This is what they maybe should worry about more than patenting.

Interview with Engineer Moawad Ragab, the Project Procurement Manager for Arabtec Egypt for Construction S.A.E

Question: Do you have any thoughts or advice on this product?

Eng. Moawad: The way this product could be successful here in Egypt is if they target places like hotels and the tourism industry. And in order to do that they have to really promote themselves and their product to the person in the "Chief Engineer" position at hotels because they are the ones that decide all the methods and make the decisions in renovations and

installations of things. If they can do that, they will be very successful in the tourism section of the pipe market.

Interview with Engineer Mohsen Akram, the Director of Sales of United Plastics and Irrigation Components

Question: What types of pipes make up the majority of already built urban areas?

Eng. Mohsen: Around 60% of current buildings have cast iron pipes, and the other 40% have plastic pipes.

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Eng. Mohsen: Yes, it is a very big market. However I noticed that when you were explaining how the product works that you say they dig a little bit to install it. Here in Egypt, most drainage pipes or pipes in general run from the outside of buildings or through special ducts. There are some areas of course where they run underground. But it is easy to change an external pipe running through a duct when it is PVC.

With cast iron pipes it is really hard and requires a lot of time and effort to change a section that is faulty or cracked, and I repeat that if this works with cast iron, they will be very successful here.

But even if this doesn't work on iron pipes, they can still be successful here, but it won't be guaranteed like with iron. They can target niche markets or specific markets within the industry. Factories for example have their drainage pipes underground and would definitely want to save the time and effort of breaking down through the ground to completely replace a pipe, even if it might cost a little bit more (in case it does cost more).

Question: What types of pipes are manufactured here in Egypt?

Eng. Mohsen: There are cast iron pipes, and plastic pipes. When it comes to the plastic pipes, here in Egypt we manufacture: PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene pipes along with their fittings.

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Eng. Mohsen: Yes around 90% of pipes are manufactured here in Egypt according to international standards. The pipes that are imported are usually done so as part of a project or something, but most are locally produced. There still are some pipes however that are imported. Many of the pipes that are manufactured locally are exported due to their high up to international standard quality.

Question: Do you have any thoughts or advice on this product?

Eng. Mohsen: An innovation like this one I believe would only be guaranteed success if it would work on cast iron pipes, otherwise they would only be focusing on 40% of the market, in which most of it can have any faulty drainage pipes easily replaced due to cheapness of the pipes and of labour.

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Eng. Mohsen: Yes, Egypt is very rich in its availability of cheap labour. Most of them in this field learn their trade through experience not by taking courses or trainings. The ones that are trained or have taken courses are very rare.

There are lots of them who are willing to learn how to do new processes and techniques though. It is just a matter of how much the company will be willing to invest in teaching them, and even more importantly on giving them special benefits for keeping them later on so that they don't go off somewhere else and then the company will have to invest in teaching more people.

Question: Are transportation methods for pipes and products such as this one widely available? And are they cheap?

Eng. Mohsen: Yes, there are many cheap ways of transportation here in Egypt mainly because we have cheaper gas prices and very cheap labour.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Mohsen: Currently it is one of two methods; either complete removal and installation of a new one, or the bi pass solution which is done externally. The bi pass solution means that when the faulty or cracked part of the pipe is figured out in the wall or under the floor, they eliminate it by using an external pipe for that part only (it doesn't look nice, but it is a cheaper way of solving the problem than complete renewal).

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Eng. Mohsen: Of course they are not taken as seriously as in European countries or the United States, but yes, to some extent patents are taken seriously and if someone is caught with copies their business will most probably be shut down immediately.

Interview with Engineer Samy Al-Gamal, the Area Manager of Universal Contracting

Question: Are there any standards or limitations in order for someone to enter the pipe market with their product or innovation?

Eng. Samy: Yes of course there are standards for pipes. The pipes have to be of certain specifications and properties in order for them to be sold for use in certain projects around Egypt. Anyone can start their own company or sell their product as long as they meet the market requirements. There are usually no big troubles or obstacles in this field. But these standards are for projects usually. But if one person is building his own building, there are usually no standards and each person can choose the quality of pipes to be used.

Question: What types of pipes are manufactured here in Egypt?

Eng. Samy: All kinds of plastic and iron pipes are manufactured here in Egypt. We manufacture: PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene and Cast Iron pipes.

PVC pipes are the type used for the majority of drainage systems in recently built projects, whereas cast iron pipes were used in the majority of older projects and buildings.

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Eng. Samy: Yes most of the pipes are manufactured here in Egypt. Even foreign companies now are setting themselves up here in Egypt. Most of the raw materials come from abroad, but the manufacturing and production takes place here in Egypt.

