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Master Degree Project in Innovation and Industrial Management

Commercialization Strategies in an Innovative Technology Start-up

A case study of Repiper International AB

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ABSTRACT

This master thesis aims to outline the steps and procedures that a technology-based start-up needs to consider before entering a new foreign market. Studying the Swedish company Repiper International AB, this paper attempts to estimate the opportunities and challenges related to the commercialization process of Repiper's innovative method to renovate the drainage system inside the buildings. Analyzing previous theoretical sources, the author develops a theoretical framework in order to determine a successful commercialization strategy. The analysis is based on both the internal forces, as the firm's resources and capabilities, and the external factors, referred to as the Italian competitive environment. To test the validity of the framework, the Italian market was selected in agreement with the company. Recommendations for the commercialization and entry mode decisions into the Italian market are provided to the company management.

Keywords: Commercialization strategy, Technology-based start-up, Entry mode

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APPENDIX 1

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1. INTRODUCTION

This chapter is aimed to introduce the reader to the purpose of this master thesis and to provide an insight of the concerned topic.

This master thesis results from the cohesion of different topics that eventually merge into a specific research question. Two main aspects induced the researcher to choose this subject. Firstly, the increasing attention addressed to buildings renovation in the developed countries. Secondly, the relevance of commercialization and internationalization strategies as two of the most complex challenges faced by a company throughout its life span.

Considering the first matter above discussed, there is a general trend, spread across the European nations, which shows how buildings renovation captured the attention of the policymakers during the last twenty years. In 2010 it was issued in Europe the “Energy Performance of Buildings Directive” (EPBD) which introduced the requirement of implementing energy efficiency measures for renovation in order to encourage the efficient use and the reduction of resources (Official Journal of the European Union, 2010). This directive is the last step of a long process undertaken by the European Union to stimulate the renovation of already existing buildings and to encourage the Member States to establish policies for the renovation of national building stocks.

The building renovation matter can also be analyzed from a wider perspective. Buildings are the lifeblood of society, the places where people undertake most of their daily activities. In Europe people spend 90% of their time in buildings and for the households the spending related to their dwellings represents the largest expenditure (BPIE, 2014). Several reasons can be addressed to make our buildings efficient, safe and healthy places. The World Health Organization has estimated that 10-50% of the indoor environments where people live in Europe are damp; moreover humid buildings are known to cause health problems such as allergies and asthma (BPIE, 2014). From this previous analysis it seems clear how much the building renovation topic is essential when considering both a macro and micro perspective. On one hand this phenomenon can affect the country level of efficiency and the aggregate expenditure of the

households. On the other, the data above discussed underline how buildings conditions can directly affect the health of people.

The increasing attention dedicated to the house improvement sector is also confirmed by the aggregate market data. The European home improvement market grew by 1.3% in 2014 to reach a value of \$214.4 billion and the compounded annual growth rate of the market was 1.9% in the period 2011-2014 (MarketLine, 2015). The home improvement market is composed by the following segments: Decorative materials, Electric Hardware, Hardware, Non-decorative materials and Tools. For the purpose of this thesis the attention is pointed to the Non-decorative materials segment which includes, among the others, plumbing supplies which are the object of this research project. Moreover the Non-decorative material segment was the market's most profitable in 2014, with total revenues of \$81.5 billions which are equivalent to the 38% of the market's overall value (MarketLine, 2015). The compound annual growth rate (CAGR) for the period 2014-2019 is forecasted as 2.1% (MarketLine, 2015) but the results strongly depend on the overall recovery of the European economy.

The second pillar this master thesis is built around regards the commercialization strategy for an innovation and the different entry strategies to export it in foreign countries. As explained by Slater and Mohr (2006), the capability of a company to successfully develop and commercialize a technological innovation depends on the interaction between a firm's strategy orientation, its selection of target market and the way it implements its market orientation. According to the authors these are the main factors which affect the successful or unsuccessful commercialization of a technology-based innovation and the probability of remaining successful over time. One of the most critical aspects when dealing with technological innovation is the so called *innovator's dilemma* discussed by Christensen (1997). With this expression Christensen describes the difficulty of market leaders to divert resources from the development of sustaining innovations to the development of disruptive ones. Strictly linked to Christensen's work is the contribution by Geoffrey Moore in *Crossing the Chasm* (1991). Moore underlines that the difficulties of commercializing new technologies do not regard the diffusion among the early adopters but the change in the marketing

approach so that the mainstream costumers can accept and start using the new product. To sum up, *innovator's dilemma* and *crossing the chasm* represent two of the most challenging issues when dealing with new technology-based products.

Moreover, when considering these topics, it clearly emerges how commercialization assumes different features whether the company aims to commercialize technological innovations or goods in the product market. In the first case an important factor to take into consideration is the commercialization of knowledge assets. Besides exploiting their knowledge to develop and sell products or services, companies can also commercialize their knowledge assets by licensing their technologies to other organizations. When dealing with knowledge commercialization the emerging issue regards the imperfections in the so called market for knowledge. Lichtentaler and Ernst (2007) illustrate how, as result of the inefficiencies in this market, commercializing knowledge assets, such as out-licensing a technology, is much more difficult and complex than commercializing goods in the product market.

It is necessary to consider another challenge when approaching the commercialization of technology-based products. It regards the market for ideas. To explain this concept Gans and Stern (2003) use the experience of Robert Kearns: the independent inventor of the intermittent windshield wiper in the 1960s. He was unable to commercialize the product on his own so he approached senior engineers at the Ford Motor Company and disclosed both the operating principles and functionalities of the invention. After some negotiation, Ford rejected a licensing agreement with the inventor but introduced a similar technology into the market shortly after. For over twenty years Ford and other automakers declined to pay Kearns royalties on his invention. This example describes how challenging can be for inventors or start-ups to translate promising technology into a stream of economic returns. In this situation the problem is not the invention but its commercialization. Researchers frequently discussed about the best commercialization strategy for new technology-based firms. Obviously an unique answer does not exist but researchers agree on two main options to commercialize innovations. According to Kwak (2002) these companies can either compete with incumbents throughout the product market or they can cooperate with established organizations by selling their technologies throughout the market for ideas.

In the latter situation, possessing at least one patent, an indicator of relatively secure property rights, increases the probability of cooperation with an established firm.

The company

Repiper AB, previously Röranalysgruppen i Europa AB, is a Swedish company located in Mölndal, in the outskirts of Gothenburg. Founded in 2008 the firm currently operates in the home-improvement industry. The company is part of a group composed by other seven organizations. ISAB Intressenter AB is at the head of the group. This company in turn controls six other firms: ISAB Ventilation, ISAB Rörinfodring AB, Göteborg Sprutrelining AB, Repiper AB, ISAB Indoor solutions AB and Kretskortet AB. One of these companies, Repiper AB, owns both the brand and the patents of Repiper and it was divided in two separate entities at the end of 2015. Repiper Nordic AB whose purpose is the management of the local market and the Scandinavian area. Repiper International AB, the last to be founded, is dedicated to international markets to expand the company activities worldwide.

The company does not directly produce the technology that it commercializes. This in turn is manufactured by other external companies. Repiper currently runs its business through two business models: user agreements and licensing agreements. As above explained by Kwak (2002) the second option represents one of the most common strategies for small companies willing to commercialize their innovation. Indeed Repiper provides its licensees with a complete package in order to perform installations of the new drainage systems.

Moreover Kwak (2002) stresses how the probability of being successful using the licensing business model is strictly linked to legal protection related to intellectual property rights. Repiper's case can be analyzed considering this specific framework. Repiper AB owns three Swedish patents for its technology. Further the company successfully applied for one of the patents at the European Patent Office (EPO) and at the United States Patent and Trademark Office (USPTO). The enlargement of the legal protection in Europe and USA reflects the company intention to export its innovation outside the Swedish borders.

From the technical point of view, Repiper's technology provides a complete solution for renovating the buildings drainage system. The patented method is based on a technology for the renovation of out-dated and damaged drainage pipes. The output is classified as a new pipe with a service life of over 40 years. Moreover this technology is installed at a fraction of the price and time it takes to perform pipe renewal in the traditional way. The application of this method is also related to environmental consequences since the drainage system is renovated instead of replaced. This in turn results in a tightly sealed, seamless pipeline system without leakages and discharge of polluted waste water.

To allow the new lining to work and to assure good quality, Repiper's method for the renovation of buildings drainage system is structured in five sequential steps:

1. Preparations: the old pipe is inspected using a video camera to analyze the remaining service life and conditions of the existing drainage system. This phase is fundamental to understand whether the next steps are feasible or not. If the inspection provides positive results the work planning is scheduled in order to progress quickly, smoothly and with minimal disruption to the tenants. At this point the pipe system has to be cleaned since the deposits can cause the pipe to corrode. Furthermore the accumulation of deposits can reduce the area where the water can run freely. This cleaning phase is fundamental to restore the original dimension of the pipe, to scrape the surface clean and to remove deposits which might have negative effects on the installation of the new pipe. Once this process is over and the workplace is prepared, the curing plastic (thermosetting polymer) can be mixed. It is made of two components, one resin component and an hardener; when they are mixed an irreversible chemical process begins and it hardens the plastic. The flexible lining is impregnated with the curing plastic and it is pressed out before the lining is ready to be installed in the pipe to prevent that the amount of curing plastic is spread throughout the casing.
2. Lining the soil stack: a felt-reinforced flexible casing impregnated with a curing plastic is used for lining. The casing is pressed into the pipe and along the walls with the help of compressed air and the old pipe is used as a casting form. The

flexible casing is kept inflated while the plastic hardens. When the new stack is finished, holes are milled out for the branch lines which are then reinforced before they are lined in the third step.

3. Lining branch pipes: this phase is particularly critical since connections between branch lines and soil stacks are especially exposed areas. This is the part where leakages and cracks often occur. A bespoke flexible casing impregnated with curing plastic is installed at the connection point between the stack and the branch lines.
4. Lining branch lines: once the first three steps are completed, it is time to line the branches from the kitchen and the bathroom to the soil stack. In this phase the floor drain is inspected since leakages here are a common reason for moisture damages. Furthermore a change of floor drains is often recommended.
5. Lining the main drain: when the entire drainage system of the building has been renovated the work is completed by lining the main drain of the building to the city's sewage network. Main drains are frequently affected by ground settings, dislocations and the encroachment of tree roots. These events lead to leakage of unclean waste water into the surrounding grounds.

After all the phases are completed a new sewage system has been created without removing the old pipes or breaking any wall in a short period of time. With regular maintenance the new drainage system will work for at least another forty years.

1.1 PROBLEM DEFINITION

Repiper is a company that bases its business on the exploitation of its patented technology. The innovative method allows the Swedish firm to differentiate from the incumbents in the drainage system renovation field. The Repiper-method proved higher performances with respect to the alternative methods: the traditional replacing and the coating technique based on injection. This aspect is confirmed by the attempts of some competitors to acquire both the whole company and the patents at the basis of Repiper's business.

In order to collect the revenue streams deriving from its innovation, Repiper started the commercialization process using two approaches: user agreements and licensing agreements. To date Repiper has licensed its innovation to two companies in Sweden

and one in Germany and it signed a user agreement with an Icelandic firm. The internationalization process is proceeding fast as confirmed by the ongoing negotiations to export the technology to California. The decision to split the company between Repiper Nordic AB and Repiper International AB exactly reflects the willingness to expand its international footprint.

To sum up, Repiper has already developed a technology that demonstrates to be functional and profitable. The real issue lies in how this technology can deliver its biggest economic value by analyzing its commercialization and internationalization strategies.

More specifically when dealing with a new market the company faces two main challenges strictly related to each other. The first one regards the entry mode used to enter the foreign market in order to completely exploit the commercial opportunity. To date the company has used two approaches to international markets: licensing and user agreement. Nonetheless the company's management claims to be open to every entry mode, depending on the different conditions and opportunities, except the simple export. Earlier in the chapter this problem has been explained and it will be deeply examined in the theoretical framework. Secondly, in case the company chooses a cooperative strategy, the other major challenge concerns the identification of the best partner in the foreign market. As Joakim Hedelin, CEO of Repiper Nordic AB and Repiper International AB, explains the best partner is not always the biggest player in the foreign market. Indeed the company is interested in determining the company that best fits Repiper's characteristics and its technology and the one with the best local knowledge of the market, considered by the CEO as one of the most critical factors.

1.2 RESEARCH QUESTION

As explained before, although it was founded eight years ago, only now Repiper is starting its international expansion in the buildings renovation field. After its technology proved to be profitable and effective in the Swedish market, the company is currently starting its internationalization process. Therefore the purpose of this thesis is not to analyze the intrinsic features of this technology but on the contrary to investigate how Repiper can increase its international footprint. In order to help the

company to face this challenge, the researcher tried to develop a conceptual framework to facilitate Repiper when dealing with the commercialization of its products into new markets. Together with the company the topic was narrowed down to focus on a specific opportunity: the analysis of the Italian market to develop a commercialization strategy. Therefore the overall thesis aims to answer the following research question:

“What is a successful commercialization strategy for Repiper to enter the Italian market?”

1.3 RESEARCH FOCUS AND LIMITATIONS

Throughout this initial chapter both challenges were described in relation to technology commercialization and to the general features of the company. Moreover, together with the supervisor and the company itself, the researcher chose to narrow down the topic of the research project in order to provide more specific recommendations which could potentially be applied in the real business.

It was not possible to analyze the internationalization process as a whole considering the resources and time constraints; therefore the decision was to select a specific country and analyze how this technology could be exported there.

Thus the Italian market was chosen in accordance with the ideas and the beliefs commonly shared with the company. There is a main reason behind this decision. Repiper had already tried to export its technology into the Italian market and to establish relationships with local companies. Nonetheless these bargaining activities were not successful and the company did never enter this market. At the same time during the preliminary phases of this research thesis Repiper’s management explained that Italy is still considered as a potential profitable market. That is why the final decision was to write about Italy and the commercialization strategy in this market.

1.4 THESIS DISPOSITION

The thesis is organized in six chapters as follows:

1. Introduction
2. Theoretical framework
3. Methodology
4. Empirical Findings
5. Analysis
6. Conclusions

The introduction is aimed to present to the reader the purpose of this thesis and to explain the significance of the research project and the research question to answer.

Subsequently the theoretical framework section is focused on the analysis of the existing literature regarding the topic of interest.

In the methodology, the research strategy, design and method employed to conduct this research are described.

The empirical findings chapter regards the collection of data both within the company boundaries and through external sources to manage the Italian market analysis.

In the analysis the theoretical overview and the empirical findings are collectively analyzed in order to extrapolate relevant information.

In the conclusions, recommendations are provided to Repiper's management on the way to face the commercialization strategy and which entry mode should be selected for the Italian specific case.

2. THEORETICAL FRAMEWORK

This chapter analyzes previous studies and elaborates regarding the research topics. The underlying aim is to provide the reader an overview on the theoretical aspects at the basis of this paper.

As briefly explained in the introduction, the commercialization and internationalization process for a technology-based start-up is not an easy and smooth path. Indeed these topics received the attention of many researchers during the last years, confirming the relevance of the subjects. Gans and Stern (2003) underline how, since the 1980s, the amount of investments in technology entrepreneurship has drastically increased. Moreover, as Burgel and Murray (2000) stress, most of these companies looks at international markets since their first steps; thinking internationally has currently become a mantra for every aspiring successful organization.

The purpose of this chapter is to analyze these topics taking into consideration the Repiper's point of view. As many companies that have developed a new technology, Repiper is also targeting international markets to grow and flourish in the immediate future. In order to provide useful recommendations to the company's management, this chapter is organized considering both internal and external factors affecting these challenges. Chandler and Hanks (1994) confirm that new venture performance is mainly related to market attractiveness and resource-based capabilities which, in turn affect the company's competitive strategies.

In order to accomplish this task, two main research topics require to be deeply examined. They are *commercialization strategy* and *entry mode strategy*. From the analysis of the previous researches, these subjects appear to be strongly connected to each other. Therefore these two themes are scrutinized to provide the reader a solid theoretical framework. Moreover, once the analysis of commercialization and entry strategies is completed, the most relevant results are linked and merged in order to develop a conceptual framework specific for the Repiper's case study. The conceptual

framework is based on two fundamental pillars as suggested by previous studies. The one is related to Repiper's internal structure and takes into consideration its resource-based capabilities. The other one inspects the external forces and it is mainly based on the analysis of the home-improvement Italian market. This conceptual framework, derived from the most relevant theoretical findings, constitutes the guideline in the drawing up of this research paper.

2.1 COMMERCIALIZATION STRATEGIES

Researchers and academics have discussed and still question whether the best commercialization strategy for start-ups exists and what it is (Kwak, 2002). This topic increased its importance due to the emergence of the start-up phenomenon in the last two decades. As explained in the first chapter, when considering technology entrepreneurship, after the development of promising inventions and technology, the huge challenge is the translation into economic returns for the shareholders (Gans and Stern, 2003). Considering this viewpoint, the commercialization strategy can be evaluated as the strategy a company pursues in order to capitalize its investments.

Literature also investigated which are the factors that distinguish the development, launch and commercialization of successful products and failures. Cooper and Kleinschmidt (1987), for instance, aim to determine the most influencing success factors that separate winners from losers. They conclude how product superiority is the number one factor influencing commercial success together with project definition and pre-development activities. Nevertheless, although Cooper and Kleinschmidt (1987) derive significant managerial implications, following studies have demonstrated other important success factors, demonstrating a lack of agreement on this topic. Thus the purpose of this paragraph is to shed light on the different approaches and opportunities that different commercialization strategies imply together with their drawbacks and benefits.

Conversely, scholars seem to agree on other aspects related to the commercialization matter. There is a diffused consensus that commercialization strategy assumes different

features when dealing with disruptive or sustaining innovations (Kassicieh et al., 2002; Slater and Mohr, 2006). In particular Kassicieh et al. (2002) underline how firms trying to commercialize these distinct kinds of technology focus on different aspects of their business. While firms working with sustaining innovations concentrate more on revenue generation and cash flow potential, the others seem to understand the need to develop the supporting infrastructure to realize new products. Moreover during the last years several studies investigated the new product development and commercialization approaches in large firms compared to SMEs (Christensen et al., 2002; Mosey, 2005). The implications deduced by these authors underline that large firms tend to innovate by enhancing the performance of their existing products while SMEs tend to compete with the larger incumbents by using novel and often simpler technologies.

As already explained in this paper, the attention of this thesis is addressed to the commercialization strategy of a new technology-based firm in order to provide beneficial recommendations to Repiper's management. When considering the commercialization matter related to start-ups, it is acknowledged how these companies face several challenges when entering competitive markets. Henderson (1999) for instance, refers to them as liabilities of newness and smallness. Considering the several issues faced by these companies, Gans and Stern (2003) define two markets that early-stage companies can operate in: market for products and market for ideas. In the market for products the company develops all the complementary assets that are necessary to compete and to reach its customers. In the market for ideas, by contrast, the company is focused on the development of a certain innovation and its technological features and it partners with another organization for the introduction and commercialization of the product. In this second option the company chooses to commercialize its knowledge assets, for example by licensing out technology. The two authors (Gans and Stern, 2003) stress that the commercialization strategy for innovative start-ups often regards a trade-off decision. The firm has to choose between establishing a new value chain, and therefore competing against already existing companies, or it can pursue a cooperative strategy by leveraging an existing value chain and earning returns through the market for ideas. The first option implies a

higher commitment for the company which has to develop the complementary assets necessary to bring a product on the market: production, marketing and distribution facilities and complementary technologies required by the customers.

These two different strategies were also analyzed by Knockaert et al. (2013). They refer to the market for products approach as “market strategy”. On the other hand they define “technology strategy” the one linked to the market for ideas where companies choose to collaborate with other organizations. Considering this alternative decision, Gans and Stern (2003) underline how different markets imply different strategies to profit from innovation. In the product market the start-up must develop key capabilities and acquire complementary assets to offer a novel and different value proposition to the customer. Moreover, when choosing this option, the company should be ready to face the competitive strategies by the incumbents. These include aggressive price competition and the possibility of imitation. In other words, a market strategy requires an integrated value proposition and the ability to face the reaction of established organizations in the industry. On the other hand the technology-based startup can choose a cooperative technology strategy. According to Gans and Stern (2003), at the bottom of this strategy there are the identification of the potential partner firm and the bargaining of the agreements which allow the technology to reach the market. This cooperative approach can take place under several forms. The two extremes are represented by licensing and acquisition. When a company chooses to license its technology it sells the right to use the technological innovation, provides technical assistance according to the agreement terms and receives a certain fee or royalty. In this case the two companies cooperate in the commercialization but they maintain organizational independence. In the other extreme, acquisition, the start-up cedes the control over its organization to an established firm. However several options exist in the middle of the extremes. These are intermediate contracting relationships such as joint venture, strategic and educational alliances and milestone financing (Roberts and Berry, 1985, Oxley, 1997).

When approaching this dichotomous decision it is fundamental to underline the previously mentioned challenges faced by the technology-based start-ups. Because of their limited financial and human resources these firms can pursue only a limited range of options. As sustained by Bhide (2000) these companies tend to lack the required

means to pursue both the strategies and they are frequently forced to choose between one of them.

Gans and Stern (2003) develop a framework aimed to shed light on the decision between operating in the market for products and the market for ideas. In this pattern the strategy is strictly linked to the commercialization environment. With this term the authors mean the microeconomic and strategic conditions that start-ups must face to translate an idea into an economic stream. More specifically they focus on two crucial elements of the commercialization environment: Excludability and Complementary assets. These two aspects have ancient roots in the matter of technological innovation. Both the topics were discussed by Teece (1986). The excludability factor, also called regime of appropriability, refers to the environmental factors that govern an innovator's ability to capture the profits generated by an innovation. According to Teece (1986) the nature of the technology and the efficacy of legal mechanisms of protection, such as patents, are the most important determinants of this regime. The appropriability regime can either be "tight" or "weak". The former indicates that the innovation is relatively easy to protect and the innovator is almost assured of translating it into economic value for a certain period of time. On the other hand, when the regime is weak, the technology is not easy to protect and the company must resort to business strategy to keep away competitors and potential imitators. Considering this dimension, Gans and Stern (2003) refer to excludability as the ability or not to preclude the effective development by an incumbent with knowledge of the innovation. With respect to complementary assets, Teece (1986) claims that successful commercialization of an innovative technology requires that the know-how developed by the company has to be used in conjunction with other capabilities or assets. It is frequent that the complementary assets indispensable to commercialize an innovation are under the control of the incumbent companies. Gans and Stern (2003), when referring to Complementary asset environment, consider to what extent the incumbent's complementary assets contribute to the value proposition of the new technology.

As explained above, new technology-based firms face different challenges and liabilities. In their article Knockaert et al. (2013) analyze how public policy measures

can help to overcome these issues by identifying the companies' need for innovation support services. By testing their hypothesis they deduce relevant implications. They find that firms pursuing a market strategy particularly need market-related services. Indeed this kind of companies needs to build marketing and distribution channels and they compete with established firms. Moreover the authors disclose how companies operating in the market for products necessitate soft services. With this term they intend general types of support such as seminars and information provision, education and teaching programs and consulting. Knockaert et al. (2013) explain this result as related to the necessity for these companies to gain access to other information, knowledge and networks oriented towards the commercialization of their innovation. Conversely, when considering start-ups focused on technology strategy, they find different results. These companies seem to require mainly finance-related services. They may need significantly higher investments in skilled labor and machinery before a financial return can be generated. On the other hand, firms operating in the market for products may be able to finance part of the development through internal cash flow generated by early sales.

The last section of this paragraph is aimed to investigate a specific challenge related to the market for ideas or market for knowledge. To deeply comprehend this topic it is necessary to shed light on the fundamental asset implied in this case, that is knowledge. The most fundamental friction that discourages the exchange of knowledge on the market is represented by the *paradox of disclosure* (Arrow, 1962). Simply speaking, this paradox describes how information, in its pure and embodied form, cannot be evaluated by a buyer until it is disclosed, but then the buyer has no reason to pay for it because he or she already knows it. As Gans and Stern (2003) underline, disclosure increases the buyer's valuation of the innovation but decreases the inventor's bargaining power. Considering these premises, Lichtentaler and Ernst (2006) analyze whether firms can overcome the intrinsic imperfections in the market for knowledge by actively developing reputation. They illustrate how the external knowledge exploitation has increased its importance during the last years. Furthermore Lichtentaler and Ernst (2006) find evidence of how reputation appears to be more important in the commercialization of knowledge than in the trading of goods

and services. More specifically they aim to investigate whether firms may increase their performance in licensing out technology by initiating market pull effects due to the reputation of being a valuable knowledge provider. The paper by Lichtentaler and Ernst is in line with the previous mentioned authors when considering the identification of knowledge customer as the main challenge in commercializing knowledge assets. Being more specifically, Lichtentaler and Ernst (2006) find positive results that support four of their hypothesis. Firstly, they find that the more centralized the organizational approach to externally leverage knowledge is, the higher is the firm's reputation in this area. Secondly, firms that exclusively dedicate to externally leveraging knowledge have a higher reputation in this area compared to companies without dedicated resources. The third implication tested by the authors claims that the more strongly a firm supports the knowledge transfer to the recipient, the higher is the firm's reputation in leveraging knowledge. Finally they state that the longer a company has actively commercialized knowledge assets, the higher is the reputation in this area. To sum up, this research shows that firms may considerably enhance their monetary and strategic performance in the market for knowledge by developing a strong reputation as knowledge provider (Lichtentaler and Ernst, 2006).

2.2 ENTRY STRATEGIES

In order to provide a comprehensive and useful overview over the theoretical foundations of this master thesis, it is necessary to shed light on the difference between commercialization strategies, discussed in the previous paragraph, and entry strategies. In certain cases, as non-equity entry modes like licensing, the term entry strategy can be interchangeable with commercialization strategy. On the other hand, the commercialization strategy can sometimes depend on the entry strategy selected by the company as in the case of direct export or equity investments. As explained by Root (1998), when a company licenses its assets the licensee is responsible for the commercialization of the deriving products and it can choose different marketing strategies. Conversely when an organization chooses to directly enter a specific market, for example through an investment entry, it has to select and manage a specific

commercialization strategy in order to sell the product in the new market. In this case an entry strategy is not sufficient to commercialize the product. The company also needs a marketing strategy to gain economic value from its outputs. To sum up, this marketing strategy, i.e. the commercialization strategy, can be either determined by the company itself or by the partner. The decision depends on the selected entry mode.

Entry strategies refer to the mode selected by a company to pursue an economic opportunity in an another country, distinct from the domestic one. The globalization phenomenon is at the base of this topic. Globalization is the process in which the geographical boundaries loose their importance with respect to social, political, cultural and economic matters (Waters 1995). Considering the managerial implications of globalization, Burgel and Murray (2000) underline the emergence of entrepreneurial start-ups which have an international outlook directly from their inception. The importance of an international perspective is stressed also by Root at the beginning of his book. Globalization does not mean that every company should necessarily go international but certainly all companies should plan for growth and survival in a world where the competition has become global (Root,1998).

Many authors agree that internationalization process and entry strategies necessitate a comprehensive plan that takes into consideration several forces, both internal and external to the organization (Root 1998; Cooper and Kleinschmidt, 1987). When dealing with these challenges, researchers face this problem considering the different entry strategies in foreign markets. Root (1998) provides a framework to determine the elements of an international market entry strategy. Here he specifies that, although this decision may seem a single plan, actually the company needs to evaluate a specific entry strategy for each product/market combination.

The framework suggested by Root (1998) is based on five decisions:

1. Choice of a target *product/market*
2. *Objectives* and *goals* in the target market
3. The choice of an *entry mode* to penetrate the target country

4. The *marketing plan* to penetrate the target market
5. The *control system* to monitor performance in the target market

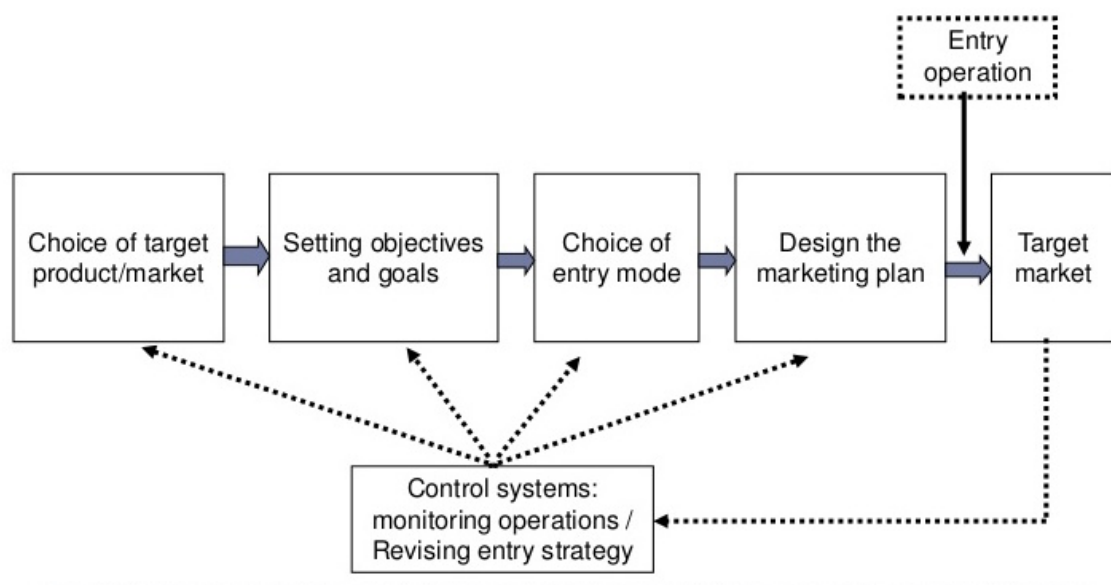


Figure 1: The elements of an International Market Entry Strategy (Root, 1998).

Moreover, although the five decisions are represented in a sequential manner, the author specifies that, in the real practices, the entry strategy decision is an iterative process which could force the company to change objectives, goals or even target country during the selection procedure. At the same time the importance of an entry strategy is fundamental, otherwise the company has only a “sales” approach to foreign markets.

When considering the five steps related to the market entry strategy, Root (1998) proposes a specific framework to determine the most suitable entry mode of a company in a specific foreign country. This framework is based on the comparison of different entry options and it is summarized by the following Figure 2.

	Generally Favors				
	Indirect and Agent/ Distributor Exporting	Licensing	Branch/ Subsidiary exporting	Equity investment/ product	Service contracts
External Factors (Foreign country):					
Low sales potential	X	X			
High sales potential			X	X	
Atomistic competition	X		X		
Oligopolistic competition				X	
Poor marketing infrastructure			X		
Good marketing infrastructure	X				
Low production cost				X	
High production cost	X		X		
Restrictive import policies		X		X	X
Liberal import policies	X		X		
Restrictive investment policies	X	X	X		X
Liberal investment policies				X	
Small geographical distance	X		X		
Great geographical distance		X		X	X
Dynamic economy				X	
Stagnant economy	X	X			X
Restrictive exchange controls	X	X			X
Liberal exchange controls				X	
Exchange rate depreciation				X	
Exchange rate appreciation	X		X		
Small culture distance			X	X	
Great culture distance	X	X			X
Low political risk			X	X	
High political risk	X	X			X
External factors (Home country):					
Large market				X	
Small market	X		X		
Atomistic competition	X		X		
Oligopolistic competition				X	
Low production cost	X		X		
High production cost		X		X	X
Strong export promotion	X		X		
Restrictions on investment abroad	X	X			X
Internal factors:					
Differentiated products	X		X		
Standard products				X	
Service-intensive products			X	X	
Service products		X		X	X
Technology-intensive products		X			
Low product adaptation	X				
High product adaptation		X	X	X	
Limited resources	X	X			
Substantial resources			X	X	
Low commitment	X	X			X
High commitment			X	X	

Figure 2: External and internal factors influencing the entry mode selection (Root, 1998)

In this paragraph the attention is particularly focused on the entry mode selection related to technology-based startups. Burger and Murray (2000) claim that, due to the lack of resources that many start-ups face during their early years, they primarily choose to export their product rather than locating their production facilities abroad. Nonetheless, even though Burger and Murray (2000) show important results that are described hereafter, their analysis of the foreign market entries is reduced to two alternatives: selling abroad through direct exporting or through the use of distributors. On the other hand Root (1998) explains that, generally speaking, a company can manage the entrance into a foreign country in two ways. It can export products to that market from a production facility located outside the target market. Otherwise it can choose to transfer its resources and assets to the foreign country where they can be mixed with local resources, such as labour, to manufacture products for sales in the local market. At the same time, when this topic is evaluated from a managerial perspective, the above mentioned strategies can be broken down into several distinctive entry modes. Root(1998) provides a classification based on three main groups: *Export Entry Modes*, *Contractual Entry modes* and *Investment Entry Modes*.

Export Entry Modes

This approach differentiates from the others since the output is manufactured outside the target country and successively transferred to it. Obviously export is confined to physical products and it may, in one case, require an equity investment. This strategy, in turn, can be pursued in different ways:

- *Indirect exporting*: it uses middlemen located in the company's home country
- *Direct agent/ distributor exporting*: it uses target country middlemen to market the exporter's product
- *Direct branch/ subsidiary exporting*: it depends on the company's own operating units in the target country. It requires an investment in marketing unit located abroad.

Contractual Entry Modes

They are represented by long-term agreements between a company having the intention to enter a foreign country and an organization in that country. It is mainly

used to transfer technology or human skills. They do not require an equity investment by the international company.

- *Licensing*: a company transfers to another firm the right to use its industrial property such as its patent, know how or trademark in return for a monetary compensation.
- *Franchising*: it is similar to licensing but different in motivation, services and duration. In addition to transferring its industrial property, the franchisor also assists the franchisee in organization, marketing and general management under an intended permanent agreement.
- *Other contractual entry modes*: they can either involve the transfer of services directly to foreign entities in return for monetary compensation (technical agreements, service contracts, management contracts, and construction contracts) or in return for product manufactured with those services (contract manufacture or co-production agreements).

Investment Entry Modes

This strategy implies investment by the company to own manufacturing plants or other production units in the target country and it necessitates an equity investment. There are two main options to pursue this plan:

- *Sole venture*: full ownership and control by the parent company. The latter can either start a sole venture by creating a new organization from scratch (new establishment) or by acquiring a local firm (acquisition)
- *Joint venture*: ownership and control are shared between the international and the local entities.

When considering the entry mode selection topic, there are four theoretical perspectives which are mainly employed by the academia. They are: Transaction Cost Analysis, Resource Based View, Institutional Theory and Dunning's Eclectic Framework (Brouthers and Hennart, 2007). The purpose of this research is not to deeply examine these perspectives but just to provide an overview of these different approaches. The transaction cost theory considers managers as affected by bounded rationality, while partners may opportunistically act if given a chance (Brouthers and Hennart, 2007). Several theories exist under the transaction cost analysis umbrella; Williamson (1987),

for example, introduces a framework based on three factors: asset specificity, uncertainty (both internal and external) and frequency (choice between using contracts or integrating activities within the firm's boundaries). The Resource-based view suggests that companies, in order to gain benefits from internationalization strategy, develop unique resources that they can exploit in foreign markets or explore them to acquire new resource-based advantages (Brouthers and Hennart, 2007). The institutional theory states that a country's institutional environment affects the firm decision to enter a specific market since they represent the rules that the firm has to face when operating in that country (Brouthers and Hennart, 2007). Studies in this area have analyzed how the foreign country institutional environment or differences between home and foreign country can affect company's decision and performances. Moreover, considering the new institutional theory, Scott (1995) suggests that a country's institutional environment depends on three main pillars: regulatory, cognitive and normative. In this theory the three dimensions are considered the most influential to determine how business is run in a specific target country and to select the most effective entry mode. Lastly, the eclectic framework developed by Dunning (1988, 1992) takes into consideration three distinct variables in order to identify the best option to enter a new market. They are ownership, location and internalization(OLI) advantages. Ownership advantages are within the company boundaries and they are the factors that differentiate it from its competitors. They are usually represented by company's specific resources or know how. Ownership resources include the size of the firm, the ability to produce differentiated products or services and the extent of international experience (Dunning, 1992). Location advantages refer to the opportunity to access a new market for a firm's product or service. In other words, gaining new customers by entering foreign markets can provide additional sales to the company. These advantages are the market's sales/growth potential and the stability of economic, political and trade policies in the foreign country (Dunning, 1992). Lastly, internalization advantages examine the firm choice to integrate or not activities alternatively fulfilled by the market. This decision varies from the establishment of a manufacturing facility to the development of a distribution system. These options are evaluated by comparing the market transaction costs with the costs to incorporate these activities within the company. Indeed Agarwal and Ramaswami(1992) consider

internalization advantages as contractual risks. They are: the relative cost of making and enforcing a contract, the risk of disseminating proprietary know-how and the costs of controlling and monitoring product/service quality. Therefore internalization advantages depend on whether the company has the incentive or not to build internal structures that substitute free market exchanges. In case these incentives do not exist, the company has no internalization advantages.