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Eng. Samy: I don't think it is as strict as in the United States for example, but yes there are patents here and they do work. Especially if a foreign company is involved.

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Eng. Samy: Yes it is a very large market. There are so many different projects being built in Cairo right now, and those alone require a tremendous amount of pipes. Most of these projects are put on hold right now though, because the companies constructing them are waiting to see in what direction the country will be going after the presidential elections in June.

Question: What types of pipes make up the majority of already built urban areas?

Eng. Samy: The older areas, like downtown Cairo, Zamalek, Garden City, most areas in Heliopolis and so on, were built using cast iron pipes. While the newer areas being constructed, especially in the suburbs of Cairo, are being built using plastic pipes.

Question: Who owns the pipes in the buildings that are constructed?

Eng. Samy: Usually the owner of the buildings pipes is the owner of the building. And if all the apartments are sold on a permanent basis, then the owners of the pipes are the owners of the apartments.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Samy: According to my knowledge, they could either completely remove the pipe, or they could change the flow of water/sewage for that specific area by using an external pipe (this solution does not look so nice though)

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Eng. Samy: Egypt has a large amount of extremely cheap labour. They are accessible almost everywhere, and at any time. They do not require any kind of training beforehand. They usually learn on the job from others with more experience.

Question: Are transportation methods for pipes and products such as this one widely available? And are they cheap?

Eng. Samy: Yes transportation here in Egypt is no problem. Like I said we have very cheap labour that can work at any time, so this should not be a problem at all nor costly.

Question: Do you have any thoughts or advice on this product?

Eng. Samy: I think this product will only be successful in areas that have landscapes that cannot be destroyed for one reason or another. But other than that I do not think that this product will work here in Egypt.

Question: What do you think the possible strengths and weaknesses are in this product?

Eng. Samy: I cannot say much about its strengths other than it is a neat solution, very clever. But I just don't think this will work here in Egypt. I think its main weakness will be its price. And this will prevent it from entering the Egyptian market because there will be cheaper solutions, so why would anyone use this?

Interview with Engineer Mohamed Mostafa, the founder and General Manager of MASTER for International Trade & Construction

Question: Are there any standards or limitations in order for someone to enter the pipe market with their product or innovation?

Eng. Mohamed: In rural areas, there are no pipe standards whatsoever. The types of pipes that are used are not up to any standards, but these people usually have no other choice because they can't afford anything else, and even those who can afford are uneducated and don't know any better. In urban areas the larger projects that are constructed will most definitely have some minimum standards and requirements for the installation and usage of pipes whereas in smaller projects, there will probably be no standards and it is up to the manufacturing company or owner of the project. In these cases, reducing the cost is usually a higher priority than providing standard quality pipes.

Question: What types of pipes are manufactured here in Egypt?

All types of pipes are manufactured here in Egypt: Cast Iron, PVC, UPVC, CPVC, Polypropylene, and High Density Polyethylene pipes along with their fittings.

Question: Are most pipes used in the Egyptian pipe market manufactured here in Egypt?

Eng. Mohamed: Yes, most pipes are manufactured here in Egypt whether plastic or cast iron, but the really large pipes are usually imported and not manufactured here.

Question: What types of pipes do customers prefer to buy here in Egypt, locally manufactured or imported?

Eng. Mohamed: They almost always prefer to buy the locally manufactured pipes because they are cheaper, and the quality is not less. That is why everything is produced here, the end product is cheaper. Only projects that require very highly technical stuff are the ones that usually use imported pipes (but even then not all of them do so).

Question: The company that I am writing the thesis for are afraid that someone could copy their solution for pipe renewal if they enter the Egyptian market, is that something they should be worried about? Are patents on such products taken seriously here?

Eng. Mohamed: No, that is not something they should worry about. It is very hard to have the financial capabilities to copy stuff like this here.

Question: Is the pipe renewal market big in Egypt? Do a lot of pipes get cracked, broken or reach the condition where they need to be changed?

Eng. Mohamed: Yes, it is very big! There are pipes being renovated or renewed every single day. We are 20 million living in Cairo alone, imagine how many buildings and factories and companies there are. Yes of course it is a huge market.

Question: What types of pipes make up the majority of already built urban areas?

Eng. Mohamed: The ones mainly used for drainage systems of projects being built since the 90s are PVC pipes and High density polyethylene pipes. But all the projects and buildings built before that use cast iron pipes. Although some projects still use cast iron pipes until today.

Question: Who owns the pipes in the buildings that are constructed?