According to Brouthers and Hennart (2007), Dunning's framework can be considered as the perspective that combines concepts from several theories: resource-based (firm specific/ownership), institutional (location) and transaction costs (internalization). Moreover several studies have demonstrated how Dunning's theory makes a good job when explaining firms' performances related to the entry mode topic. Practically speaking, this theory seems to be a good tool since it combines the three previously mentioned theories and takes into account how they are related to each other. In addition to the above mentioned reasons, the Dunning's (1992) eclectic framework is examined more in depth since several studies regarding the research topic use this framework to deduce relevant information regarding new companies' internationalization strategies (Nakos and Brouthers, 2002; Agarwal and Ramaswami, 1992). Moreover Brouthers et al. (1999) have demonstrated how the Dunning's eclectic framework is not only a descriptive model. From their study they conclude that this framework is normative as well and that is why this model can be employed also in the selection process of the most suitable entry mode in a foreign country.

Nakos and Brouthers (2002) use Dunning's eclectic framework to examine the entry mode choice of SMEs in central and eastern Europe. They find that this model does a good job in predicting SMEs' entry mode selection in CEE markets. Moreover Nakos and Brouthers, explain that, due to constrained managerial and financial resources, SMEs may tend to use low investment non-equity modes of entry such as licensing and exporting. They also state how other studies have considered that SMEs may focus on small and niche markets, reducing investments risk and encouraging the use of more investment-intensive entry modes such as joint-ventures and completely owned organizations (sole ventures). Among the hypothesis tested in their study, Nakos and Brouthers (2002) find support for three fundamental results. Firstly, SMEs that have

more differentiated products tend to use equity modes of entry while SMEs with less differentiated products tend to use non equity modes. Secondly, considering the entrance in high growth potential markets, SMEs tend to use equity modes while they prefer non equity ones when dealing with lower growth potential. Lastly, they consider the contractual risks in the target country: when they are high, SMEs prefer equity entry modes with respect to companies that perceive lower contractual risks related to the commercialization strategy. In conclusion, they underline that no best practice exists in the entry mode selection. The nature of the firm and its available resources, are the foundation of this decision (Nakos and Brouthers,2002).

The study by Nakos and Brouthers is in line with Agarwal and Ramaswami (1992). Both the articles use the Dunning's eclectic framework to conduct their analysis. The latter, when considering the choice of an entry mode, is focused on the interrelationship between the three factors theorized by Dunning (1993): ownership, location and internalization. It examines the independent and joint influences of these factors on the choice of an entry mode. They consider four options available to a company: exporting, licensing, joint venture and sole venture. The results collected by the authors confirm some findings in line with previous literature. They confirm, for example, that though firms would like to establish market presence in foreign countries through direct investment, this option is limited by their size and multinational experience (Agarwal and Ramaswami, 1992). Larger and multinational companies show a greater tendency to enter foreign markets and when they choose to invest in a foreign country they prefer sole venture over joint venture entry mode. Considering the small and new enterprises, object of this thesis, Agarwal and Ramaswami find that firms with limited international experience tend to enter high potential markets through joint ventures. This interesting result suggests that smaller and less expert companies need to complement their resource needs with other organizations to enter a foreign promising market. This strategy is undertaken in order to share costs and risks and to reduce the long-term uncertainty. Moreover, considering the different products commercialized by the company, the authors find that companies able to develop differentiated products are concerned about the possible loss of their competitive advantage in countries affected by higher contractual

risks. That is why, in Agarwal and Ramaswami (1992), the companies analyzed dislike the exporting mode and prefer investment modes as joint-ventures. On the other hand their results show that, although companies are interested in entering markets with high potential, the presence of investment risks lead them to shy away and prefer the export mode.

Another important contribution in the entry mode literature is provided by Burgel and Murray (2000) in the above cited article. They investigate 246 technology-based start-ups with international activities in order to collect information regarding the entry mode decision. Their research is simplified to the choice between direct exporting and the use of distributors. According to the authors' opinion, this choice is undertaken since these are the two predominant alternatives available to entrepreneurial high-technology firms. Furthermore Burgel and Murray (2000) claim that the limited market opportunities in many countries may not justify the development expenditures for certain technologies unless the company does not consider the opportunity of international markets immediately since its foundation. This idea corroborates the opinion by Root (1998) that globalization forces companies to expand their perspective from a local to an international point of view if they want to survive and grow. Considering this challenge, Burgel and Murray (2000) explain how technology-based start-ups face a risky dilemma. They may be forced to expand their business abroad in order to amortize their initial investment and to generate cash flows to finance the ongoing activities. On the other hand many new companies face negative cash flows during the first years and therefore they may lack the financial resources necessary to commercialize their outputs on their own in other countries. Burgel and Murray suggest that, considered these constraints, the identification of end customers and the provision of pre-sale and after-sale support may be easier managed by a local partner. The just mentioned option has some drawbacks: the revenues have to be shared between the company and the distributor and additional costs of training and monitoring activities could arise. Simply speaking, when taking this decision the company is practically subcontracting a part of its growth strategy to an agent. From these elements the choice between direct exporting and a more proactive entry mode seems to deeply depend on firm experience and foreign market knowledge (Burgel and

Murray, 2000). In conclusion, the authors provide the three most important findings of their study. First of all, the companies inclined to use distributors in the foreign markets can benefit from starting collaborative relationship in the local market. Learning how to deal with collaborative agreements can be easier and less costly in the home country. Secondly, start-ups that commercialize customized products should manage with care their pre-sales and after-sales activities considering their reliance on direct exports. Lastly, companies with limited record of achievement should take into consideration collaboration in order to exploit the track record and reputation of an established intermediary (Burgel and Murray, 2000).

Such as Burgel and Murray, also Brouthers and Nakos focus their attention on the internationalization process of SMEs (Brouthers and Nakos, 2002; Brouthers and Nakos, 2005; Brouthers, Nakos and Dimitratos, 2015). In Brouthers and Nakos (2005) they concentrate on the criteria that SME use to select target markets. More specifically, they want to investigate whether a positive relationship exists between SMEs using systematic international market selection (SIMS) criteria and their performances. With the term systematic they mean *using objective criteria to select export markets*. They include formalized international market research activities, visits of foreign countries, monitoring national and international business press and using published statistical sources in differentiating foreign countries (Brouthers and Nakos, 2005). Examining whether the companies in the sample take a systematic approach to select the target markets and also checking relevant control factors, the authors study the differences between systematic and unsystematic approaches. Considering the control variables, Brouthers and Nakos (2005) test seven hypothesis. Two of them seem mostly relevant for the purpose of this thesis. First of all, in line with previous studies, firm size is not significantly related to an SME'S export performance. Moreover the authors underline how exporting into too many countries can be dangerous if they are not scrupulously selected. Indeed they show that concentrating in fewer foreign markets may allow the small company to use its resources more effectively. The companies in the sample that adapt their products to the target market before entering it, perform better than the others (Brouthers and Nakos, 2005). In conclusion the authors find strong empirical support for the hypothesis regarding SIMS criteria and international performances. The

more systematic the selection of foreign target markets, the higher the export performance is for SMEs. To sum up, the small and medium firms that approach the internationalization strategy in a systematic way, appear to have better export performances than companies that do not (Brouthers and Nakos, 2005).

Furthermore in their last study Brouthers, Nakos and Dimitratos (2015) analyze the relationship existing in SMEs between entrepreneurial orientation, research and marketing alliance participation and international performance. Entrepreneurial orientation is considered by the literature as one of the most important capabilities to build an advantage. Moreover the authors theorize that firms with greater entrepreneurial orientation can better perform since they have the capabilities to undertake innovative strategies, they develop and use technologies that better align with the foreign customers' needs and they are more risk prone when dealing with new strategies and technologies; generally they also tend to be more inclined to expand internationally (Brouthers, Nakos and Dimitratos, 2015). On the other hand strategic alliances can guarantee better international results since they represent a source of knowledge and resources that can help a small and new enterprise to overcome the smallness and foreignness liabilities. Research alliance is an agreement between two organizations to share knowledge and know-how and to come up with new product or services. On the contrary international marketing alliance is a strategic agreement between two companies intentioned to share marketing resources. The main benefits of this strategy are represented by the foreign market knowledge of advertising and other promotional methods owned by the local company. These three factors (entrepreneurial orientation, research and marketing alliances) are previously analyzed individually and then tested together to develop a final conclusion. First of all, Nakos et al. (2015) note a positive and significant correlation between entrepreneurial orientation and international performance. Moreover the authors find that the direct effect of foreign research alliances is positively and strongly associated with international performance but the benefits are greater for companies that own stronger R&D capabilities. They find the same relationship when considering foreign marketing alliances and even here the effects are greater for SMEs possessing stronger market capabilities. However the most relevant result is obtained when considering

these three variables together. It appears that the relationship between entrepreneurial orientation and international performance is moderated by the participation in foreign alliances. To sum up, the organizations with higher entrepreneurial orientation tend to gain greater benefits from the marketing and research alliances out of the local country (Brouthers, Nakos and Dimitratos,2015).

The sources employed in these paragraphs provide relevant knowledge regarding the internationalization and the entry mode process. Being more specific, researchers as Root (1998), Burgel and Murray (2000) and Nakos and Brouthers (2002) seem to agree that the entry mode selection is a choice affected by both internal and external forces. Factors such as market, environment or institutions are not easy, if not impossible, to change and the company should consider them as unalterable at least in the short-term. On the other hand, matching the external factors with the internal resources that the firm owns and develops, the company can select the most fitting entry mode to successfully penetrate a foreign market.

2.3 CONCEPTUAL FRAMEWORK

The previous paragraphs give an overview over the most relevant findings provided by researchers and scholars regarding the commercialization and entry mode strategies. The purpose of this last paragraph is to develop a conceptual framework to be used as a vademecum in order to delineate a successful commercialization strategy for the Repiper's technology into the Italian market. The proposed framework represents the process followed by the author to provide recommendations to Repiper's management.

In the literature review it has been underlined how the success or failure of a commercialization strategy in a foreign country derives from the relationship between external factors and the internal resources owned by the company (Burgel and Murray, 2000; Nakos and Brouthers, 2002; Root 1998, Chandler and Hanks, 1994).

Thereby this conceptual framework aims to shed light on both Repiper's internal forces and the external environment, focusing here on the analysis of the Italian market as target country.

In order to accomplish this goal, this conceptual framework (Figure 3) is based on two fundamental theories analyzed in the previous paragraphs. First of all, the Dunning's (1988, 1993) eclectic framework is used in order to analyze eventual ownership, location and internalization advantages related to Repiper's resources and to the Italian market opportunity. This initial framework is used to study the companies internal capabilities (product characteristic and firm characteristics) and the attractiveness of the Italian market. Moreover eventual internalization advantages are taken into consideration. As explained before, this framework already proved to be appropriate to analyze SMEs and their internationalization process (Brouthers and Nakos, 2002; Agarwal and Ramaswami, 1992; Brouthers and Hennart, 2007).

Successively the information collected in this first step together with other theoretical and empirical findings are gathered in order to fill the market entry strategy framework (Figure 1) proposed by Root (1998). When using this framework, the attention is particularly focused on the third step which regards the entry mode choice. To determine the most suitable mode for the Repiper's entry in Italy a specific table (Figure 2) developed by Root (1998) is employed in order to take into consideration all the internal and external factors involved in this decision.

In this way, merging these two models, the author deduced the relevant information in order to provide useful recommendations to the company. The final output is a framework employed by the author to inspect Repiper's potential entrance in the Italian market. Moreover this structure can be used by Repiper's top management when considering the entrance in other potentially profitable target markets.

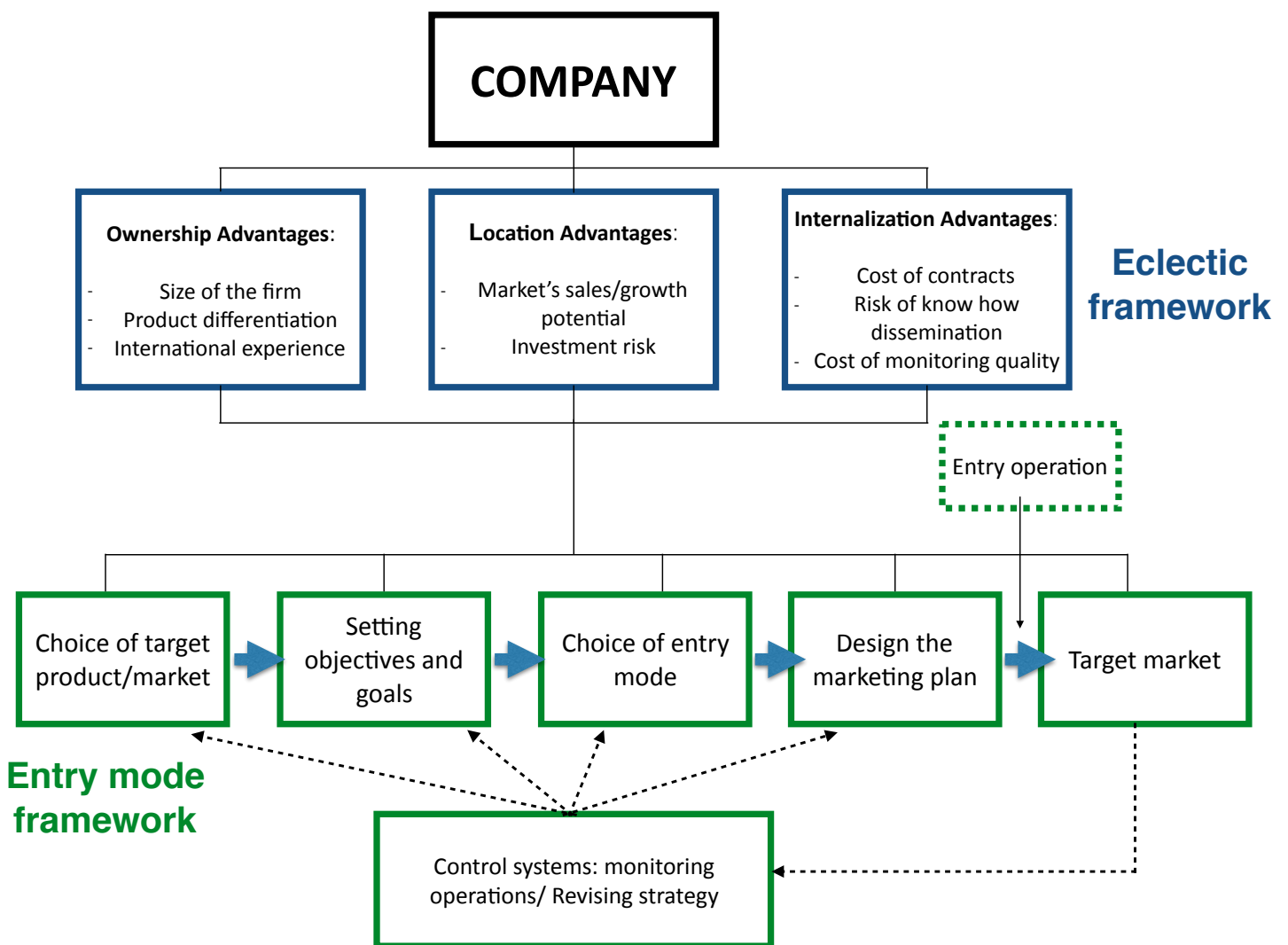


Figure 3: Conceptual Framework (Own elaboration from Dunning, 1992; Root, 1998; Agarwal & Ramaswami, 1992)

3. METHODOLOGY

The purpose of this chapter is to provide information regarding how the research is conducted from a methodological point of view. The choices undertaken in the analysis are discussed in order to make the reader aware of the research methodology.

First of all it is important to shed light on the meaning of research methodology. According to Bryman and Bell (2011) the research methodology regards methods, practices and procedures necessary to outline a procedural approach on the research. The different procedures used to write this thesis and to answer the research question are described in this chapter. Therefore the analysis of the methodology includes different sections. Firstly, which is the main research strategy at the bottom of this research. Secondly, how the literature review has been conducted in order to collect relevant theoretical foundations for the study. Then explanations are provided regarding the research design to motivate this specific choice among all the options. Lastly, the research method is discussed together with external validity and reliability issues.

3.1 RESEARCH STRATEGY

The Research strategy represents the ground of a research methodology. Although a unique and correct definition is not easy to define, Bryman and Bell (2011) consider *research strategy* simply as a general orientation to the conduct of a business research. Nevertheless the importance of research strategy should not be underestimated since it can deeply affect the reliability and the validity of the results.

When considering the research strategy matter, the attention is frequently focused on the distinction between quantitative and qualitative research. As explained by Bryman and Bell (2011) the quantitative approach emphasizes the quantification in the collection and analysis of data. On the other hand, the qualitative method is more focused on words rather than quantification. Several implications are related to the choice of the research strategy. For example, while the quantitative strategy is

deductive and it is aimed to test theories, the qualitative one is inductive and directed to the generation of theory.

This thesis predominately assumes the features of a *qualitative study*. Nevertheless in the analysis of the Italian markets and its characteristics some quantitative methods are used in order to collect relevant information and generalize them to the whole country. In conclusion, since these two strategies can work together, the paper is written with a dominant qualitative approach but quantitative tools are employed in specific situations where they were more appropriate for the analysis.

3.2 LITERATURE REVIEW

This section of the methodology explains how the theoretical foundations for this analysis were collected in order to gather the most relevant theories to answer the research question. The importance of literature review is rather straightforward: Bryman and Bell (2011) explain that its most obvious purpose is to understand what is already known about the topics the researcher is going to study.

The following steps were accomplished when performing the literature review:

- Identify the research topic
- Select Inclusion and Exclusion criteria
- Determine Keywords
- Test keywords on various databases
- Summarize the review and redefine more specifically the research objective

After the definition of the research topic together with the supervisor and the company object of the thesis, a literature review was conducted considering topics such as commercialization, internationalization and entry strategies . From this first overview, inclusion and exclusion criteria together with relevant keywords were determined. To increase the accuracy of the analysis the keywords were tested by matching researches in several database. At the end of this preliminary step it was possible to narrow down the thesis objective and to choose the definitive research question.

3.3 RESEARCH DESIGN

The research design of this research study is structured as a *single case study* analysis where the attention is focused on the Swedish company Repiper International AB. Simply speaking this design is aimed to provide a deep and intensive analysis of a single case. This approach is frequently used to structure research studies regarding business research. With respect to the other approaches, Bryman and Bell (2011) stress how this design is focused on a bounded situation or system, an entity with a purpose and functioning parts. This approach is strictly related to intensive investigation of the setting such as an organization. It is generally used when, after the analysis of a broad topic, the researcher narrows down the attention and he or she applies the theories to a specific practical case. Furthermore, when selecting such a research design, it is essential to mention its potential weaknesses. One of the main debates concerning the case study design regards the *external validity* or *generalizability*. As sustained by Bryman and Bell (2011), a single case study cannot be representative to provide findings applicable more generally to other cases. Sometimes researchers do not consider that a case study is a sample of one and therefore it inevitably lacks theoretical generalizability. On the other hand, Lee et al. (2007) claim that particularization and not generalization represent the main strengths of this design and that its fundamental purpose is to concentrate on the case in order to deeply comprehend its complexity.

In conclusion, the single case study was deemed to be the most appropriate option to deal with the previously mentioned research question. Since the purpose of this research is to analyze the commercialization of Repiper's technology in the Italian market this approach seemed the most effective to provide recommendations for this strategy, as required by the company. This design was chosen since it allows a deep investigation of the company without overlooking neither the analysis of the external factors affecting the case nor the theoretical aspects at the basis of this analysis.

3.4 RESEARCH METHOD

Following the definition by Bryman and Bell (2011), a research method is simply a technique for collecting data. It can involve a specific instrument, such as a self-completion questionnaire or a structured interview schedule, or participant observations whereby the researcher listens to and watches others. The different kinds of research are deeply related to the research strategy and design chosen to manage the analysis. In the paragraph 3.1 the predominance of the qualitative method over the quantitative one was explained. Moreover some quantitative tools were used to better comprehend certain sections of the research. This approach reflects the idea of triangulation expressed by Bryman and Bell (2011). Triangulation means that the results of an investigation employing a method associated with one research strategy are cross-checked against the results of using a method associated with the other research strategy. The research was performed in line with this concept.

INTERNAL SOURCES

As explained in the previous paragraph this research was conducted mainly following a qualitative research strategy. Bryman and Bell (2011) underline in their work how the interview is probably the most widely employed method in qualitative research.

When collecting data from Repiper's personnel, several semi-structured interviews were undertaken to gather information regarding the company technology, its resources, skills and strategies. This option of interview was chosen because, as explained by Bryman and Bell (2011), here the interviewer has a list of questions on fairly specific topics to be covered but the interviewee has a great deal of leeway in how to reply. In this way it was possible to investigate the topics emerged during the literature review but also to let the interviewee free to deepen matters which the researcher did not mention in the questions and that could be influential for the overall analysis.

The internal findings were collected by interviewing the following employees:

- CEO: Joakim Hedelin: He was asked mainly about the overall strategy and the growth plan of the company. Interviewed 06/04/16 (44:51), 08/04/2016 (19:14) and 28/04/2016 (17:40)

- Logistics and sales manager: Martin Karlsson. He was asked about the operations, sales and technical aspects of Repiper's technology. Interviewed 08/04/16 (09:59) and 14/04/2016 (27:19).

Semi-structured interviews were undertaken mainly to assess resources, skills and capabilities but also to understand how the company faces the entrance in a new target market (Appendix 1).

EXTERNAL SOURCES

The recourse to external sources was mainly aimed to the comprehension of the Italian case during the market analysis phase. Two kinds of data were employed to assess the attractiveness of the Italian market. Firstly, to estimate the market potential for Repiper's technology primary data from ISTAT, the Italian bureau of statistics, were collected and analyzed. Moreover in order to determine the stability of the economic, political and trade environment, the author employed secondary information such as documentary sources and international business publications. Secondly, extrinsic interviews were undertaken in order to collect information from industry experts. These interviewees were chosen for their expertise in the renovation of Italian buildings. Also in this case the data collection was based on semi-structured interviews. Together with the reasons explained before, this option seemed the most effective due to the writer's the lack of technical knowledge. Thus this approach let the interviewee free to talk about topics that were not directly mentioned in the interview guideline but that he thought to be important when analyzing the Italian market for pipe renovation.

The following experts were interviewed:

- Engineer Roberto Basso: expert in building renovation and the application of new technologies in this field. Interviewed 04/04/16 (30:15) and 27/04/16 (24:30).
- Plumber Fabio Pavoni: expert in drainage system and pipe renovation in residential buildings. Interviewed 12/04/2016 (22:48).

The interviewees were mainly asked about the potentiality of the technology, the current methods currently employed in the Italian market and any potential critical factor related to the entrance of Repiper in this country (Appendix 1).

3.4.1 DATA ANALYSIS

This paragraph is focused on the data analysis process. Here, the research is structured by following one of the most frequently used approaches in the qualitative research area: the grounded theory. Grounded theory is described as a theory that is derived from data which are systematically collected and analyzed through the research process. Here data collection, analysis and eventual theory are tightly related to each other. Two main features characterize the grounded theory: the development of theory out of data and the iterative or recursive approach since the data collection and analysis proceed together, continuously referring back to each other (Bryman and Bell, 2011).

In this specific case study the data collection process was composed by two fundamental distinctive steps that eventually have been combined together to provide recommendations to Repiper's management. Firstly the attention was focused on the analysis of the internal resources and capabilities of Repiper. In this phase the technology features have been analyzed with respect to the company's competitors and the degree of international experience owned by Repiper has been studied. After this step, an assessment of the Italian market attractiveness has been conducted considering market sales potential and local policies.

Once these two preliminary steps were concluded, the relevant information collected were used to analyze the entry mode selection according to the Root (1998) model in order to provide final recommendations.

3.4.2 VALIDITY

As the research is based on a single case-study design it is necessarily affected by limited external validity when trying to generalize the obtained results (Bryman and Bell, 2011). Therefore the outcomes of this research should be considered as strictly related to the specific Repiper case. A single case-study cannot be employed to derive general information regarding other cases. The results collected in this research could be potentially useful for other companies in the same field which are interested in

entering the Italian market. Moreover the conceptual framework shown in the second chapter can be used by Repiper when approaching the entry decision in another potentially profitable market, as the Italian one in this case.

In conclusion, the external validity of this thesis is rather limited but this was not the purpose of this research; as explained before, the main objective of a single case-study is the particularization and not the generalization (Lee et al.,2007).

3.4.3 RELIABILITY

As stated by Bryman and Bell (2011), the consistency of every research strictly depends on the reliability of the data collected in the research process. Previously in this chapter it has been explained how the analysis provided in this thesis is based on two main data collection procedures.

The first one was aimed to the comprehension of internal forces within Repiper's organization. This process has been carried out by tape-recording the interviews with the interviewees' consent, in order to reduce any bias in the transcription process. The interviews, conducted at the company's offices, have been transcribed right after to minimize the errors in the internal sources evaluation process.

The second step in the data collection procedure was aimed to the evaluation of the Italian market attractiveness. This process in turn was accomplished using two different techniques. For the analysis of the Italian market potential and to assess the investment risk in this target country, the author analyzed the most contemporary reports gathered both from national and international sources. Furthermore two experts were interviewed, in order to deepen the analysis and to have a practical knowledge of the buildings renovation process in Italy. They were selected for their involvement in the residential buildings renovation, in order to increase as likely as possible the reliability of the external findings. These interviews were performed, in Italian, by conference call and tape-recorded at the same time. To guarantee a correct translation, they were immediately and entirely translated into English before selecting the most relevant information to include in the empirical findings.

4. EMPIRICAL FINDINGS

This chapter regards findings from internal and external sources. The focus is on the assessment of Repiper's resources and capabilities and on the analysis of the Italian market for the company's technology.

4.1 INTERNAL FINDINGS

The purpose of this paragraph is to gather data and information regarding the Ownership and Internalization advantages described in the second chapter and shown in Figure 3. These findings are collected throughout internal interviews with the CEO and the Logistic & Sales Manager of Repiper. Moreover company reports have been analyzed in order to gather additional and specific information.

4.1.1 REPIPER GENERAL INFORMATION

Röranalysgruppen i Europa AB , current Repiper AB, was founded in 2008 and it is a sales and development company for the renovation of drainage systems in buildings.

The basic idea is to get the scale of the technology that has been developed over the last 30 years from the inventors Sam Hedberg and Göran Nilsson and thereby create opportunities for realizing development projects, protecting ideas with patents and offer competitive prices and good margins for their customers. The company is currently in an expansive stage and, in order to facilitate its growth, a new CEO, Joakim Hedelin, has been hired. He will guide the company in its growth both through new customers and new geographies. Considering Repiper AB, which controls both Repiper Nordic AB and Repiper International AB, the turnover was equal to 8 million Swedish kronor in the last year. According to the CEO, currently the 95% of the sales volume comes from the Scandinavian countries and the remaining 5% from other countries such as Germany and Iceland. Therefore the company is presently operating mainly into the domestic and close markets. Considering the Swedish competitive environment, there are few companies that can be identified as competitors; nowadays the market is considered big enough for the existing firms and it does not require an aggressive competition.

The company's strategy is to grow out of the small organization constraints to ensure efficient digital streams from order through delivery to payment. For the growth of the company it is fundamental to differentiate against competitors by leveraging its patent portfolio. In this perspective Repiper has the control over its patented tools by retaining their ownership and selling the consumables employed in the renovation process. The firm aims to sign long-term contracts with customers and to establish fruitful joint relationships. This is why Repiper educates its customers, to ensure that the installations are professionally done and with high quality standards. This is the strategy the company has chosen from the beginning to generate financial gain for the entire chain: from Repiper to the installer to the owner of the house. Thus Repiper is selective in the choice of its customers. It aims to work with installers that are market leaders, serious and whose high standards can help the company to grow together. In conclusion, although Repiper aspires to work globally, its strategy is to work country by country accurately selecting every target market.

Repiper's mission is to offer the best method for the sewage system renovation in buildings. Their vision is to become a leading operator of sustainable pipeline renewal of buildings. The value that Repiper offers is not the sale of a product but rather a profitable concept. What Repiper sells is a system to renew the drainage system in a cost-effective way. Their value is a method that has proved to work and that is one third cheaper than putting new pipes. It is a package of solution that works, together with products that work together with education to get it done.

4.1.2 TECHNOLOGY CHARACTERISTICS

The Repiper's competitive advantage is based on the patented tools that they have developed and around which the Repiper's method is built. Other companies have the technology at the base of the method but Repiper owns the patent on the tools. Many companies have tried to copy their technology and now they have similar tools but they are not allowed to commercialize them. Repiper has already stopped one company that was infringing its patent and selling similar tools in Sweden. According to Martin Karlsson, Logistics and Sales manager, the main benefit of using Repiper's

method derives from the tools used to renovate the pipes that are flexible while the other companies use stiff tools that can only work in straight pipes.

Considering the manufacturing dimension, Repiper has few external partners that manufacture its products. The products are partially manufactured in Sweden and partially in China. The company wants to keep on using this approach for the future: internalizing this function is not seen as necessary. The choice to produce in China is explained since manufacturing certain components is cheaper in developing countries. Thereby, at least for now, the production outside the Swedish borders is contemplated only in this case: to exploit production cost advantages.

On the other hand, as explained by the CEO Joakim Hedelin, the company must improve its logistic function. Currently Martin Karlsson is responsible for the whole process: receiving the orders, collecting the materials from the suppliers and shipping to the customers. However this approach is not efficient anymore since the company is growing fast. Therefore the idea is to start working with a third logistic partner that will keep everything on the stock and will directly ship to the clients. In this way the process should become faster and the company could have an increased stock to improve its delivery capacity and be as fast as possible. The idea is to ship the order within 24 hours while now it takes even a week. In the longer term the company is planning to have an e-commerce platform where clients can directly order the products. In this way Mr Karlsson should have a lower logistics burden and could focus on customer relationships and training.

With respect to the customers, the priority is to shorten the lead time between the order and the delivery of the products. Moreover when considering Repiper's business model, they have practically chosen to give away the tools: the customer can borrow them for free and Repiper makes money out of the consumables employed in the relining process. Therefore the price issue does not arise with respect to the tools but when considering the materials such as the epoxy or the bladders. Moreover a critical aspect is related to the dimension (diameter and length) of the bladders and the liners. Sometimes these components have to be customized to the different customers' needs. In conclusion, according to the logistic and sales manager, one of the most

critical aspect is related to the training. The technology is superior to the other alternatives but the customer must be trained to use it in the right way otherwise it can be costly and the renovation is not completed in the right way. Explaining the potentiality to the customers is not a problem, they easily understand the quality of the method, the problem is to make them learn how to correctly apply it, as stated by Mr Karlsson.

In conclusion, after the dimensions of the pipes currently installed in the Italian buildings has been analyzed, Repiper's management has been asked about product adaptation. Considering the data collected, no specific adaptation is required for the Italian market. The technology and the related products can be commercialized there without requiring any particular modification except for the normal adaptation.

4.1.3 FIRM CHARACTERISTICS

Repiper has currently two full-time employees and a part-time accountant. There are also some people that, from time to time, work for the company but they are not employed. In this growth process the company is sometimes using people that are working for the other companies within the group. Considering the employees' background, Martin Karlsson has a deep knowledge of the business and of the company's technology itself but from the international point of view his experience is only related to the Scandinavian countries. Therefore he has a wide expertise considering the internal part of the company (logistics, sales and training) but a limited international outlook. On the other hand the CEO's background has nothing to do with repiping but he has a long experience in product development, sales and sourcing. Joakim Hedelin has a wide international experience: he worked with UK, Romania, Taiwan, China and other countries. The company surely needs manpower in the short term. They have the expertise they need with respect to sales and general issues but they lack competencies concerning production drawings: none of the employees has a specific knowledge of this function. They need to expand the product development technical part within the company. This function is currently delegated to other companies that are part of the group, but, according to the CEO, Repiper cannot only rely on them during its growth; they need internal competencies as well. This is the

most relevant lack of resources that has to be internally managed. To sum up, they need more sales and product development personnel. In a couple of years they plan to be five people but, at the same time, the company is very keen on not being more people than needed.

Considering the financial structure, Repiper’s shares are owned at the 72,7% by Installationssanering Intressenter AB, at the 5,7% by Cloasina Invest AB and at the 11,6% by Tommy Westerberg. The overall share capital of the company is equal to 518 900 SEK (55792,00 euros). The financial plan until 2018 to finance the company growth is the following.

ISAB INTRESSEENTER	ALMI	DANSKE BANK
1 MSEK	2 MSEK	1 MSEK
IP COSTS	Repiper International, operation	Inventories and external logistics solution

Table 1: Repiper financial plan 2016-2018 (Company Report)

As you can see in the table, part of the 4MSEK is provided by the parent company ISAB Intressenter AB. The largest part comes from Almi, a Swedish state-owned investor, and the remaining from Dankse Bank. This financial resources will be used for IP costs, for the Repiper international operations and to improve the logistic function of the company. According to Mr. Hedelin the company has currently the required resources to start its international expansion and to increase its sales volume. Nonetheless the company is aware that this plan could change depending on how the company will grow. As explained by the CEO, Repiper has to be very careful to manage its growth: many companies go bankruptcy because they do not know how to run the business in these situations.

If you consider the network of partners Repiper is working with, much is linked to its business model. In some cases the partner in a specific country is also the company’s customer. As Mr. Hedelin claims, the kind of partner that Repiper is seeking in each country mostly depends on the entry strategy that the company chooses for that

market. For example, the company is presently bargaining an agreement in the USA but the structure is not completely defined yet. They will probably partner with a company that will not do the installations itself but that will sell the products and the method to the installers. Repiper will teach its partner and the partner will teach the installers or maybe they will teach the installers together.

On the other hand, considering the suppliers part of the business, they have one main supplier for many inputs but most of them are not difficult to move. The company is not strictly dependent on that supplier. The most critical partner, among the suppliers, is the one that produces the bladders. This supplier could be critical because it has all the fittings to produce them and they are not easy to move to another one: starting over again could be complex.

4.1.4 CRITICAL BUSINESS FACTORS

The risk of dissipating knowledge is typical for organizations that commercialize patent-protected technologies together with their products. According to the CEO Joakim Hedelin, the general idea is that the higher knowledge of the Repiper's method people have, the easier it is to get customers. On the other hand there are many organizations that want to produce the tools developed by Repiper on their own. Obviously these companies are not allowed to do it since they would infringe the patents that Repiper owns on these tools. Therefore spreading out tools to customers that are not trustworthy could oblige Repiper to sue many companies to stop them from producing their own tools. Thus the main problem is related to the patent infringement: protecting your patents costs a lot in terms of money and efforts so you need to evaluate whether an infringement is really worth to be stopped or not.

With respect to the deterioration of quality, it is fairly easy to control for their products: this issue is not related to them. It arises when considering the application of Repiper's method as a whole. If the method is not performed in the right way, the quality of the Repiper technique is not guaranteed. In this aspect the larger window of problems is related to how correctly the installer applies the technique developed by the company. Training becomes the real critical factor. Moreover Mr Hedelin claims that much is related to the customer's mentality and propensity to do the work in the right way with a high-quality approach. In conclusion, the CEO explained how making contracts

nowadays is not very costly anymore. On the other hand the enforcement involves the infringement problem before described that is quite critical. Moreover some problems could come up whether Repiper wants to terminate a contract because, for example, the customer is not trustworthy or he stops buying the products to use the tools. In that case, when Repiper wants the tools back, the client can refuse or also sell them. Here again the firm must evaluate whether going to court is worth or not.

4.1.5 THE ITALIAN MARKET

When Repiper targets a specific market, the main idea is to commercialize there the technology and the method as a whole. This could imply that different product versions are required in order to conform the innovation to the country's specific needs. The main objective is to create stable cooperations and hopefully relationships that last for a long period of time without constant monitoring and education. With respect to the entry mode choice, Repiper takes every option into consideration, except the simple export, when targeting a new market. They do not simply want to sell their products and tools and hope that installers will use them in the right way. They want a more structured relationship to be sure that their technology, method and products are employed in the right way in order to guarantee the reliability and efficiency of their method.

Moreover Mr Hedelin claims that much depends on whether the presented opportunity is good enough or not. For instance, the licensing method could be the best option if they meet the right company or they may find more than one company in Italy for which the user agreement is the best alternative; joint-venture could be another viable option but sometimes the opportunity knocks when you do not expect it. To sum up, a one-fits-all solution does not exist and a different evaluation is needed for each country. In conclusion, the technique that Repiper employs to assess the market potential has been analyzed. Since the drainage system usually has an expected life of forty years, to estimate the attractiveness of a country, the percentage and the condition of the buildings older than forty years, is the most appropriate method.

In conclusion it is important to specify that Repiper's management already had an approach with the Italian market in 2012. Ola Stål, the previous operations manager at

Repiper went to Italy for a business trip organized by Ecoex, the association of West Swedish environmental companies. During this trip he presented the idea in occasion of a seminar with many architects and construction industry insiders. As explained by Mr Stål in the report regarding the experience, the response was overall very positive. The drainage tubes are molded as in Sweden and a huge portion of the Italian building heritage necessitates a renovation of the drainage system. He states that, at the time, to renovate the leaking sewage system in buildings they identify where the leak is, then they open up the wall and replace the leaking component (the so called traditional method). He also inspected why in Italy there is not the tendency to renovate the entire sewage system when it begins to get problems. The main answer was that it is such a huge procedure that people avoid to do it. To sum up, in the Italian buildings they usually do not have preventive interventions, they tend to fix what is broken. We must consider that in Italy the residents are mostly owners and in this case they also have the financial responsibility for the pipes. To find an agreement between all the tenants to realize huge renovation investments is not an easy task. However this could be a positive aspect since, according to the architects Mr Stål talked with, it exists a market for methods that are less expensive than the traditional one and that do not involve such a large operation. Mr Stål claims that the opinion that the architects have regarding the Repiper's technology is very relevant. He explains that architects in Italy have greater power than in Sweden. Renovating in Italy is not the same as in Sweden where you do not take the architect into consideration.