Eng. Mohamed: Sometimes the owner of the pipes is the owner of the building, whether a company or individual. But most of the times after the apartments are sold, the owners of these apartments are the ones who own the building pipes and are responsible for their maintenance and so on.

Question: What are the solutions used for pipe renewal in Egypt?

Eng. Mohamed: The solutions they use now for faulty pipes are either complete removal or a sort of external passage solution where they make that section of the pipe inside the wall or under the floor obsolete.

Question: The labour workers that install and renew pipe and drainage systems in buildings, are they easily available and accessible in Egypt? Do they require specific training to be able to carry out such jobs?

Eng. Mohamed: Egypt is very rich when it comes to this type of labour. They are very accessible and relatively cheap. And they do not require any kind of training at all, they usually learn on the job from their superiors.

Question: Are transportation methods for pipes and products such as this one widely available? And are they cheap?

Eng. Mohamed: Transportation is something they don't even have to think about. It is so easy and so cheap here in Egypt. They will have no obstacles or troubles in this area at all.

Question: Do you have any thoughts or advice on this product?

Eng. Mohamed: If they want to enter the Egyptian market with this product, I would suggest that they take part in yearly conferences that take place here in Egypt such as "Interbuild". This will help them know who is available in the market and with what products, and they can display the product they have, and could license or sell their product through that.

From my point of view, the best way for them to be able to sell or license such a product here in Egypt apart from taking part in these conferences, is to go to a business or construction consulting firm here in Egypt (the ones that develop design for projects for example). They will already know everything about the market and will have very good advice on the strategies they could use for entry.

Question: What do you think the possible strengths and weaknesses are in this product?

Eng. Mohamed: I cannot say really because I don't know much about it, but from what it seems is that this new method has a lot of good strengths if everything you say is true, it will save a lot of time, money and effort. However, I believe that these strengths will only be effective if this invention preserves the properties of the pipes. So that when it is installed, the level of pressure or temperature that can be withstood in the pipes doesn't decrease for example.

Another point I want to add is that if this method is applicable to cast iron pipes, like almost all the pipes used prior to the 90s here in Egypt, I can guarantee you this product will be extremely successful. Iron pipes are quite expensive and replacing them is a tough process, so by renewing them this way it will save a HUGE amount of money and time and effort, much more than with the plastic pipes.

Other than that I think it is a great invention and could prove to be very successful here if the right strategies and proper connections are made.

Interview with Ashraf El-Alfy, the Financial Controller for Arabtec Egypt for Construction S.A.E

Ashraf El-Alfy: One of the ways they could enter the Middle Eastern market in general, especially Gulf countries, is through companies that buy renovating contracts. They do not build anything, but their sole purpose is to fix or renovate anything in already build places, pipes included. So if they are able to promote their product to these companies, train their employees how to use them, they could be quite a success in the whole region. These types of companies have been present for quite some time in the Gulf countries, and have recently begun to spread all over the rest of the Middle East and North Africa.

Appendix 3 – Internal answers

Interview with Mr. Project

Mr Projects specialty is to make the products better. Help the customers if they have any problem.

Resources

Tangible

1. **Financial**

- The amount of cash available for investment within the company?
- The debt to equity ratio?
- The access to securities, such as insurance guarantees?

2. **Physical**

- How much of the equipment does the company own?
- How many plants does the company own?
- What other assets does the company owns?

Intangible

1. **Technology**

- Is the innovation patented? Local level or global level?
- Is the company protected with some sort of a copyright?
- Does the company have any trade secrets? Yes/No

2. **Reputation**

- Is it a good reputation of the brand?
It is too early to say that, but the people I work with know what it is. It is hard to say. But the customers using the product does not get in too any problems at the moment when they are using the product.
- Do they have any strong ties with other companies within Sweden and outside of Sweden?
The ties are long term and strong.
- Do you have a loyal customer base? Inside or outside of Sweden?
Some of them are, more than others.

3. **Culture**

- What type of culture does exist within the firm? Entrepreneurial culture or is it reflected by other values?

It depends, I know exactly what to do and we must do it like that and there are sometimes short of an amount of time and it has to be done.

Human

1. Skills

- Do the employees have any sort of higher education?
We must have an education with hard-plastics and a license within that area. One cannot work with hard-plastics if they do not have a license to work with it.
- Do the employees possess any sort of technological qualification?
- Are the employees professional enough in terms of being at time, communication with customer, language used?

2. Motivation

- How high is the consistency of work done by the employees?
 - How linked is it to motivational factors within the company?

It is more up to the other companies to motivate their employees.

- For how long has the employees worked within the company?