4.1.6 COMPETITOR ANALYSIS

A competitor analysis is required to comprehend the competitive environment that Repiper is going to face in the Italian market. First of all it is important to shed light on the different methods that can be used in the renewal of the drainage system. There are three main ways to face these kinds of work. Firstly, the traditional approach implies the replacing of the old pipes with new ones. This is the typical approach that requires to evacuate the house and it always involves huge inconvenience and stress for the tenants. It implies high costs and demolitions in order to remove the old pipes and install the new ones. This is also the most widespread method in Italy.

On the other hand there are innovative methods such as Lining and Coating. The first one is related to Repiper's technology and it has been already explained. The second one, the so called Coating, is based on an injection process.

For the purpose of this analysis it is particularly important to focus on this technique since one of Repiper's Swedish competitor using this approach has already entered the Italian market two years ago. This company, Tubus System, employs the coating technology and it has established a local subsidiary in Milan, in the north of Italy.

In order to deeply comprehend the competition that Repiper is going to face in case it enters the Italian market, the differences between Repiper's and Tubus System's technologies have been analyzed by interviewing Mr Karlsson on this fundamental topic.

Both the techniques start by cleaning the drainage system using water or other tools. After the cleaning, the Tubus method requires that the pipes are dried, this is the first difference: their technology cannot work if the pipes are wet. For example if the pipe is leaking and water gets inside, before using their injective technology they have to fix the leakage. On the other hand the re-lining technique offered by Repiper can be applied even if the pipes are wet: it can work even if the pipes have some leakage or if it is broken in some points. After the cleaning the Repiper method can be directly applied while the Tubus' one requires that the leakages are previously fixed. Practically speaking, the renovation based on Tubus' method is realized through a machine with a camera that works backwards from the end of the pipe to the starting point. During this process the machine injects a mixture that adheres to the old pipe and gets tough. According to Mr Karlsson this technology can work very well on the final part of the drainage system, such as next to the bathroom fixtures, but it does not work so well in the branches and, above all, on the soil stack. When renovating these sections of the drainage system the surface can get uneven and irregular since the mixture can sediment more on certain points and less on others. Moreover this technique has shown problems of rust. Few years after the renewal, the rust can pass through the old pipe to the new layer created inside. The most important differences between the two methods is that using the Repiper one you create a new plastic pipe inside the old one, with the Tubus one you paint the old pipe with a mixture. For instance even if the old

pipes brakes because it is worn out or damaged, the new pipe created with the Repiper's method can survive and keep on working. What Repiper offers it is not a simple renovation of the old pipes but a completely new drainage system. Furthermore Repiper's approach can be combined with other technologies to provide hybrid solutions. As explained by Mr Karlsson using their method in every part of the drainage system can be expensive in some cases and it can takes longer than the injection method. On the other hand their technology can be easily used together with the other one: for example the relining approach can be used on the soil stack and the junctures and the coating one for the remaining sections. In conclusion the Tubus' technique is faster and it can be slightly easier to learn but it also needs training courses and support from the company in order to be effectively applied. In conclusion, it is important to specify that Tubus System has already tried, in the previous years, to acquire both Repiper's technology and the company as a whole.

The following table shows a comparison between the three methods before mentioned.

	Replacing (traditional)	Lining (Repiper [®])	Coating (Injection)
Installation			
Cost	High	Medium	Low
Fast installation	✘	✓	✓
No unpleasant smells	✓	✓	✘
No demolition dust	✘	✓	✓
No demolition work	✘	✓	✓
No asbestos decontamination	✘	✓	✓
No moving out	✘	✓	✓
Result			
Seals existing cracks	✓	✓	Partial
Seals existing holes	✓	✓	Partial
Seals between soil stacks and branch lines	✓	✓	✘
Manages transitions between different pipes	✓	✓	✘
Self-supporting	✓	✓	✘
Can be installed into plastic pipes	✓	✓	Partial
Fixes dislocation damages	✓	✓	✘
Gives good ring rigidity/stability	✓	✓	✘
Gives a smooth inner surface	✓	✓	✘
Guaranteed even thickness of goods	✓	✓	✘
Service life > 40 years	✓	✓	✘
Warranty > 5 years	✘	✓	✓

Figure 3: Comparison between different methods to renovate the drainage system (repiper.com, 2016).

4.2 EXTERNAL FINDINGS

This paragraph is aimed to collect information regarding the Location Advantages matter described by Dunning (1993) and Agarwal & Ramaswami (1992) and presented in Figure 3. It is focused on two fundamental topics: the analysis of the Italian market's size and growth potential and the investment risk assessment. The overall purpose is to

collect relevant data to determine the attractiveness of the Italian market for the commercialization of Repiper's technology.

For the extrinsic assessment of the market, data have been collected from the Italian Bureau of Statistics (ISTAT) and other specialized sources. Moreover, in order to deeply comprehend the potential of the Repiper's technology, information have been gathered by interviewing experts in residential buildings renovation.

4.2.1 MARKET POTENTIAL

The analysis of the Italian market potential starts from an overview over the Italian construction industry. The construction industry in Italy experienced a deep crisis during the last years. This phenomenon regards both the two most important business segments: homebuilding and large-scale construction. Data concerning the second quarter of 2015 show a reduction of the construction investments equal to 1.9%. The compound annual rate of change (CARC), representing the annual growth rate of an investment over a specific period, between 2009 and 2013 was equal to -19,9% (ISTAT, 2015). This sector is the one that less benefited from the overcoming of the economic recession. Moreover, when focusing on the homebuilding sector, the available information display even a worst situation. The Italian homebuilding industry, which consists of new residential buildings construction, shrank by 34.2% in 2013 to reach a value of \$9.9 billion (MarketLine, 2014). The fall in consumer demand is due to the limited assess to mortgage-based credit since financial institutions restructured and tightened their lending criteria. The forecasts confirm that this industry is particularly connected to the overall recovery of the Italian economy as a whole.

The lack of investment in the Italian construction industry, has been partially compensated by another positive trend: the so called "emergency maintenance" (renovations, remakes and new installations) . This phenomenon is due to different reasons. One has been explained before: the limited assess to credit provided by financial institutions to buy new houses. The other factors regard the increase in house prices, the age of the Italian building heritage and the adaptation to European standards (CRESME, 2012). These causes have pushed the families towards a trend of preservation and renovation of their houses.

The most recent estimate goes back to 2012 and it considers the incidence of emergency maintenance on the total investment in dwellings. In 2012 it was equal to 58% with the remaining 42% represented by investments in new houses; the same voices in 2000 were equal to 44% and 56% (ISTAT, 2015).

This premise was aimed to provide a general overview on the Italian construction and homebuilding industry. The next section of the paragraph is focused on the market potential assessment for Repiper's technology. The following approach has been used to collect relevant information. Since this technology is applied to renovate the drainage system, much of the potential depends on the age of the buildings in that specific country. Therefore in this paragraph the attention is focused on the data collection regarding the residential buildings in Italy. More specifically the information gathered take into consideration two fundamental characteristics. The first and most important is the age of the Italian residential buildings. The latter examines the state of conservation of the dwellings. This method was selected since it represents the most reasonable way to determine the potentiality of this technology in a certain market. Moreover the same technique was already used by Repiper when collecting information regarding other target markets in Europe.

This analysis is run by using data provided by the Italian National Institute of Statistics (ISTAT). The information are extrapolated from the census of population and dwellings of 2011 (ISTAT 2011). In order to estimate the market potential it was used the same approach employed by Repiper in previous analysis. More specifically, the company used the year 1970 as a threshold to consider the old buildings where the technology could be used to renovate the drainage system. The pipes older than forty years are estimated to be currently worn out and damaged and they necessitate to be renovated. Therefore to estimate the market potential for its product, Repiper considered the percentage of these dwellings older than forty years: the average life cycle of the pipes.

In this study the attention is focused on the residential buildings for two reasons. Firstly, this is the principal segment where the technology has been applied and that the company has targeted. Secondly, this is the segment in which ISTAT provides more

accurate information and for this reason it is the most suitable in order to transparently and effectively understand the potentiality of this technology.

The Italian residential buildings are classified by ISTAT in eleven groups considering the age factor. For the purpose of this thesis, the attention is addressed to the ones built before 1970 in order to evaluate the current market potential. Moreover, to assess the market growth in 2021, another age class (1971-1980) has been included. Furthermore in a preliminary table, information regarding the conservation state are gathered. ISTAT provides data dividing this factor in four groups: poor, mediocre, good and excellent state of conservation. This information are collected in order to shed light on the conditions of the Italian buildings prior to 1970.

These are the data collected regarding the Italian residential buildings erected before 1970 and between 1971 and 1980. In the Table 2 the data are grouped considering also the conservation state factor. In this way additional information on the condition of the construction heritage are shown. This table displays the condition of the Italian buildings. When considering those built before 1970, the 3% is in poor state, the 21% in mediocre, the 54% in good and the 22% in optimal conditions.

From the Table 3 we can infer information regarding the percentage of residential buildings dated back to 1970. According to ISTAT (2011) in Italy in 2011 there were 1,218,698 residential buildings on the whole and 6,911,180 buildings were older than forty years. If we consider the same group in 2021, they will be 9,028,831 units. Therefore in 2011 the 57% of the residential buildings were dated more than forty years while the percentage will grow up to the 70% in 2021 (Table 3).

The estimation for 2021 is made considering that the rate of growth of the Italian new residential buildings can be estimated as 6% between 2011 and 2021 (Disconzi and Lorenzoni, 2014).

	State of conservation		State of conservation		State of conservation		State of conservation		TOTAL
	IN POOR STATE		MEDIOCRE		GOOD		EXCELLENT		TOTAL
Age of construction	num.	%	num.	%	num.	%	num.	%	num.
Before 1919	74561		441737		896196		420010		1832504
1919 - 1945	53159		348766		672771		252311		1327007
1946 - 1960	36389		375174		940919		348354		1700836
1961 - 1970	20126		320106		1209616		500985		2050833
TOTAL	184235	3%	1485783	21%	3719502	54%	1521660	22%	6911180
1971 - 1980	11533		221145		1254545		630428		2117651

Table 2: Italian residential buildings previous to 1980 divided by state of conservation
(Elaboration from ISTAT, 2011)

IN 2011		IN 2021	
num.	%	num.	%
6911180	57%	9028831	70%

Table 3: Residential buildings with over forty years in Italy (Elaboration from ISTAT, 2011)

The previous data regard the Italian market as a whole. If we take into consideration only the Metropolitan cities (Rome, Milan, Turin and Naples) and the Provincial Capitals these data show even greater results.

	IN 2011	IN 2021
Metropolitan Cities	76%	85%
Provincial Capitals	69%	80%

Table 4: Residential buildings with over forty years in Italian Metropolitan Cities and Province chief town (Elaboration from ISTAT, 2011)

As shown in the previous table the percentage increases up to 76% in Metropolitan cities and up to 69% in Provincial capitals. When estimating the values in 2021 the percentage exceed the 80% in both groups.

Lastly, in order to shed light on the differences between geographical areas, an analysis is provided regarding the building age considering five areas (Table 4). The north-west group includes Piemonte, Valle d'Aosta, Liguria and Lombardia. The north-east regions are: Friuli Venezia Giulia, Trentino Alto Adige, Veneto and Emilia Romagna. The center is represented by Toscana, Umbria, Lazio, Marche. The south group includes Abruzzo, Molise, Campania, Basilicata, Puglia and Calabria and the Islands are Sicilia and Sardegna. In 2011 the areas with the higher amount of old buildings are north-west and south, the most populated ones, but the data do not show huge differences between the groups. Nonetheless it is important to underline that, according to the ISTAT (2015), the emergency maintenance investments are more frequent in the north.

In this area the families spend on average 6400 euros while in the southern regions the average expenditure is equal to 3900 euros.

	TOTAL	%
NORTH-WEST	1727463	25,00%
NORTH-EAST	1330754	19,26%
CENTER	1209798	17,50%
SOUTH	1662696	24,06%
ISLANDS	1113724	16,11%

Table 5: Italian residential buildings with over forty years in 2011 divided by geographical area (Elaboration from ISTAT 2011)

4.2.2 INVESTMENT RISK

This paragraph is aimed to collect information to assess the investment risk in Italy. As explained by Agarwal and Ramaswami (1992) this factor describes the uncertainty over the continuation of current political and economic conditions which can affect the activity of a firm in that country.

4.2.1.1 Political Environment

Italy has been a democratic republic since 2 June 1946 when the monarchy was abolished with a popular referendum. The Italian state is centralized and limited power is assigned to local entities. Italy is divided in twenty regions with limited governing powers in specific areas. Five regions: Sicilia, Sardegna, Trentino Alto Adige, Valle d'Aosta and Friuli Venezia Giulia have special autonomy powers and they have a different legislative, administrative and financial autonomy. The reform of 2001 regarding the fifth title of the Constitution (l. Cost. 3/2001) appointed further powers to the regions and it increased the decentralization in the Italian government system. The Italian Constitution, ratified in 1948, establishes a bicameral parliament (Chamber of Deputies and Senate) which is responsible for the legislative power. Every legislative initiative must be approved by the majority of the members in each chamber. The judiciary power is entrusted to the magistrature which is independent from any other power. The executive authority is the Government which is composed by the Prime Minister, the Ministers and the Council of Ministers. The Prime Minister is nominated

by the President of the Republic who, in turn, is elected every seven years by the parliament jointly sitting together with regional delegates.

Political stability and continuity

Since the beginning of the republic there have been frequent turnovers until now (more than sixty). The so called *First Republic*, until 1992, was dominated by the Christian Democratic (DC) party. The following political phase was characterized by the succession of center-left and center-right coalitions. Due to the inability to elect a stable government the current Italian Prime Minister, Matteo Renzi, is supported by a coalition of center-left and center-right parties since February 2014.

Government Involvement in Business

The Italian government formerly and significantly intervened in the economic life. The state chose to intervene mainly through state-owned companies after the Second World War in order to overcome the economic conditions due to the conflict. This trend went on until the nineties of the previous century: in this period the Italian government decided to privatize many important state owned companies such as SME and ENI. This intervention sanctioned, at least from the formal point of view, the exit of the Italian state from the economic activity.

4.2.1.2 Economic Environment

The analysis of the economic environment is based on information regarding the Italian economy as a whole, the exchange rate between Euro and Swedish krona and a deeper examination regarding the conditions of doing business in this country.

Italy is the eighth largest economy in the world with 2,8% of the world's GDP (Business Sweden, 2015). Considering the overall economic scenario, the 2015 can be considered a turnaround for the Italian economy since the GDP started to grow again (+0,8%) after three years of recession (ISTAT, 2016). The following table summarizes the GDP and GDP per capita data in 2015 for both internal and external country.

	GDP (Currency US\$) Bilions	GDP per capita (Currency US\$) Units
Italy	1,819.047	29,847.382
Sweden	483.724	48,965.949

Table 6: Italian and Swedish GDP data in 2015 (IMF World Economic Outlook Database, 2015)

Though ISTAT certified the slow growth of the Italian economy, this progress is inferior compared to the Government's expectations and this could limit the growth and reform plans for the future. On the other hand the inflation rate reached, in 2016, the lowest level since 1959: +0,1% (ISTAT 2016). The 2015 is the third consecutive year in which this index has been decreasing.

To completely understand the Italian economic environment it is important to shed light on the huge differences between northern and southern regions. Northern Italy is the country's engine. This is where most of the industries and the financial sector are concentrated; northern Italy stands for 70% of the import and 75% of the export. The average income in this part of Italy is 50% higher than the EU average and almost double compared to the southern regions of the peninsula (Business Sweden, 2015).

The exchange rate variation between Euro and Swedish Krona has been analyzed in order to collect all the relevant information regarding the commercial conditions between Sweden and Italy. Considering the last year, from April 2015 to April 2016, the minimum value was 9.1567 SEK/€ in December 2015. In the same period, the highest value was equal to 9.6557SEK/€, in August 2015, with an average value of 9.3393 SEK/€ (Figure 3). If we consider the variation during the last three years, 2013-2016, the graph below shows a devaluation of the Euro against the Swedish krona. In April 2013 the exchange rate was equal to 8.3138 SEK/€ and it increased with small fluctuations until the highest value in August 2015 (Figure 4).



Figure 3: Exchange rate EUR-SEK between April 2015 and April 2016 (European Central Bank, 2016)



Figure 4: Exchange rate EUR-SEK between April 2013 and April 2016 (European Central Bank, 2016)

In order to conclude the market attractiveness assessment, the Italian economic environment has been examined considering the ease of doing business index. This index has been created by the World Bank in order to rank the countries considering how easy it is to do business there taking into consideration how laws and regulations directly affect businesses. An higher ranking indicates high quality and simple regulations for companies and a stronger protection of property rights. A nation's ranking index is based on ten sub-index. For the purpose of this thesis not all the sub-indexes are analyzed but just the most connected to this case. Among the 189 nations analyzed by the World Bank, Italy is ranked 45th in 2016 (Worldbank, 2016).

The first index to take into account is *Starting a Business*. In this item Italy is ranked at the 50th position. To start a business in Italy an organization needs 5 procedures and at least 5.5 days. The cost to start a business, as a percentage of income per capita, is 13.8%. If a company aims to build a production facility or a warehouse in Italy, it takes 10 procedures and 227.5 day to deal with construction permits (86th). Considering the *Registering Property* activity, Italy is ranked 24th. Here there are 4 procedures to complete and it takes ten days to register the property. When dealing with the ease of *Getting Credit*, Italy is at the 97th position in the world ranking. Probably the most critical factor when considering the Italian economic environment is related to *Paying Taxes*. Italy is ranked 137th among 189 countries in the list. The total tax rate is equal to the 64.8% of the profit and, more specifically, the profit tax is the 19.5% of the profit. The labor tax and contributions amount to the 43.3 % and the other taxes to the 1.9% of the profit. The last two sub-indexes to take into consideration for the Repiper case study are *Enforcing Contracts* and *Resolving Insolvency*. In the first factor Italy is at the 111th position. It takes on average 1,120 days to enforce a contract and the cost is 23.1% of the claim. Lastly, in the *Resolving Insolvency* factor Italy is ranked 23rd. Here the recovery rate, as cents on the dollar, is equal to 63.1 and it takes on average 1.8 years. Considering the foreign direct investments (FDI), Italy was ranked the 20th most attractive destination for FDI in 2013. In 2013 the inflow was EUR 18 billions: an increase of +1174% with respect to the previous year (Business Sweden, 2015). The largest sectors of FDI inflows are mining and quarrying, manufacturing of vehicles, manufacturing of textile, construction and manufacturing of chemicals.

4.2.1.3 Trade environment

Sweden and Italy are both members of the European Union and of the Common European Market. The unique market guarantees the free circulation of goods, services, people and capital within the European Union boundaries (europa.eu, 2016). Within the Common European Market there is a regime of free competition between companies and the technical, juridical and bureaucratic barriers were abolished. In this way the European companies that trade within the EU boundaries can freely access almost 500 million consumers. Considering this specific case, there are no obstacles or barriers for Repiper, as any other Swedish company, to enter the Italian market. Moreover no specific limit was found for the technology and the products that the company is willing to commercialize. Considering the Italian communication structure, this is very wide and varied and there are not great impediments related to transportation and shipping. In Italy there are 156 harbors, 6.757 km of highways, 98 airports and the railway network is 24.299 km long.

When considering the commercial relationship between the two countries, Italy is ranked at the 12th spot among the countries where Sweden exports more. Italy represents the 2,9% of the Swedish exports (infoMercatiEsteri, 2016). The Swedish companies have a long tradition of foreign direct investment (FDI) in Italy, especially in the northern part of the country. More than 180 Swedish companies are established in Italy and there is a huge amount of companies doing business through partnerships. During the last years several companies operating in the environmental technologies and renewable energy sources industries entered the Italian market. This phenomenon is confirmed, in May 2008, by the signing of the protocol between Kilometro Rosso (the scientific and technological park located in Bergamo) and Assosvezia (the Italian-Swedish Chamber of Commerce located in Milan) in order to start the exchange of technologies and the access to information regarding the R&D. This agreement represents an incentive to new investments by Swedish companies in Italy and vice versa since the two entities decided to share databases and contacts in order to identify new business opportunities between the two countries (ICE, 2010).

The shipping and distribution infrastructure must be analyzed in order to completely estimate the trade environment within a specific country. Several indexes can be utilized. The Liner Shipping Connectivity Index (LSCI) describes how well a country is connected to global shipping networks. This index is computed by the United Nations Conference on Trade and Development (UNCTAD) and it is based on five components of the maritime transport sector: number of ships, their container-carrying capacity, maximum vessel-size, number of services and number of companies that deploy container ships in a country's ports. The index provides a value out of 100 for each country (Worldbank, 2016). Another relevant index is the Flight Connectivity Index (FCI) which measures the connectivity in the global air transport network and captures the full interaction among all network nodes, even when there is no direct flight connection between them. This measure of connectivity is closely related to important economic variables such as the degree of liberalization of air transport markets and the extent of participation in international production networks (Worldbank, 2016).

For the purpose of this thesis, these indexes have been analyzed considering the two countries object of the thesis, Sweden and Italy, and other four important markets in Europe: Germany, France, UK and Spain. The data regarding the LSCI refer to 2015 while the FCI ones regard 2009.

	LSCI	FCI
Germany	97,8	110
France	77,1	103
Uk	95,2	105
Italy	67,4	85
Spain	84,9	72
Sweden	55,9	39

Table 7: LSCI and FCI comparison between European countries (Worldbank, 2016)

In conclusion the current account balance was analyzed to determine the incidence of foreign trade in the two countries. The following table shows the incidence of Import and Export activities as percentage of GDP in both countries in 2014.

	Import of goods and services (% of GDP)	Export of goods and services (% of GDP)
Italy	26,50%	29,60%
Sweden	40,80%	44,50%

Table 8: Import and Export as % of GDP in Italy and Sweden in 2014 (Worldbank, 2016)

4.2.3 EXPERTS' EVALUATION

In this paragraphs the information collected through interviews with industry experts have been gathered together. The main purpose is to have a clear comprehension of how this kind of renovations is realized in Italy and to determine critical factors related to the commercialization of Repiper's technology.

Firstly the experts have been asked about the potentiality of this innovation in Italy. They agree that a potential market for this technology exists and they add additional comments. This technology, as expected, could be particularly applied in the buildings erected between the sixties and the end of the seventies. The experts explain how these are the dwellings where most of renovations are realized in this moment. Moreover they explain that, from their point of view, this technology has an higher potential when applied in buildings with respect to single houses. In the apartment buildings the interventions that cause invasive breakage (walls and floor) are always seen in a bad way due to the frequently strained relations between the residents. Considering the specific features, both the engineer and the plumber asked the writer whether this technology has any benefit related to noise reduction. In Italy this is a huge problem in many drainage system. Repiper's technology, as explained by Mr Karlsson, does not provide these benefits but this could be an important information considering the future development of Repiper's innovation.

The diameter of the single components in the drainage system was analyzed to gather technical information regarding the dimensions of the pipes. The soil stack (main drain pipe within the building) measures between 100 and 160 millimeters (100, 125 or 160). The connection between the soil stack and the branch lines, in most of the cases, is wide 100 millimeters. The branch lines can vary more in dimension: the range is usually between 32 and 160 millimeters (32, 40, 50, 75, 100, 125 or 160).

With respect to the materials the attention is focused on the houses built during the so called “construction boom” in the sixties until the end of the seventies. During the sixties most of the pipes in Italy were made of lead or asbestos and cement. During the seventies, especially in the second half, they started to use mainly PVC (polyvinyl chloride) which was the most used material for many years later. More specifically the soil stack is almost everywhere made of PVC, while the branch lines can be alternatively made of lead, asbestos and cement or PVC. With respect to the methods currently used in the renewal of the drainage system in Italy, the most employed is the traditional one that implies the replacing of the pipes. This method causes inconvenience for the tenants that either have to evacuate the apartment or live in the noise and dust during the renovation since this approach requires the breakage of floor and walls.

The potential critical factors related to the commercialization of this technology were asked during the interviews. According to the Engineer Roberto Basso, if the innovation does effectively work, the most crucial aspect is the distribution chain. He explains that, in this cases, the owner of the house tends to completely trust the company or the plumber that realizes the renovation. Sometimes, for example, they get in touch with new technologies searching on the web but when the company or the plumber shows his reticence to these new techniques people tend to bend their beliefs. Indeed renovation companies and plumbers prefer to use the same products and technologies they have been using for years. They are usually reluctant to innovations if they are not presented through the right distribution channel. He claims, for instance, that the education and training courses that the manufacturing companies organized were very successful to introduce new methods in the building renovation industry such as with the Exterior Insulation and Finishing System (EIFS). Nowadays the companies

themselves offer this kind of courses in order to make the customer aware and confident of the new techniques. In conclusion, the most relevant incentive is certainly the saving: in this perspective the issue is to convince the property owner that the preventive thinking is the right way and that a rather small investment today can help avoiding a large cost tomorrow.

5. ANALYSIS

Based on the empirical and theoretical findings, this chapter analyzes the different sections that constitute the conceptual framework.

The overall analysis discussed in this section is carried out by considering the internal and external data collected in the previous chapter. Here the information gathered both from internal and external sources are organized in order to follow the conceptual framework developed at the end of the second chapter (Figure 3). The attention is focused on the interaction between internal and external forces that affect the internationalization process of the company. This analysis is divided in two sequential sections.

The first one regards the application of the eclectic framework (Dunning, 1992; Agarwal and Ramaswami, 1992) to the specific Repiper case study. The main objective is to evaluate whether Ownership, Location and Internalization (OLI) advantages for the company exist when considering the Italian market and to estimate their intensity. The final outputs of this paragraph are the evaluation of the company asset power, the assessment of the Italian market attractiveness and the appraisal of the integration costs related to this opportunity.

Once this first assessment is over, the writer moves to the following step. This is based on the international market entry strategy model developed by Root (1998). The main goal of this paragraph is to determine the most suitable entry mode to access the Italian market.

After this analysis the writer possesses the necessary data in order to provide managerial recommendations to the company. More specifically information are provided to the company management about the possibility to enter the Italian market, how to enter it and which factors are necessary in order to successfully commercialize Repiper's innovation.

5.1 ECLECTIC FRAMEWORK ANALYSIS

As explained in the second chapter, this framework has been chosen since it has demonstrated to be both a descriptive and a normative model (Brouthers et al., 1999). The general idea behind this model is that when OLI advantages increase, companies tend to prefer more integrated entry modes such as wholly owned subsidiaries and joint ventures; conversely they favor less integrated modes when they perceive low advantages (Brouthers et al., 1999). In this specific case the framework is used to evaluate every advantage with respect to Repiper.

5.1.1 OWNERSHIP ADVANTAGES

According to Dunning's eclectic framework, ownership advantages must be found inside the company and they regard three main factors: size of the firm, product differentiation and international experience (Agarwal and Ramaswami, 1992). In this paragraph they are analyzed one by one.

The *size of the firm* has been evaluated considering different factors such as the overall sales volume, the internal structure, the number of employees and the financial resources available to the company. First of all the company can still be considered as a start-up and such it is organized. As explained in the previous chapter, the company which owns both Repiper Nordic AB and Repiper International AB was founded in 2008 but, as sustained by the CEO, the real commitment to growth and international expansion started few months ago when he was hired. The overall turnover is still limited and it is equal to 8 million SEK. Repiper's personnel currently consists of two employees: the CEO and the Logistics & Sales manager. The production is completely externalized to other companies: partly in Sweden and the remaining in China. Nonetheless, at this stage the company has no incentive to internalize this function until it does not reach volumes that ensure economies of scale. On the other hand, in this expansive phase, the company needs additional personnel in order to manage its international expansion. They mainly need other employees in the sales and product development functions. Moreover considering another critical function, logistics, the company's strategy is to outsource it to an external partner that will take responsibility

for the shipping activity. In conclusion, it is important to underline how the company has collected the financial resources to start its growth and internationalization process.

To sum up, the company size is very limited and, as claimed before, it is practically organized as a start-up. The general idea is to concentrate one's efforts on the international expansion to increase the turnover without directly managing some internal operations such as manufacturing or shipping. Considering the previous analysis, the ownership advantages related to the *company size* are deemed low.

Considering the *product differentiation* with respect to the competitors active in the Italian market it is important to distinguish between two groups. The first one regards the majority of the players in the drainage system renovation field. They are the companies that use the traditional method based on the replacing of the pipes. The latter is represented by an alternative technology that, as Repiper's method, does not require the replacing of the old pipes: the so called coating. If we consider the Italian competitive environment, this technology is offered by another Swedish company that has already entered the Italian market: Tubus system.

With respect to the first group, Repiper can strongly differentiate from the traditional approach. The most important difference is related to the cost dimension. The traditional approach implies high costs related to the breakage of the walls and the floor. Moreover these costs are also due to the long installation times. When considering the tenants living in the apartment, other important voices come up. The traditional method produces demolition dust and it can imply asbestos decontamination. Thereby in many cases this practice necessitates the moving out of the residents from their dwellings. On the other hand, Repiper's method implies lower costs, faster installation and no moving out for the tenants. With respect to the final result, the replacing techniques provides good results; its weakness is related to the installation.

Conversely the coating technique guarantees good performances with respect to the installation but it is worse if you consider the results. As explained in the empirical findings, this method is cheaper than Repiper's relining. Thereby it can be deemed superior considering the price dimension. On the other hand it definitely guarantees lower results. It can only partially seal existing cracks and holes, it cannot be employed to close off soil stack and branch lines and it can be only partially used in plastic pipes. Moreover the coating method is not self supportive: this means that the new layer installed inside the old pipe cannot work without the old pipe if this completely breaks. These and other technical features differentiate the overall result of the injective technology (Figure 3). To sum up, what really distinguishes these two methods is that using Repiper's technique you create a new plastic pipe inside the old one which is self sustaining and that has a service life longer than forty years. Two additional conclusions derive from the competitor analysis. The attempt by Tubus system to acquire Repiper demonstrates the quality of the method and the threat that Repiper represents for Tubus system. Furthermore the previous entrance of Tubus system into the Italian market can be considered a disadvantage for Repiper since this competitor has already started its activities in the target country but, at the same time, it also demonstrates that a potential market actually exists.

Considering the previous analysis, with respect to both traditional and coating methods we can infer that Repiper's technological differentiation is *high*. Repiper possesses a competitive advantage with respect to both the alternative methods. Considering the replacing approach the difference is based on the installation procedure. The superiority over the injective technology is related to the results.

The last factor contemplated in Dunning's eclectic framework is the international experience to estimate the ownership advantages (Dunning, 1992; Agarwal and Ramaswami, 1992). This factor has been evaluated considering two main variables: the percentage of sales coming from markets outside Sweden and the employees' international experience. Considering the first variable, the percentage of sales coming from abroad is very limited and equal to the 5% of the overall turnover. The company has practically embarked on trade relationships with just two foreign countries,

Germany and Iceland, and it is currently bargaining with a US organization to enter the American market. We can say that Repiper's international expansion is starting while writing this paper.

The employees' international experience is medium. On one hand the new CEO has an extensive international background outside the Swedish boundaries. On the contrary the Logistics and Sales manager has more a Scandinavian-limited experience. As explained before, the company needs additional personnel even to increase its international outlook.

The overall analysis regarding the *international experience* at Repiper shows that the ownership advantages related to this last variable can be assessed as medium-low.

Overall assessment

In Dunning's eclectic framework, the more a firm located in a country possesses O advantages with respect to those of another, the higher is the incentive to access and exploit them in that foreign location (Dunning and Lundan, 2008). Nonetheless the researchers who have employed this framework in their studies show how there is not a complete agreement over the variables included in the ownership advantages. Considering for instance the size of the firm, some scholars claim the existence of a positive relationship between this variable and the choice to enter foreign markets using equity-based entry-modes (Agarwal and Ramaswami, 1992; Brouthers, Brothers and Werner, 1999). On the contrary when this model has been applied to SMEs such as in Brouthers and Nakos (2002), no statistical support was found to demonstrate that the firm's size can influence the entry mode choice. The same study shows also a limited significance of the international experience factor (Brouthers and Nakos, 2002). As for the size variable, several studies such as Agarwal and Ramaswami (1992) show conversely that experience in international markets strongly influences the entry mode decision and that high international experience is connected to the use of equity entry mode. As explained above there is no agreement among the theoretical sources regarding this variable. On the other hand, considering the product differentiation factor, all researchers seem to agree on its relevance. More specifically it has been argued how non-equity modes may reduce the potential benefits related to

differentiated products (Agarwal and Ramaswami, 1992; Brouthers, Brothers and Werner, 1996). This is confirmed by Brothers and Nakos (2002) who demonstrate how SMEs with more differentiated products tend to prefer equity-modes of entry and vice versa for the ones with less differentiated outputs. From the theoretical sources collected and analyzed in this thesis, product differentiation seems to be the most influential factor among those included in the ownership advantages.

When considering the specific Repiper case, the company shows an high level of differentiation with respect to the competitors into the Italian market. As previously explained, the method provided by the Swedish company is strongly different from the others and it provides a completely different output. On the other hand, the firm is still in the start-up phase even though it was founded eight years ago. Thereby its size and international experience levels tend to be quite low. Nevertheless the company has high advantages related to product differentiation: the only variable that is unanimously considered as determinant in these decisions. Therefore, considering the overall previous analysis, Repiper's ownership advantages can be deemed *medium*.

OWNERSHIP ADVANTAGES

Size of the firm	LOW
Product differentiation	HIGH
International experience	MEDIUM-LOW
OVERALL ASSESMENT	MEDIUM

Table 9: Ownership advantages assessment

5.1.2 LOCATION ADVANTAGES

The location advantages include two main variables to be analyzed in order to determine the market attractiveness for a specific target market. They are market potential and investment risk (Dunning, 1992). The first one is based on the evaluation of market's sales and growth potential for Repiper's technology into the Italian market. The latter considers the stability of political, economic and trade conditions in order to estimate the uncertainty over the profitability of Repiper's operations in that country (Agarwal and Ramaswami, 1992).

The *market potential* analysis starts with considerations regarding the positive trend in the emergency maintenance interventions in Italy. The reasons at the base of this phenomenon have been explained in the previous chapter. The final result is the tendency of the Italian families to invest less in new houses and more on the renovation of the existing dwellings. The share of the total investment in dwellings related to emergency maintenance passed from 44% to 58% in ten years, between 2002 and 2012 (ISTAT, 2015). Moreover the analysis takes into consideration the features of the residential buildings in Italy and it is focused on two main variables: age and conservation state. When considering the age factor, Italy shows a high percentage (57%) of buildings older than forty years and this value will reach 70% in 2021. This data are in line with the current European average, 60%, (Repiper, 2016). The data show greater and above the average results when considering the projections to 2021. Moreover, when the attention is focused on Metropolitan and Provincial Capital cities the percentage of buildings where the firm's technology could be applied reaches values of even 80%. Furthermore the data collected in the previous chapter show that almost one fourth of the Italian buildings are in poor or mediocre state. Lastly, the market potential assessment has shown relevant information regarding the different geographical areas in Italy. The north-west regions seem to be the most interesting for a potential introduction into the Italian market if you consider the age of the buildings and the financial resources devoted by the families to emergency maintenance interventions.

From the above mentioned data it emerges that the market potential for Repiper's technology is high. The information regard the status of the residential buildings in 2011 thereby the data must be adjusted to consider the current situation. Moreover, when focusing on the biggest cities the data are above the average. In conclusion the projections to 2021 show data that clearly describe a positive growth in the sales potential. To sum up, Italy represents the opportunity to access a new and wide market for Repiper's technology thereby the overall assessment regarding the market potential is *high*.

Considering the *investment risk*, the first factor discussed in this chapter regards the political conditions. Although there have been frequent turnovers during the last sixty years, Italy is a developed country that reached a political stability after the Second World War. Moreover the Italian government has demonstrated, during the last twenty years, a certain independence from the economic activity. Thereby no critical aspect related to political conditions exists when considering the potential entry of a foreign company in Italy.

When assessing the economic conditions in Italy, a deeper evaluation is required. Firstly, an overview of the Italian macroeconomic conditions has to be provided to determine the overall economic environment. The Italian economy is slowly recovering from the crisis that forced the country into a recession between 2012-2014. In 2015 the GDP showed a positive, even though limited, growth (+0,8%). Nonetheless if we look at the global picture, the Italian economy is still in stagnant conditions.

With respect to the exchange rate between Swedish krona and euro, Figure 3 shows an appreciation of the Swedish currency with respect to the Euro. This appreciation has been constant and without huge fluctuations during the last year. Therefore, although a currency depreciation can generally discourage imports, in this case the exchange rate does not seem to be a particularly influential factor that can increase the investment risk in Italy. Lastly, the Italian economic environment has been analyzed considering the ease of doing business index. Italy is located at the 45th position, after countries such as Macedonia, Malaysia and Mexico. Some specific factors seem more critical than others: paying taxes, enforcing contracts and getting credit. Considering the taxation, Italy is located at the 137th position among 189 countries. Nevertheless Italy is still considered an attractive market for foreign companies as shown by the FDI data in the previous chapter.