Capabilities

1. Proficiency of predevelopment activities

- Do they have the resources and capabilities required to carry out the predevelopment activities before entering a new market? (Market research, etc.)

2. Proficiency of market-related activities

- How good are there marketing channels and marketing activities?

3. Proficiency of technological activities

- How high is the quality of the product made?
It is high quality, if the installation has gone the right way it is a good product.

4. Marketing Synergy

- How much 'old' knowledge is being used when marketing the products?

5. Technological Synergy

- How much 'old' knowledge is being used when developing there technology?
We always try to improve the product and if something goes wrong it is going to cost a lot of money. I always test new ways of improving the product.

Interview with Mr. Sales

Resources

Tangible

1. **Financial**

- The amount of cash available for investment within the company?
At the moment, not that much cash. We are looking to take in more owners to get more capital so that we can expand (invest).
- The debt to equity ratio?
No debt at all. We don't need so much cash when entering a new market with our business model we receive a license fee and get more than enough to be able to enter and give the support needed
- The access to securities, such as insurance guarantees?
Normal business insurance, no extra or special type of insurance

2. **Physical**

- How much of the equipment does the company own?
The company pretty much outsources everything, barely anything used is owned.
- How many plants does the company own?
- What other assets does the company owns?

The company rents and outsources most things; only a few machines that are used for educating the other companies about our products are owned. We don't need those much physical assets, which is good for us.

Intangible

1. **Technology**

- Is the innovation patented? Local level or global level?
We have different patent applications: The one approved is for the Swedish market, then the international one is expected to be approved this year or the beginning of next year.
- Is the company protected with some sort of a copyright?
Yes we have copyrights on our product.
- Does the company have any trade secrets? Yes/No
Yes we do, it is basically what we are selling. The knowledge and experience that our mentors have gathered from 30 years of working in this field. The customers are buying security, they know they have someone holding their hand while they are advancing and growing.

2. Reputation

- What kind of brands does the company possess over?
We have registered our product as a brand in Sweden and internationally, that is the only one we are using now. We also registered our name as a brand, but the product's name is the one we are using so we will probably change the company name to that.
- Do they have any strong ties with other companies within Sweden and outside of Sweden?
Yes we have suppliers and we have companies that we work with for technical development, and customers we work with both in Sweden and abroad
- Do you have a loyal customer base? Inside or outside of Sweden?
They are bound by their agreement, so they don't really have a choice. We don't have many customers, but we provide them with the support they need and fulfill the contracts, and it is possible to renegotiate the contracts later.

3. Culture

- What type of culture does exist within the firm? Entrepreneurial culture or is it reflected by other values?
It is a small company that is driven by entrepreneurs. Decisions are made very quickly if needed because of the small environment

Human

1. Skills

- Do the employees have any sort of higher education?
We always need people with special skills, and that is why we hire them. They must have some special skill that would help us progress.
- Do the employees possess any sort of technological qualification?
It depends on what they will work with. If they are responsible for the technical areas, then yes of course they have to and they must also have some kind of idea about this industry as well.
- Are the employees professional enough in terms of being on time, communication with customer, language used?
We try to be as structured as possible since we are the suppliers to our customers and they need things done on time, and give the best possible service. We are not 100% there yet, but we are getting there and this will be important in getting larger customers later on.

2. Motivation

- How high is the consistency of work done by the employees?

- How linked is it to motivational factors within the company?
We talk to each other, everyone talks to everyone. We are a small group and have the same goal. We don't have a special program but we might have something like that in the future when we grow.
- For how long has the employees worked within the company?
First employee started one year ago. The other 2 started January 2nd this year.

Capabilities

1. Proficiency of predevelopment activities

- Do they have the resources and capabilities required to carry out the predevelopment activities before entering a new market? (Market research, etc.)
It depends on what country. With some we do it ourselves, and with others we get help and outsource.

2. Proficiency of market-related activities

- How good are there marketing channels and marketing activities?
The marketing is not like traditional marketing. The type of marketing your thinking about is done by the license holders. Our type of marketing is usually done more through connections and social interactions. We do our marketing through meeting other investors and companies and talk to them.

3. Proficiency of technological activities

- How high is the quality of the product made?
Yes it is considered as a high quality product.

4. Marketing Synergy

- How much 'old' knowledge is being used when marketing the products?
We have a small portion of the marketing material we bring, but we learn as we go. Of course we learn from our previous mistakes.

5. Technological Synergy

- How much 'old' knowledge is being used when developing there technology?
Yes, we have continuous technological development. We have a lot of projects that we still want to develop. We spend a lot of money on developing these researches, but we need more capital to make this even better.