The last factor included in the investment risk evaluation regards the trade conditions. No specific limitation emerged during the data collection regarding the Italian Environment. As member of the European Union, in Italy there is a free competition regime. Every commercial boundary was abolished and no limit exists for the commercialization of Repiper's innovation. Moreover, considering the specific experiences of Swedish companies, Italy shows to be well receptive of Swedish

products and technologies since more than 180 companies are active in the Italian market and many others sell their products through partnerships.

Considering the different components included in the investment risk assessment, the analysis proves that neither political nor trade limitations exist for a Swedish company willing to enter the Italian market. Moreover there is no specific limit to the specific company's technology. On the other hand the empirical findings show how, even though Italy is the eighth largest economy in the world, its economy is still in a recovering phase and there are some drawbacks related to business conditions. Nevertheless the macroeconomic trends display that the GDP is slowly growing again and a cautious optimism exists. The overall assessment is that the investment risk related to Italy is *medium-low*.

Overall assessment

The overall assessment of the Italian market attractiveness is based on the two previously described factors: market potential and investment risk. However these variables must be considered in a different manner: while the first one describes the potential opportunities related to the entrance in a foreign market, the latter considers the negative risks related to this decision.

In the eclectic framework the location advantages can be explained by different reasons. In general one of the major and most frequent advantages is the access to a wide market for the company products (Dunning, 1992). This is exactly what the Italian market represents for Repiper: the opportunity to enter a country which, considering the collected market data, shows high sales and growth potential. As explained by Nakos and Brouthers (2002) certain foreign markets may provide location advantages simply related to the market size or to the potential for market growth. This is the situation faced by many start-up companies: they mainly enter foreign markets to expand their sales volume and find new clients. Indeed most of the scholars, when employing Dunning's eclectic framework, have focused their attention on this variable (market potential) and on the investment risk to estimate the market attractiveness. With respect to the market potential, the theoretical sources seem to agree on how

this factor strongly influences the entry mode decision; firms tend to prefer equity modes of entry in high potential markets and non-equity modes where market potential is low (Agarwal and Ramaswami, 1992; Brother and Nakos, 2002).

On the other hand the market opportunities can not be completely estimated until the the potential investment risks are evaluated. As explained by several authors, international expansion is not without risks. They can be represented by foreign exchange risk, political instability, trade restrictions, unexpected changes in labour and tax laws and many others depending on the specific target country (Dunning, 1988, 1992; Agarwal and Ramaswami, 1992; Brouthers and Nakos, 2002). In this case Italy proved to be a fairly risk-less country when considering political, economic and trade policies. The remaining variability is due to the overall economic situation and to certain factors included in the ease of doing business index (Worldbank, 2016).

In conclusion the overall assessment regarding Repiper’s location advantages into the Italian market can be deemed *medium-high*. The market potential analysis shows a wide bucket of potential buildings where the firm’s technology could be applied and the projections display even greater results. On the other hand the only potential investment risk is related to the overall economic conditions in the country. Nonetheless this slow trend of the Italian economy is compensated by the positive data collected in the emergency maintenance field where Repiper is active.

LOCATION ADVANTAGES

Market potential	HIGH
Investment risk	MEDIUM-LOW
OVERALL ASSESSMENT	MEDIUM-HIGH

Table 10: Location advantages assessment

5.1.3 INTERNALIZATION ADVANTAGES

The last variable in Dunning’s eclectic framework regards the Internalization advantages. As explained by Brouthers and Nakos (2002) they regard the company’s decision to integrate within the organization activities that can alternatively be performed by the market. They regard, for instance, the decision to establish a

manufacturing subsidiary or the development of a distribution channel. In this specific case the assessment of the Internalization advantages is run by embracing the Agarwal and Ramaswami (1992) interpretation of this variable. They consider internalization advantages as contractual risks and divide this factor in three subsets: relative costs of making and enforcing a contract, the risk of disseminating proprietary know-how and the costs of controlling and monitoring products and services.

Considering the risk of disseminating proprietary know-how, this issue is typical of companies as Repiper that has mainly pursued a technology strategy until now (Knockaert, 2012). As explained in the previous chapters, Repiper is currently operating in the market for ideas (Gans and Stern, 2003) and it is partnering with other companies for the commercialization of its innovation. Nevertheless the company also commercializes the wear products employed in the sewage renovation process. Moreover they are also establishing relationships with companies that directly install new pipes. For instance they signed a user agreement with an Icelandic firm. This particular business model implies the risk of dissipating knowledge. Indeed, the enforcement is a critical factor every time an organization operates in the so called market for ideas (Gans and Stern, 2003), regardless from the country in which the technology is exported. In this case the critical activity is related to the infringement of the patent by other companies. With respect to this risk, as claimed by the CEO, the company must be very selective in the choice of partners and clients in order to decrease the probability of patent and contract infringement. This factor is strictly related to the cost of making and enforcing contracts. Being more specific, the cost of making contracts is currently almost irrelevant. Conversely the cost of enforcement can be more problematic considering the already mentioned issues related to patent and contracts infringement. Considering the specific Italian case, according to the WorldBank (2016) Italy is ranked at the 111th position: the contract enforcement takes quite a long time (1,120 days). On the other hand Italy is ranked at the 23rd position in resolving insolvency. From the previous analysis both the costs of making and enforcing contracts and the risk of disseminating proprietary know-how can be estimated as *medium-high*. Nevertheless it is fundamental to specify how these variables only partially depend on the specific-country conditions but they are intrinsic in the

commercialization of such a technology as confirmed by the company experience in the other foreign countries where Repiper has already entered.

The last variable included in the internalization advantages is the cost of controlling and monitoring product or service quality. As Agarwal and Ramaswami (1992) state, this risk of quality deterioration is higher when the company operates in another country with a local partner or a licensee. Considering Repiper's case, the quality of the products employed in the renovation is fairly easy to control and it does not involve any particular issue for the management. On the other hand the critical aspect is related to the application of the overall relining method. If the company that practically applies Repiper's technology is not trained and skilled enough there is a high probability that the method is not applied in the proper way. Therefore the risk of losing quality is not related to the product itself but to the ability of the installer to implement the method. In this way the company should particularly take into consideration the training activity. In general the cost of controlling and losing quality is just related to a specific, even though critical activity, therefore it can be estimated as *medium-low*.

Overall assessment

In this paragraph an overall analysis of the Internalization advantages is provided. They are evaluated considering Repiper's value chain and the specific Italian market opportunity. As explained by Dunning and Lundan (2008), internalization advantages can explain why some activities are performed by the market while others are more efficiently organized if they are internalized in the company's hierarchy. Moreover they explain how this variable is augmenting its relevance since coordination achieved through external transactions is becoming increasingly popular (Dunning and Lundan, 2008). In this case the assessment of potential internalization advantages is provided by analyzing three different risks. As stated in the previous paragraph, the cost of making and enforcing contracts and the risk of disseminating know how are effectively relevant. Nonetheless they are only partially related to the specific situation of the Italian market and they are quite inherent to the technology strategy choice in general (Knockaert, 2012). Therefore these two kinds of cost/risk, although existing, are not specific to this country and therefore their relevance considerably decreases in this

assessment. On the other hand the cost of monitoring and controlling does not emerge as particularly critical. As explained by the CEO, the company has no incentive to internalize the backward activities in Sweden. The same is for the Italian case since no advantage exists considering production costs such as raw material and labour. The cost of controlling and monitoring quality is related to one of the most critical activities undertaken by the company: training. Thereby this is the only stage that the company should keep internal when pursuing the entry in the Italian market. From the overall assessment it emerges how the internalization advantages related to Repiper’s expansion in Italy are *medium-low*.

INTERNALIZATION ADVANTAGES

Cost of making/enforcing contracts	MEDIUM-HIGH
Risk of disseminating knowledge	MEDIUM
Cost of controlling/ monitoring quality	MEDIUM-LOW
OVERALL ASSESMENT	MEDIUM-LOW

Table 11: Internalization advantages assessment

5.2 ENTRY MODE FRAMEWORK ANALYSIS

The Root model has been introduced in the theoretical framework (Figure 1) as a pattern to evaluate and plan the elements of an international market entry strategy. This model is aimed to the strategic assessment of the entry strategy for a product/target market (Root, 1998). The author stresses how, without a planned entry strategy, a company has only a sales approach to foreign countries. In this paragraph the different steps of this model are analyzed taking into consideration both internal and external findings. Moreover the attention is focused on the third step which regards the choice of entry mode. In conclusion, it is proper to specify that this model takes into consideration companies already established which are willing to expand their footprint internationally. In this case the framework is partially adapted to Repiper’s condition of technology-based startup which is currently starting its international expansion.

5.2.1 CHOICE OF TARGET PRODUCT/ MARKET

This decision regards the match between a product marketed by the company and a specific target country. The first choice is particularly critical when the firm has to select among a wide range of products. Nonetheless Root (1998) claims that a company with a single product needs only to understand whether the product is suitable for that market entry. This is exactly the Repiper case. Being a relatively new company, Repiper does not have a range of products but simply a technological innovation whose international potentiality has yet to be expressed. In the empirical findings the CEO has explained how Repiper, when considering external markets, aims to commercialize the method as a whole which implies also the sale of the products employed in the renovation process. Therefore the firm does not need to choose which product is the most suitable for the foreign market but, more simply, whether the innovation has the necessary features to be profitable in that country. As stressed by Root (1998), the company has to evaluate the distinctive features that differentiate the candidate product or technology from the competitors' one. In this case the specific advantage owned by Repiper is based on the technological superiority of its method and the related benefits discussed in the ownership advantages paragraph. Once the company has identified the target product, the analysis goes on considering the most attractive target market (Root,1998). For the purpose of this thesis and also due to the time and resource constraints, a variation to the model has been made. The choice of the Italian market does not derive from a comparison with other potential target markets. Italy has been selected, in accordance with the company, for different reasons. First of all the already mentioned constraints did not allow the comparison between different countries. Moreover this choice has been undertaken after a preliminary screening of the Italian market to inspect if any potentiality existed. In conclusion the company management itself demonstrated to be prone to this choice since it had already approached the Italian market in 2012. Nonetheless, even though a deep comparison with other markets has not been run, the Italian market seems to be a good opportunity for Repiper due to several reasons. First of all, the age of the Italian buildings is close to the European average and the values are above the average in the biggest cities. Moreover the projections to 2021 are equal to the Swedish values (70%) and close to those in Germany (80%): the first country where Repiper entered outside

Scandinavia (Repiper, 2016). Secondly, the findings show that the technology does not require any particular adaptation in order to be applied into the Italian buildings. Lastly, as explained by the previous operations manager Ola Stål, the first response to the technology was very positive and he found that a huge portion of the Italian heritage requires a drainage system renovation.

In conclusion even though the model has not been completely followed considering the market selection, from the information collected and the comparison with the theoretical findings, the overall picture shows that a match between Repiper's innovation and the Italian market actually exists. Therefore, taking into consideration the market potential analysis previously provided, Italy represents a good opportunity to pursue in Repiper's international expansion process.

5.2.2 SETTING OBJECTIVES AND GOALS

In his book Root (1998) describes the International market entry strategy as a sequence of steps that can require an iterative approach if the plan fails in a specific phase. Once the target product/market choice is over, the company has to set the objectives and goals related to this target market. Since the company is currently approaching the first foreign countries, the objective does not particularly differ from a country to another. The main goal, as claimed by the CEO Joakim Hedelin, is to determine the most appropriate entry mode to exploit the technological superiority of the innovation. The fundamental reason that pushes Repiper to enter the Italian market is to increase the sales volume outside the domestic borders. For a Swedish company as Repiper, pursuing opportunity in foreign countries is essential to grow. The company has not set a unique business model and it declares to be prone to every entry mode with an exception. Indeed, according to the company's management, the export, named by Root (1998) as indirect export and agent/distributor exporting, is not a viable option. Moreover, since the company has pursued until now only contractual entry modes, if a cooperative mode proves to be the most fitting option the goal is to find one or more partners to establish long-lasting and profitable relationships for both organizations.

5.2.3 CHOICE OF ENTRY MODE

The third step in the Root model is the most important in this part of the framework and it analyzes the choice of entry mode. In this section the various factors involved in the Figure 2 are discussed. The results deriving from the empirical findings and those previously discussed in this chapter are processed in this framework to evaluate the entry mode decision. Three groups of variables are analyzed: the external factors regarding the foreign country, those external regarding the domestic country and the internal factors. More specifically the information processed in the framework derive from the data and information collected through internal and external sources. The outcome of this analysis is an indication of the most suitable entry mode for Repiper's innovation in the Italian market.

Here the various factors are discussed and an explanation for every choice is provided.

External factors (Foreign country)

- Sales Potential: The sales potential describes the expected sales for a certain product in a specific market. The data collected regarding the market's sales and growth potential show that the sales potential for Repiper's technology into the Italian market is high. This does not imply that the entrance into the Italian market is considered free from challenges but simply that the company can potentially access a wide market.
- Competition: As previously explained, no other company currently offers a relining method such as Repiper. Thereby the competition is represented by the countless group of companies that renovate pipes using the traditional method and by the only company, Tubus system, that offers an injective method. The competition can globally be considered atomistic.
- Marketing infrastructure: Italy scored high in the variables analyzed in the empirical findings (LSCI and FCI). The overall level of marketing infrastructure can be considered quite elevated. Nonetheless a distinction between northern and southern regions is required to completely evaluate the Italian case.
- Production costs: to estimate this factor the GDP per capita has been employed since it describes both the wealth and the cost of labour in a specific country.

Although Sweden presents an higher GDP per capita, the gap is not so relevant to deduce that the production cost is lower in Italy. Therefore production costs in Italy can be considered high.

- Import policies: Italy is member of the European Union therefore no import barriers exist for a Swedish firm. Thereby the import policies are deemed liberal.
- Investment policies: The common European Market guarantees also the free circulation of capital. Therefore foreign entities can freely invest in Italy although they are subject to the Italian taxation law.
- Geographical distance: Although Sweden and Italy are located at the extreme north and south of the European continent, as for the two previous factors, the European Union membership decreases the distance. Moreover the LSCI and FCI indexes are quite high for both the countries with respect to developing countries. Thereby the connection between these two countries is considered high and the geographical distance low.
- Economy: The Italian economy has not grown in the 2012-2014 triennium and it started to slowly expand again in 2015. Nevertheless the overall picture shows that Italy has not completely emerged from the crisis yet. Although it is recovering, the Italian economy can be deemed stagnant.
- Exchange control: There is no limit or ban to the exchange and trading of local and foreign currencies. The exchange control is liberal.
- Exchange rate: During the last years there has been a depreciation of the Euro against the Swedish krona. However the fluctuation was not particularly relevant thereby this factor does not assume a strong relevance in this analysis.
- Cultural distance: Cultural differences are deemed to be low. Although the two countries have different languages, cultures and traditions, no relevant cultural barrier exists. The long tradition of Swedish companies operating in the Italian market confirms that Italy is well receptive for Scandinavian firms.
- Political risk: Although there have been frequent political turnovers in the Italian government, the overall political risk can be estimated as low.

External factors (Home country)

- Market size: With respect to the Italian one, the Swedish market is a small market if you consider both population (60 versus 9,5 Millions) and macro-economic indicators. Nonetheless the market is still considered wide enough for the existing companies without resorting to aggressive competition.
- Competition: As claimed by the CEO, few companies can be considered as competitors. Nonetheless analyzing the market and competitors' features the competition can not be considered oligopolistic. Thereby, for the purpose of this thesis, it is deemed atomistic.
- Production costs: As explained before, the Swedish GDP per capita is higher than the Italian one and it is one of the highest among developed countries. Thereby the production cost is estimated to be high.
- Export promotion: The Swedish economy is extremely dependent on the export activities. This is confirmed by the data since the 44,50% of the GDP comes from exporting activities. Thus the export promotion is considered strong.

Internal factors (Repiper)

- Type of product: The innovation developed by Repiper is considered as a technologically intensive product, even if it has been explained how the company does not only provide a product but a comprehensive solution to drainage system renovation. The technology has already proved to be functioning and the differentiation compared to both traditional and injective methods is relevant. More specifically the technology owns advantages considering installation and result performance and it also provides a different output vis-a-vis the rival methods.
- Product adaptation: Although small modifications may be required to adapt the technology to the drainage systems currently employed in Italy, the information collected have shown that no particular change is necessary. Therefore the adaptation of Repiper's technology to meet the Italian market needs is deemed low.
- Limited resources: From the data gathered, Repiper surely shows limited human resources. On the other hand the company has recently collected 4 million Swedish

kronor to finance its growth. Nevertheless, considering the huge number of activities that the company has to finance and the lack of human resources with respect to bigger companies, Repiper presents limited resources at its disposal.

- Commitment: Both the managers show to put efforts in their work and they believe in the potentiality of Repiper's technology. Nevertheless, considering the several issues the company is facing both internally and externally and the lack of human resources, the commitment that Repiper's personnel can devote to the Italian opportunity is deemed low.

The following table summarizes the previous result in order to employ the same pattern introduced in the Figure 2 and to deduce information regarding the most appropriate entry mode for Repiper in the Italian market.

	Generally Favors				
	Indirect and Agent/ Distributor Exporting	Licensing	Branch/ Subsidiary exporting	Equity investment/ product	Service contracts
External Factors (Foreign country):					
Low sales potential	X	X			
High sales potential			X (R)	X (R)	
Atomistic competition	X (R)		X (R)		
Oligopolistic competition				X	
Poor marketing infrastructure			X		
Good marketing infrastructure	X (R)				
Low production cost				X	
High production cost	X (R)		X (R)		
Restrictive import policies		X		X	X
Liberal import policies	X (R)		X (R)		
Restrictive investment policies	X	X	X		X
Liberal investment policies				X (R)	
Small geographical distance	X (R)		X (R)		
Great geographical distance		X		X	X
Dynamic economy				X	
Stagnant economy	X (R)	X (R)			X (R)
Restrictive exchange controls	X	X			X
Liberal exchange controls				X (R)	
Exchange rate depreciation				X	
Exchange rate appreciation	X (R)		X (R)		
Small culture distance			X (R)	X (R)	
Great culture distance	X	X			X
Low political risk			X (R)	X (R)	
High political risk	X	X			X
External factors (Home country):					
Large market				X	
Small market	X (R)		X (R)		
Atomistic competition	X (R)		X (R)		
Oligopolistic competition				X	
Low production cost	X		X		
High production cost		X (R)		X (R)	X (R)
Strong export promotion	X (R)		X (R)		
Restrictions on investment abroad	X	X			X
Internal factors:					
Differentiated products	X		X		
Standard products				X	
Service-intensive products			X	X	
Service products		X		X	X
Technology-intensive products		X (R)			
Low product adaptation	X (R)				
High product adaptation		X	X	X	
Limited resources	X (R)	X (R)			
Substantial resources			X	X	
Low commitment	X (R)	X (R)			X (R)
High commitment			X	X	

Table 12: External and internal factors influencing the Repiper's entry mode selection (Root, 1998).

According to the theory developed by Root (1998) the resulting outcome deriving from the factors shown in Table 12 is the indication of the most suitable entry mode for a specific product in a foreign market. But first of all it is necessary to provide some additional clarifications. In this case, when analyzing the Repiper case study, we do not simply consider the export activity of a product but the commercialization of a method based on a patented technology as a whole. Moreover, due to the previous clarification and to other reasons, when collecting the results provided in Table 12 they have been analyzed taking into consideration the specific Repiper's point of view. More precisely, the model cannot be automatically applied by simply reading the entry mode that scored higher than the others; it must be contextualized to consider the specific case. Thereby in the overall analysis certain variables have been considered as more relevant than others in order to determine the actually most appropriate entry mode for Repiper in the Italian market. At first glance, considering the results that each alternative has scored, it is possible to deduce that non-equity mode is the most suitable option for Repiper in the Italian market.

When analyzing the data shown by Table 12 the Indirect and Agent Distributor exporting seems the most appropriate option since it scored thirteen preferences. However, as explained by Root (1998), Licensing, Branch/Subsidiary exporting and Service contracts are grouped in the same category and their aggregate value is equal to nineteen. Therefore this is the preferable option among those listed in the model. Moreover it is important to underline how the company management has revealed, since the beginning of this research project, its skepticism with respect to the Indirect and the Agent exporting. Indeed this model does not take into consideration the necessity by Repiper to have a direct relationship with the foreign companies which are responsible for the installation or that commercialize the renovation method under a license agreement. That is why this option has been rejected when choosing the entry mode in the Italian market. On the other hand, from this preliminary screening, the options currently considered by Repiper, licensing and user agreement, seem to be reasonable.

Considering the overall picture, the choice towards non-equity mode is in line with the Internal interviews regarding the entry in the Italian market. This is also confirmed by the results from the OLI variable analysis which showed medium-low internalization

advantages and thereby a low incentive to incorporate activities in the internal organization. Moreover the theoretical findings provide support for this non-equity approach: Burgel and Murray (2000) argue that most of the technology-based start-ups face negative cash flows and they tend to lack financial and human resources during their early years. Thereby they prefer to partner with local organizations to manage some critical activities such as customers' identification and pre and after-sales services.

Moreover a deeper examination is required to distinguish between a licensing entry mode and a direct export through branch or subsidiary. If we strictly look at Table 12 the latter scores higher than licensing (eleven preferences against five). Nonetheless as explained in the premises, some variables have a greater importance than others. The licensing mode scored very high when considering the internal factors. It matched three out of four factors: product characteristics, resources and commitment where branch exporting scored none preference. On the other hand the branch/subsidiary option offers higher values with respect to the external factors both in the foreign and domestic country.

Nevertheless some additional considerations need to be provided. The licensing model is not free from drawbacks. As explained by Root (1998) the most critical disadvantage of licensing is the lack of control over the marketing plan in the foreign country. Here the author, in line with the CEO's words, claims that the partner selection is fundamental but, even though the licensor makes a good job in this process, its return is still dependent on the licensee's market performance. Moreover he argues that another disadvantage is related to the absolute size of income deriving from a licensing arrangement as compared to exporting or investing in the target country (Root, 1998). There are three further drawbacks to take into consideration. Firstly, the risk of creating a competitor in the third market. Secondly, the legal actions against foreign licensees for contract violation can often be costly, require long time and their success includes a percentage of failure. In conclusion, probably the most important drawback of a licensee agreement, can be its exclusiveness. This kind of contracts usually gives the licensee the exclusive right to use the licensed technology in the foreign country. In this

case the licensor cannot use an alternative entry mode during the contract life (Root, 1998).

On the other hand the Branch/subsidiary option requires itself an evaluation. Even though this mode is included in the export entry group, it shares some features with the investment ones. Indeed it requires a financial investment in marketing branch or subsidiary located in the foreign country. Thereby, even though it does not imply a relevant investment such as a sole venture or a joint venture, this model requires certain financial resources and an higher commitment for the company. However this model allows the company to have an higher control over the foreign market, to directly commercialize the technology and to gain higher return for the patented innovation.

In conclusion these two alternatives, Licensing agreement and Branch/Subsidiary exporting, seem the most appropriate for the entry in the Italian market. They can both be considered non-equity entry mode, although a financial commitment is required in the latter option. It has been shown how none of the proposed entry modes is free from drawbacks but, according to the information collected both from internal and external sources and by matching them with the theoretical findings, they seem the most fitting to the Italian case. Nevertheless the Licensing agreement model is considered more preferable than a Branch/Subsidiary exporting. This alternative is more in line with Burgel and Murray's (2000) study. They claim that start-up companies that want to commercialize a technology-advanced product should seriously consider collaboration to exploit the track record or reputation of an established company in a foreign country. This is true considering the liabilities of smallness and newness described by Henderson (1999) and the frequent reluctance of customers to rely on small, untested and foreign suppliers (Burgel and Murray, 200). Moreover the Licensing mode has been preferred as it best suits Repiper's internal features. As explained before, regardless from the overall number of preferences of each mode, the Licensing one showed to be the most fitting mode with respect to a technology-intensive product, to the limited resources and to the low commitment that the company can currently dedicate to the Italian market.

In conclusion, it is important to specify that a licensing entry mode implies that Repiper has no control over the marketing plan to penetrate the Italian market. When selecting this entry mode the company is aware that this part of the business is managed by the licensee and the licensor accepts this condition as part of this strategy. On the contrary the other option considered in this analysis, branch/subsidiary exporting, allows full control over the marketing plan. Nevertheless as explained by Rott (1998), although the licensing mode emerged as the most promising one, this option does not imply that the company should not be concerned with the marketing of its innovation in another market, even when it is marketed under the direction of independent firms.

6. CONCLUSION

This last chapter is mainly aimed to address the research question presented in the introduction and that has been followed during the whole research process. Moreover, information collected in the internal and external findings, together with the results explained in the analysis are analyzed in order to provide managerial recommendations to Repiper's management. In conclusion, future research topics are ultimately suggested considering the subjects of this master thesis.

The main purpose of this research project is to answer the following research question:

“What is a successful commercialization strategy for Repiper to enter the Italian market?”

As the theoretical findings earlier showed, the commercialization and internationalization strategies represent two of the most critical challenges that a company faces during its growth process. These two topics were analyzed in order to collect the most relevant theories and to adopt them in the analysis of a technology-based start-up as Repiper. More specifically, the company is currently starting its international growth process outside the Swedish borders. Thereby the purpose of this master thesis is exactly to analyze these strategies from Repiper's point of view and to determine a successful commercialization strategy to enter foreign markets. In order to provide useful recommendations to the company management, the attention was focused on one target country in order to test the conceptual framework in a specific context. In this paper the Italian market was selected together with the company management. The following managerial recommendations are referred to this specific case: the commercialization strategy of Repiper's innovation in Italy.

Repiper is a Swedish company that has developed an innovative method to renovate the drainage system inside the buildings. The technology is superior both from a technical and financial point of view with respect to the alternative methods. The final output offered by Repiper is a new, self-sustaining pipe with a guaranteed service life of forty years. This innovative technology already proved to be efficient in the Swedish

market and the company management is currently taking the first steps into the international markets. Until now Repiper has exported its technology in Germany and Iceland and is bargaining a business agreement to enter the USA market. In this paper Italy was selected to test a managerial model that could be used by Repiper to face the commercialization strategy in other target markets.

The information collected in the theoretical framework show that there is not a complete agreement among the researchers when considering the commercialization and internationalization process of a company. Nevertheless every evaluation of these strategies seems to be based on two main pillars. On one hand the internal forces depend on the company resources and capabilities. On the other, the external factors are represented by the environmental conditions and by the different players which operate in that market. In this case study the internal forces are evaluated considering Repiper's internal structure and capabilities. The analysis of the external forces is performed by evaluating the Italian market potential, the competitors operating in that country and the economic, political and trade conditions. Successively this information, together with the theoretical findings collected in the second chapter, were processed and discussed considering the conceptual framework developed at the end of the same chapter. This model is aimed to determine the successive steps that Repiper should undertake before launching its technology in a new foreign country. The pattern was divided into two main phases. The first one was aimed to study ownership, location and internalization (OLI) advantages of Repiper with respect to the Italian market. The latter, was based on the analysis of the different factors influencing the entry mode selection and it was concluded with an appraisal of the most appropriate entry strategy for Repiper in Italy.

More specifically the first section of the conceptual framework regarding the OLI advantages showed that the Italian market actually represents an interesting opportunity for Repiper. Nevertheless the Swedish company does not present high advantages in all the factors that were separately analyzed. Considering the ownership advantages, the empirical findings proved how Repiper is quite lacking when considering the *size of the firm* and *international experience* factors. Nonetheless the

Swedish firm displays high *product differentiation* characteristics with respect to the alternative methods currently employed in Italy. Moreover the theoretical framework analysis exhibited how this specific factor is the only one on which the researchers find an agreement. Thereby, since product differentiation is unanimously considered as the most influencing factor to estimate the ownership advantages, they were evaluated as medium. However it is important to specify that the lack of international experience and the limited size of the firm cannot be overlooked when dealing with Repiper's internationalization process.

Conversely the appraisal of the location advantages did not present any specific issue. The market potential analysis showed how there is an high sales and growth potential for Repiper's technology in the Italian market. More specifically the study demonstrated that the northern regions and particularly the Metropolitan and Provincial Capital cities represent the areas with the highest potentiality for the company. On the other hand, from the data collected, Italy did not present any specific risk. The overall political and trade environment seems risk-less for a Swedish firm. The only doubt is related to the recovery of the whole economy. Nevertheless the overall analysis showed medium-high location advantages.

The last advantage to be analyzed was the internalization one. Considering Repiper's current situation, the company has few incentives to internalize activities that can alternatively be performed by the market. More specifically certain costs and risk actually exist but they are only partially related to the specific Italian market and more inherent to the company itself and its technology strategy.

Regarding the pure entry strategy for the Italian market, non-equity modes have been evaluated as the most suitable for Repiper to enter the Italian market. More specifically a business to business approach based on licensing agreement has been deemed the best option for the Swedish company. This alternative was evaluated as the most appropriate to start the commercialization process in the Italian competitive environment. The main reasons that support this choice regard the match between this mode and Repiper's internal factors. This result is in contrast with other previous findings (Brouthers and Nakos, 2002) which demonstrate that firms with more differentiated products or technologies prefer equity modes of entry. The same result

also contradicts those authors claiming that non-equity entry modes may reduce the potential benefits deriving from differentiated products (Agarwal and Ramaswami, 1992; Brouthers, Brouthers and Werner 1996). This could be explained since these authors mainly take into consideration MNEs and SMEs while other different factors, not considered in these studies, can influence the decision when considering technology-based start-ups which may also prefer non-equity entry modes. Thereby the results inferred from the analysis of more established companies can only partially be applied to new entrepreneurial ventures.

Moreover the model does not take into consideration some specific characteristics of the firm: Repiper is not simply willing to export a product but the whole method to renovate drainage systems which implies the use of the patented tools and the sale of the consumables employed in the process. This is not the only aspect that emerges from the application of the Root's entry strategy model to a technology-based start-up. When considering, for instance, the choice of target product, this step has low relevance since most of these start-ups do not have to choose between several products. On the contrary they usually develop a single product and they try determine whether there is a need for their innovation in that market. Furthermore the choice of the entry mode step should give an higher relevance to some variables which, from the analysis of Repiper's case study, emerged as particularly critical such as product characteristics, available resources, product adaptation and every other voice included in the so called liabilities of newness and smallness (Henderson, 1999).

However regardless of the changes to the model, the licensing mode seems the most appropriate alternative considering the resources and the international experience constraints. Through this strategy Repiper can develop relationships with already established companies in foreign markets and in this way it can take advantage of their local market knowledge and reputation. Therefore the licensing agreement is currently evaluated as the most fitting option to enter the Italian market. Nevertheless it is important to underline how the model introduced in Figure 2 and processed in Table 12 showed that another option needs to be taken into consideration: Branch/Subsidiary exporting. This alternative scored higher than licensing in the external factors but lower in the internal ones. The overall assessment displayed that, even with

less preferences, licensing is the most appropriate option in the current situation. Nevertheless the branch or subsidiary exporting actually represents a viable option for the medium-long term. This option, although it is not considered an investment entry mode, requires an higher commitment by the company and higher financial resources. Therefore it is considered an appropriate alternative once the company has already entered the Italian market and it actually demonstrates to provide high sales and to be profitable. In this case Repiper could consider to change its entry mode and choose an option that guarantees higher control and higher returns. In conclusion it is important to specify that another possible alternative exists in the long term. It is represented by the transformation of the licensing agreement into a joint venture with the licensee company.

6.1 MANAGERIAL IMPLICATIONS

From the theoretical, empirical and analytical information collected during this research project, several managerial recommendations regarding the commercialization and internationalization strategy at Repiper can be inferred. As explained throughout the whole paper, this inquiry is focused on the commercialization strategy in the Italian market. Nevertheless the following implications drawn from the analysis of this specific market can be employed by Repiper's management when dealing with the issue in other potentially profitable target countries.

- *Deeper analysis of the target markets.* In order to grow internationally, the company has to develop a comprehensive and systematic approach to evaluate the opportunity related to each specific market and not simply consider the age of the buildings in the target country. This means that Repiper has to analyze both country-level macro factors regarding the whole country and its economic environment and micro level factors which consider the specific technology, its application and a possible adaptation to that specific country. The OLI advantages analysis is considered a reliable and effective tool to determine the opportunities and risks related to a specific target market.
- *Entry mode selection.* The international growth is a continuous process that requires constant attention. As previously explained, the entry mode selection is a complex

choice which implies the evaluation of several, internal and external, factors. Therefore, when dealing with this decision, Repiper should be aware that the most fitting entry mode in the short-term could not be the most appropriate in five or ten years. The company should have an open approach to the entry mode selection process and periodically evaluate whether the selected mode is still the most suitable or it should be changed due to varied conditions.

- *Identify a specific area in the target country.* Considering the features of Repiper's method and the financial and human resources constraints, after Repiper has targeted a country, it should start the commercialization from the most promising region or area and test there whether the country is actually well receptive of the company technology. In Italy, for example, the north-west regions, which include the Metropolitan cities of Turin and Milan, emerged as the most fitting area for the launch of the Repiper's innovation in the Italian market.
- *Common practices and previous experience.* When running the market analysis for the Italian case, it emerged how the commercialization of Repiper's technology cannot disregard the analysis of the renovation practices in that specific context. It means that this kind of interventions can be performed in a different way from country to country. That is why the systematic evaluation should consider also the information from field experts as the engineer and the plumber interviewed in this paper. In the specific Italian environment, the information collected showed a fundamental importance of training activity and education courses. The latter previously proved to be an essential practice to reduce the reluctance to new methods such as with the introduction of the exterior insulation and finishing system method to renovate the exterior of the buildings. This is even more important in countries, such as Italy, which have formerly shown a medium-high reluctance to innovations if not presented through the right distribution channel.

6.2 FUTURE RESEARCH PROPOSAL

During the analysis of the theoretical sources regarding the commercialization and internationalization process, a lack of consistency was found among the scholars. This confirms that the breadth of these topics makes difficult to find an agreement among

researchers. For instance several papers showed discordance with respect to the most influential factors affecting the internationalization strategy.

Moreover great attention has been given to the commercialization and internationalization activities of large and already established companies (Agarwal e Ramaswami, 1992; Brouthers, Brouthers and Werner, 1999; Root, 1998). However, only during the last fifteen/twenty years the attention has been turned, although in limited way, to the internationalization process of small and medium enterprises (SMEs). Dunning's eclectic framework, for instance, has been applied to SMEs and it proved to be appropriate (Brouthers and Nakos, 2002). Nevertheless the model has never been adopted for start-ups and a further analysis would be required to determine whether it is suitable to technology-based ones. Dunning's eclectic framework proved to be both a descriptive and a normative model (Brouthers, Brouthers and Werner, 1999) and it also demonstrated to work well when referred to SMEs but its actual applicability to start-ups has to be demonstrated yet. Furthermore Root's model to determine the most appropriate entry mode in a target market would require some changes to adapt the model to new technology-based firms as shown in the previous paragraph.

In conclusion, it should be pointed out that this paper is not aimed to determine other factors that are influential to the commercialization process in a target country nor it intends to develop a model universally applicable. Thereby future research is necessary to determine the validity of the framework for all the technology-based start-ups, regardless of the Repiper's case, and to determine other important factors to be included in the conceptual framework.

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APPENDIX 1

INTERVIEW GUIDELINE- INTERNAL INTERVIEWS

General firm information

1. Origin of Repiper
2. Company strategy
3. Vision
4. Mission
5. Value offering
6. Percentage of sales coming from foreign markets

Technology characteristics

1. Technology specifications
 - Technicalities
 - Patents
2. Manufacturing
 - Strategy for manufacturing and logistics
 - Dimensions: cost and time
3. Customer considerations
 - Critical performance measures for customers
 - Customization

Firm characteristics

1. Human resources
 - Number of employees
 - Background and international experience of employees
 - Need for new expertise?
2. Financial structure
 - Capital structure and financing
 - Long-term financial plans
3. Network
 - partnerships, collaborations, suppliers

Critical Business Factors

1. Risk of dissipation of knowledge
2. Risk in deterioration of quality
3. Cost in making and enforcing contracts

The Swedish market

- Internal competition
- Market size

The Italian market

- Objectives and goals when considering the potential entry into the Italian market
- What product do you plan to launch in the Italian market?
- Do you think Repiper's technology and method require any particular adaptation to be applied in the Italian market?
- What are the main drivers you take into consideration in the entry mode selection?
- What technique do you usually employ to estimate the market potential in a foreign country?

APPENDIX 2

INTERVIEW GUIDELINE- EXTERNAL INTERVIEWS

Potential of Technology

- How do you evaluate the potentiality of the Repiper's technology in the Italian market?
- Where could it be practically applied?

Practical Application

- Methods are currently employed to renovate the drainage system in Italy
- Material the pipes are made of in the Italian residential buildings
- Average pipes diameter of the drainage systems in Italy
- Awareness of the new technology developed by Repiper

Standards and Regulation

- Is there any specific regulation or standard issued by the Italian authority when dealing with the renovation of the drainage system?

Critical factors

- What are the main obstacles to the commercialization of this technology in the Italian market?